RIPE NCC Community Projects Fund Application Form 2020

Because some of the formatting and links were lost in the plain text submission, the answers to the questions in the Application Form, along with links to projects and full formatting are provided below. More info is available on the partner page for this funding application.

https://www.thegreenwebfoundation.org/the-green-supply-project/

Applicant Name

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Organisation (if applicable)

The Green Web Foundation

Organisation Type

Non-for-profit Entity

Name of the Project

The Green Supply Project

Project Type

Community, Open Source Software, Research and Development, Measurements

Area

Network measurement and analysis, Internet governance, Peering and interconnectivity, Internet of Things

Project Description

At the Green Web Foundation, we believe that the internet must serve our collective liberation and ecological sustainability, and that the network itself must be sustainable.

To achieve that, the people and organizations who build the internet must first understand the climate impact of these networked systems, and how to change it.

We will help do this in two ways. First, we will develop the training materials and team activities needed, so technologists can map their own digital supply chains more easily. Secondly, we will also make the structured data needed for taking informed decisions more accessible.

This project complements a growing suite of open tools housed at the Green Web Foundation that enable internet professionals to accelerate the transition to green energy and to advocate for more sustainable practices. Building on our team's expertise in the energy grid, internet technologies, open data, open educational resources, community training and internet advocacy, we are well positioned to take this work forward.

With the RIPE NCC Community funding, and the opportunity to collaborate with experts in IP networks, we can improve transparency and professional literacy around how the internet is powered. We can, and should make the internet green, open and decentralised.

Project Team

Please give a description of the project team members (background, relevant experiences etc).

Michelle Thorne (**@thornet**) is interested in climate justice and a fossil-free internet. As a Senior Program Officer at the Mozilla Foundation, Michelle leads a PhD program on Open Design of Trusted Things (OpenDoTT) with Northumbria University and serves as an Environmental Champion in Mozilla's Sustainability Program. She is managing editor of a magazine called *A Sustainable Internet for All* with Climate Action Tech, EIT Climate KIC and Mozilla. She commissioned the Museum of the Fossilized Internet (2019) and Anatomy of an AI System (2018) by Vladan Joler and Kate Crawford, which was acquired to the permanent collection of the V&A and MoMA. She founded Mozilla's Open Internet of Things Studio, the Mozilla Festival and a web literacy program called Maker Party. Michelle is currently a Thinker in Residence at Climate KIC.

Chris Adams is a co-organiser of the online community Climate Action.tech, and co-founder of greening.digital, a consultancy specialising in helping digital teams build greener digital products and services.

He has a background working at climate focussed startups addressing low carbon travel with Loco2/ RailEurope, open source carbon calculations with AMEE (Avoid Mass Extinction Engine), and tracking carbon emissions from public spending with Spend Network.

At The Green Web Foundation, he leads on energy, open source and open data. Through the green web foundation, he has contributed code and knowhow around sustainable design to a number of open source projects used to instrumenting and measuring digital projects, like open source web performance tracking tool sitespeed.io, and searx, the privacy focussed, open source search engine, and Green Cost Explorer, tool to help calculate carbon emissions from cloud providers usage APIs.

Last year, Chris spoke about the intersection between climate and tech at Chaos Computing Congress, Map Camp, DjangoConEU, Festival of Maintenance, Heart of Clojure, JsConf EU, as well as organising the OMGCLIMATE unconference series in London and Berlin

Rene Post is the co-founder of The Green Web Foundation, and since 2009 has been building and maintaining the world's largest public database of green website sites and

the digital infrastructure they run on. He heads up operations at the foundation. previously founded and grew iPing Research BV, an internet performance measurement company serving the Dutch market throughout the 1990 and 2000s.

Russ Garrett is a generalist software engineer with a focus on systems architecture and operations. He built and maintains Open Infrastructure Map - a view of the world's infrastructure based on data from openstreetmap, and runs IRCCloud, a hosted IRC-based chat service. He also co-founded the London Hackspace, a non-profit, community-run co-operative workshop for technologists, and Electromagnetic Field, a non-profit outdoor technology festival in the UK.

Project Results*

Please list the project objectives in bullet points here.

- Collate and extend the current datasets on OpenStreetMap, relating to internet infrastructure. Some has been added for the UK, but there is less coverage for the rest of Europe. This data listing renewable infrastructure like solar and wind farms exists in public *distributed energy resource registers,* which list planned and existing project. The Green Supply project would load these, and the information from The Green Web Foundation about other datacentres into Open Street Map, and if licensing allows, refer to existing registers like PeeringDB. The goal would be to show where digital infrastructure providers and renewables are available, and make it easier to switch.
- Develop open educational resources aimed at internet professionals that help them understand how digital services create an environmental impact, and how to improve them.
- Publish and disseminate open training materials for internet professionals about the larger climate impacts of the internet
- Enhance existing open tools from the Green Web Foundation and other partner organizations to inform and mobilize internet professionals to climate action
- Ultimately, increase transparency about digital supply chains, especially *where the network touches the ground*, so that internet professionals can make informed decisions towards a sustainable, decentralized internet.

Benefits to the RIPE Community*

Description of how the project serves the RIPE community.

Agency and purpose

If you are a technologist in 2020, you are likely aware of the climate crisis, but you might now know what steps you can take as a professional to face it. This project exists to help members of the RIPE community understand the role they can play in facing it, and how their skills can lead to the creation of a re-decentralised, more sustainable, and open internet, and speed our society's transition away from relying on fossil fuels.

Knowledge

This project also serves to make a body of work accessible, about the environmental impacts of the internet and its potential in speeding transition, in a way that IT practitioners can incorporate in their practice. This guidance is now out there, but largely in academic papers, or specialised reports, and not easily accessible to busy IT practitioners.

A path to re-decentralisation

There has been a trend towards centralisation in the tech sector, as markets have consolidated around a smaller number of 'hyperscale' players, like Amazon, Google, Microsoft. While there are some benefits to cloud computing, diverse ecosystems are healthy ecosystems.

In the energy sector, the trends are pointing the other way. As renewables have become cheaper, large monolithic providers of power from fossil fuels have given way to more loosely organised, more decentralised, diverse mix of renewable energy providers, in an arrangement that looks a lot like the internet did around 10-15 years ago.

Because datacentres are such large consumers of energy, and because software is increasingly designed to work in distributed ways, we think it is possible to take advantage of trends in the energy sector to help re-decentralise the internet itself, and make it more sustainable and resilient at the same time.

Innovation and new services

There is a lot of overlap between energy use and carbon emissions, and the 'greenness' of electricity is affected when and where it's generated. Because there

is already a culture of instrumentation with network engineering, it's likely that new projects, or ways to use existing tools for greening how we use digital infrastructure will be discovered.

This has happened at the web level with new services like Cabin being developed, drawing on earlier work from the Green Web Foundation around making carbon emissions from web traffic measurable.

Does your project consider the sustainability aspects?

Yes

If yes, please explain how?

This entire project is about improving transparency and professional literacy around how the internet is powered and its environmental impact, so the way we work as technology professionals is more sustainable.

Project Publicity

Details of project publicity (via press, social media etc.) and how the RIPE NCC will feature in this plan.

- Create a communications calendar to ensure timely and appropriate messaging with RIPE NCC and partners
- Regular updates and "working in the open" on the Green Web Foundation's website
- Publish milestones on partner organizations websites and social media: RIPE website, Mozilla, Climate Action Tech, Open Streetmap, and more
- Prepare a press kit and, if appropriate, conduct press interviews with RIPE NCC community members

Existing Partners

Who are the existing partners and their level of funding/support?

- **OpenInfrastructure Map:** an open source project. enthusiasts contribute expertise, community of mapping and infrastructure

- **ClimateAction.tech:** a network for internet professionals, for feedback and testing from its members. We have a pool of people to test training materials with here.
- **Mozilla** (in-kind contribution, via Sustainability Program)
- **Climate KIC**: expedition funding of around 10k EUR initially allowed us to convene internet professionals and climate experts around sustainable internet. This project is a result of that initial work.

Country of implementation*

Netherlands and Germany

Has the project already started*

Yes

If Yes, please highlight the start date below

- March 2020

Duration of Project

- 18 months

Project Budget*

EUR 60,000 (stretch: EUR 90,000)

Requested amount of funding from RIPE NCC*

EUR 60,000 (stretch: EUR 90,000)

Duration of activities from this funding

- 12 months

Budget Breakdown*

Please include a breakdown of the project cost as bullet points.

- **Internet Transparency: Open Infrastructure Data & Map: €15,000**
    - Collate and clean the data: 1 expert stipend x 5 days = €5000
    - Import and publish the data: 1 expert stipend x 5 days = €5000
    - Review licensing: €1000
    - Materials and hosting: €2000
    - Documentation: €2000
- **Green Internet Literacy: Open educational resources: €15,000**
    - Design and develop training materials: 1 expert stipend x 5 days = €5000
    - Test with group of internet professionals: 1 expert stipend x 5 days = €5000
    - Honoraria for participants: 5 x €500 = €2500
    - Materials and design: €1000
    - Documentation: €1500
- **Project leadership and operations €30,000**
    - Project lead expertise: 2 experts x 10 days = €20,000
    - Coordination and project management: €3000
    - Dissemination and reporting: €3000
    - Green Web Foundation core operating costs: €4000
- **Stretch: €30,000**
    - More geographic coverage. Expand the dataset from the Netherlands, France and Germany to include more countries in the RIPE region. **€10,000**
    - Increase professional development impact. Pilot a “train the trainer” module with the dataset and professionals development resources. **€10,000**
        - Design and develop training materials: 1 expert stipend x 5 days = €5000
        - Test with group of internet professionals: 1 expert stipend x 5 days = €5000
    - Support emerging, existing open source projects, with project support and access to subject matter expertise. Example projects include: green cost explorer, greentrace, green algorithms, and cloud-jewels. **€5,000**
    - Hire a project manager to help direct contributions from the community for adapting existing network analysis tools to measure carbon emissions

from energy usage, and provide access to subject matter expertise. 10 person days over the project
€5,000

Activities of the project that will benefit from RIPE NCC funding

- Funding would rapidly accelerate the creation of the internet infrastructure dataset
- Enable more robust resources to train professionals about green internet literacy, including capacity for localization and testing with participants
- Increase the reach of messaging about a sustainable internet amongst professionals
- More explicit ties to RIPE NCC assets like internet measurements and maps

Key Performance Indicators

Please list the Key Performance Indicators (KPIs) of your project.

- No. of new Datacentre / Network infrastructure facilities visible in OSM, and in maps using these layers
- Renewable energy infrastructure resources (i.e. wind turbines, batteries, etc) visible on OSM, with links to existing datasets/registers.
- Usage stats for
- # of remixes and reuses of the map
- Digital teams mapping their infrastructure with our activities (maps created, but this might not be publicly shared)
- Republishing and reuse of the project's open educational resources
- Mentions and blog posts about this work by partners and others in the field

Timeline and important milestones*

Please list the timeline and important milestones of your project.

Project start: 1-3 months

- Onboard experts and collaborators

- Stakeholder consultation. Resolve where the data should live, governance, licensing, potential pitfalls.
- Announce project kickoff
- First draft of guidelines workshopped, based on expert guidance (DEFRA, Green Public Procurement, Academics, etc.)
- Shortlist for workshop participants

Project implementation and reporting: 3-6 months

- Infrastructure from first state in first country loaded into OSM
- Subsequent states loaded into OSM
- Data visible in maps run by stakeholders
- Workshops designed and delivered
- Collect feedback for iteration on the open educational resources
- Presentation at RIPE 81
- Publish results so far with Climate Action Tech and other partners
- Half-time grant reporting

Project iteration and improvements: 6 - 9 months

- Refine and continue testing OSM data
- Improve documentation and initiate localization
- Outreach to influential internet professionals for feedback and sharing the work
- Continued presentation and workshopping of content at relevant events, like the Mozilla Festival
- Prepare funding pipeline for continuing the work
- If stretch goals funded, expand datasets, initiate Green Trace enhancements, and kickoff train the trainers offering

Project reflections and next steps: 9 - 12 months

- Press launch and public push
- Interviews with key stakeholders and participants
- Project debrief and reflections
- Line up next round of funding for the work
- Grant reporting

Why you*

In ten words or less, please explain why we should fund your project.

It’s a climate crisis & internet is essential. Let’s act now.