Laurent Vanbever—NSG Group Retreat, Oct 19–22 2022, Chamonix, France

A new  project

Or not, maybe… we'll see

What is a  project?

Let's ask GPT-3…

Let's ask GPT-3…

What is a lighthouse project?!

Let's ask GPT-3…

What is a lighthouse project?!

A lighthouse project is a project that…

#1 is highly visible and gets a lot of attention.

Let's ask GPT-3…

What is a lighthouse project?!

A lighthouse project is a project that…

#2 raises awareness about a particular issue or problem.

Let's ask GPT-3…

What is a lighthouse project?!

A lighthouse project is a project that…

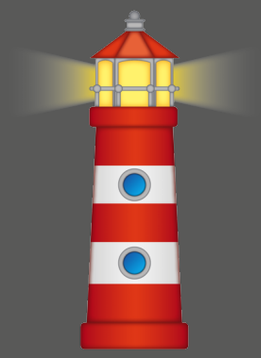
#3 sets an example to show other people what is possible.

Let's ask GPT-3…

What is a lighthouse project?!

A lighthouse project is a project that…

#4 sets an example for other projects to follow.

A new  project

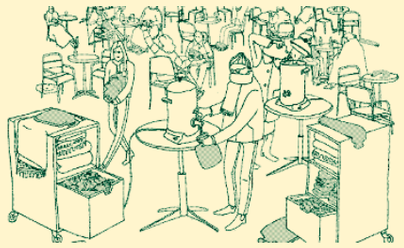
A new  project

A ☀-powered Internet backbone

How to Build a Practical Household Bike Generator

We built a pedal-powered generator and controller, which is practical to use as an energy source and exercise machine in a household — and which you can integrate into a solar PV system. We provide detailed plans to build your own, using basic skills and common hand tools.

March 2022



The Revenge of the Hot Water Bottle

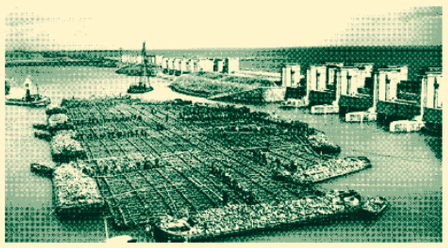
Imagine a personal heating system that works indoors as well as outdoors, can be taken anywhere, requires little energy, and is independent of any infrastructure. It exists – and is hundreds of years old.

January 2022

The Printed Website: Volume III & The Comments

The printed archives of Low-tech Magazine now amount to four volumes with a total of 2,398 pages and 709 images.

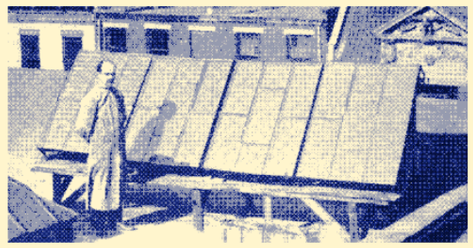
December 2021



Fascine Mattresses: Basketry Gone Wild

Around the 17th century, the Dutch started reinforcing their dykes and harbours with sturdy mats the size of football pitches – hand-woven from thousands of twigs grown on nearby coppice plantations. These “fascine mattresses” were weighted with rocks and sunk into canals, estuaries, and rivers.

November 2021



How to Build a Low-tech Solar Panel?

George Cove, a forgotten solar power pioneer, may have built a highly efficient photovoltaic panel 40 years before Bell Labs engineers invented silicon cells. If proven to work, his design could lead to less complex and more sustainable solar panels.

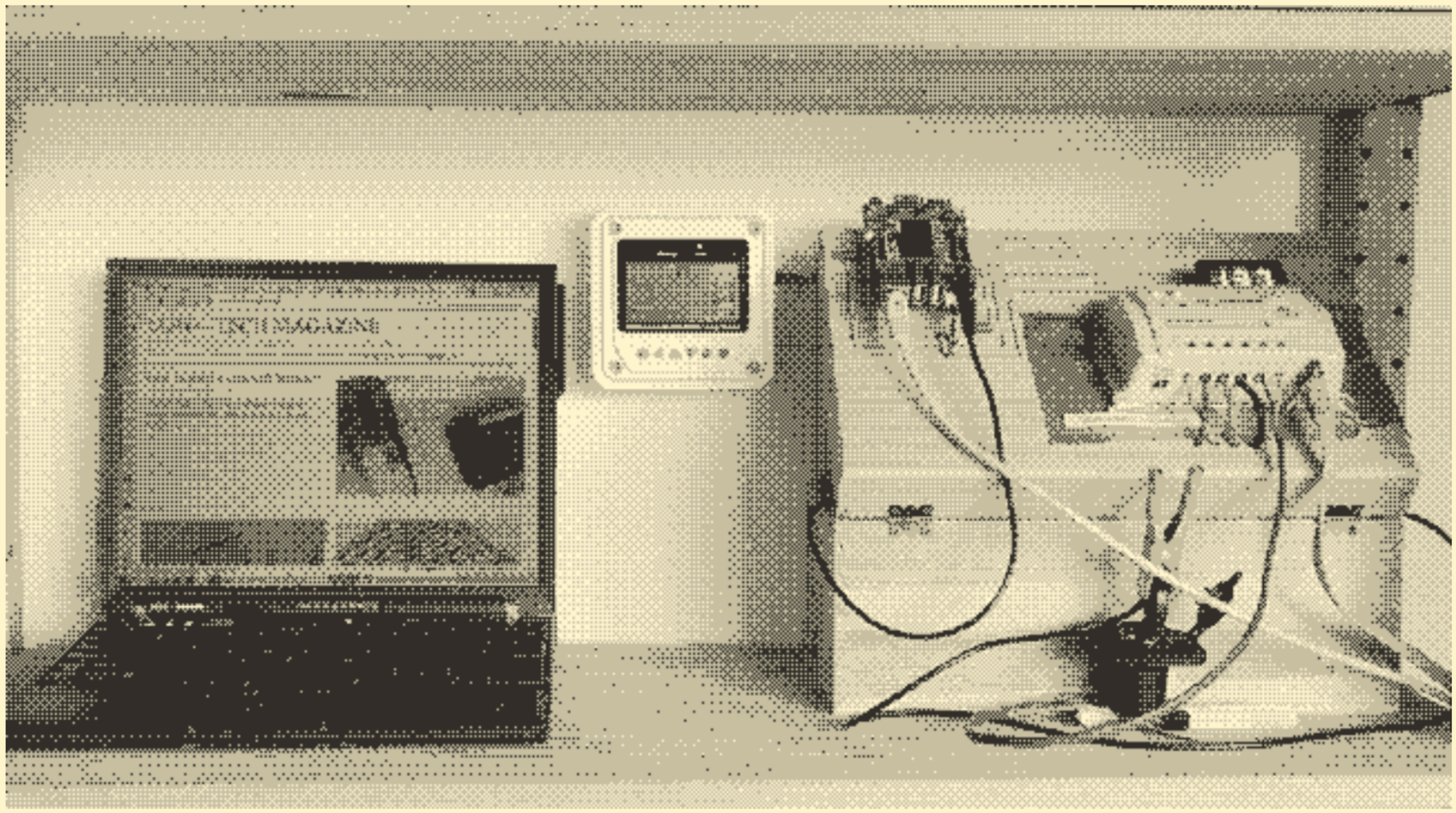
October 2021

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline ☀

About this website

This website is a solar-powered, self-hosted version of Low-tech Magazine. It has been designed to radically reduce the energy use associated with accessing our content.



The solar powered server that runs this website.

Last update: April 22, 2022

Page size: 393.07KB

Low-tech Magazine questions the belief in technological progress, and highlights

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline ☀

Power

This website runs on a solar powered server located in Barcelona, and will go off-line during longer periods of bad weather. This page shows live data relating to power supply, power demand, and energy storage.

Power supply

This is a forecast for the coming days, updated daily:

TODAY
☁ Overcast throughout the day.

TOMORROW
⛅ Partly cloudy throughout the day.

DAY AFTER TOMORROW
⛅ Mostly cloudy throughout the day.

This weather forecast is powered by DarkSky.

Power demand

These are live power statistics of the solar powered server:

Local time	14:54 CEST
Uptime	16 weeks, 6 hours, 27 minutes
Power usage	2.53W
Current draw	.20A
Voltage	13.54V
CPU temperature	21.70°C
CPU load average *	18.00%
Solar panel active	yes
Battery capacity	100%

Can we build a solar-powered Internet backbone?

Can we build a solar-powered Internet backbone?

***off*-grid**

as a first approximation at least

(most likely, no 99.999% uptime)

Can we build a solar-powered Internet backbone?

interconnecting
networks *not* users
(that is, for now)

Myth to debunk

Myth to debunk

Off-grid devices are

10× to **100**× slower

& way too unreliable

wrt grid-powered ones

I think an off-grid backbone can be fast & reliable,

I think an off-grid backbone can be fast & reliable,

just not *all the time*

I think an off-grid backbone can be fast & reliable,

just not *all the time*

we need to provide
predictability

node design

network design

routing design

node
design

network
design

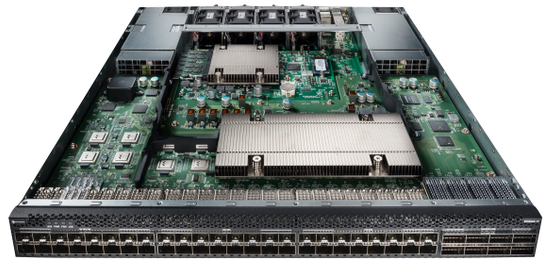
routing
design

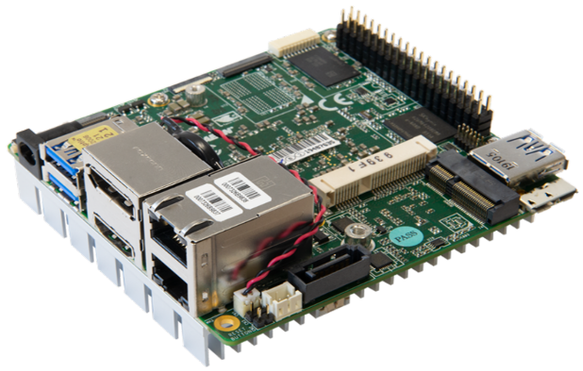
Team 1 is about dimensioning and designing *one* solar-powered node of the backbone

The consumers

The storage & producers

The consumers





Tofino 1

~100 W "measured" (@roland)

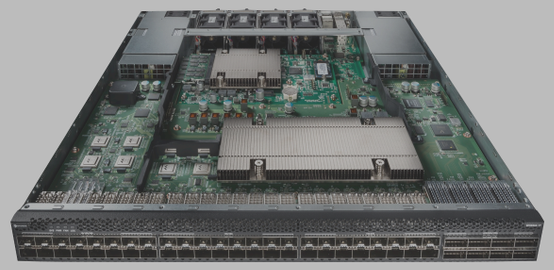
~436 W from the spec.

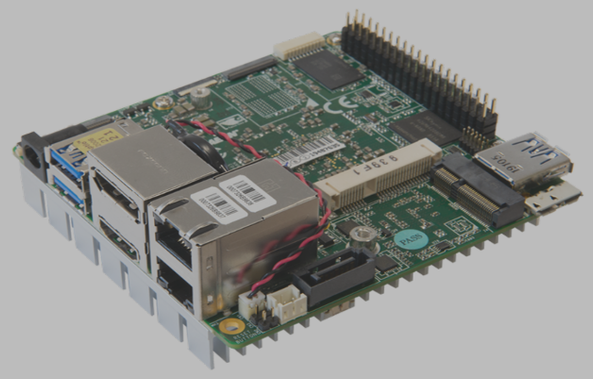
Energy-efficient server

~5 W idle, average ~20 W

~1k CHF max.

The consumers





The storage & producers

Tofino 1

~100 W "measured" (@roland)

~436 W from the spec.

Energy-efficient server

~5 W idle, average ~20 W

~1k CHF max.

PylonTech US5000

4.8 kWh 48 V

2.5k on brack.ch

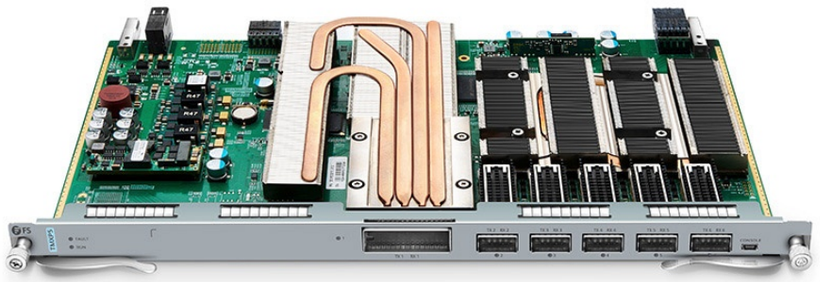
Solarpanel 400+W

~500 CHF

+ controller

cheap

The (other) consumers



Equipments to power dark fibers?

Probably not needed at first,
it's also a *zoo* out there

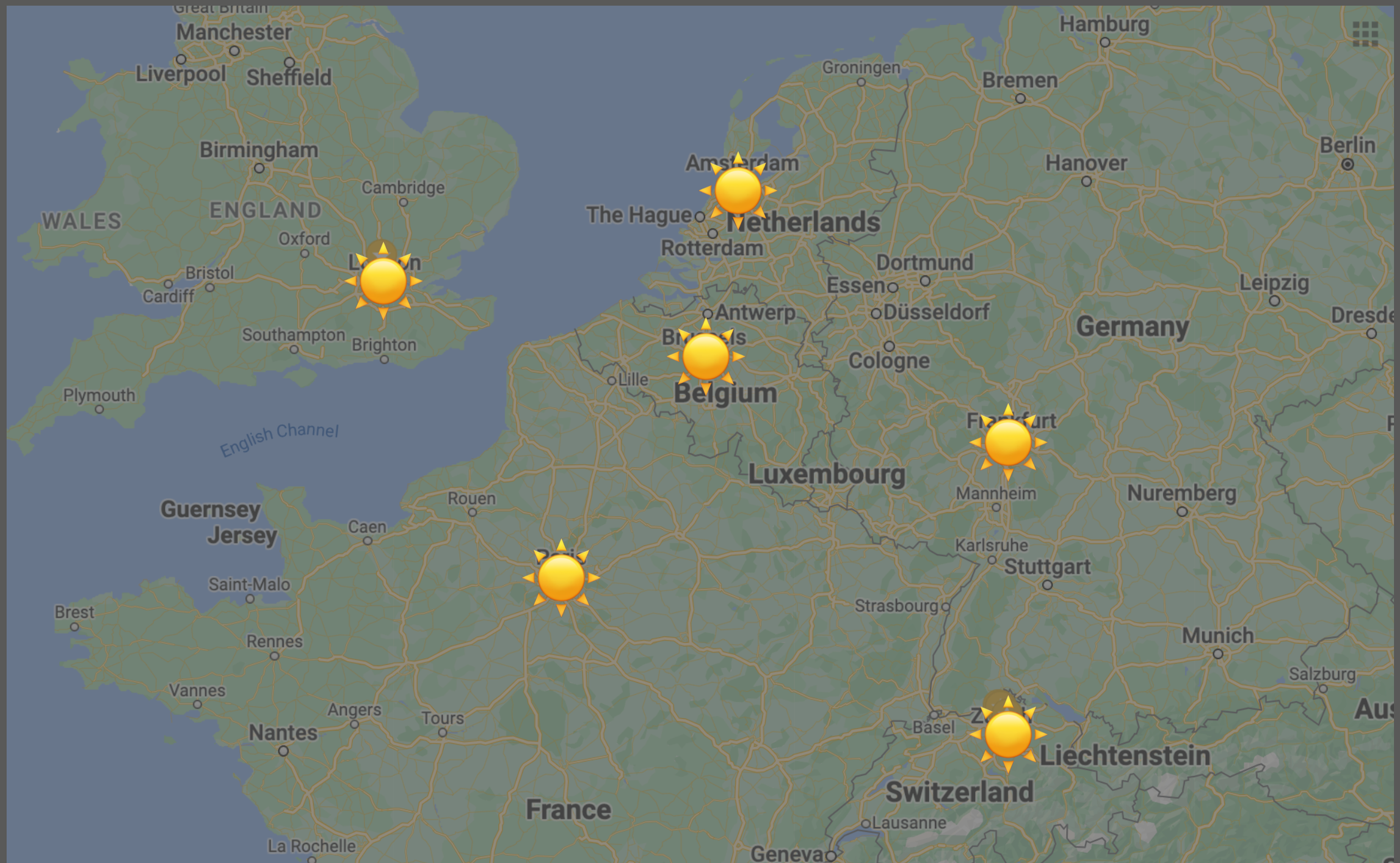
node
design

network
design

routing
design

Team 2 is about *where* to place *and* *how* to connect these nodes

Team 2 is about *where* to place *and* *how* to connect these nodes



node design

network design

routing design

Team 3 is about *how to route* traffic,
what new primitives we need

A new  project

A ☀-powered Internet backbone

Today's goals

Assess Potential of the idea

Design Possible roadmap moving forward

IF

IF this makes any sense

IF this makes any sense (a big if, literally)

IF this makes any sense

We could build a proof-of-concept ***soon***, possibly ordering

- battery
- solar panel(s)
- controller(s)

in the coming weeks

for a first ETZ deployment

Today's plan

Now	Brainstorm on work packages
Afternoon	Work in *k* subgroups
End of day	Wrap-up in plenary