

windkit

build your own
wind turbine

Open Source Hardware
DIY Energy System

an introduction to the
windkit project →

Cover Illustration Leonard Ernel



introduction



windkit is a small-scale wind turbine built by ERNI collective. It powers off-grid systems – independent of the central grid.

It generates power (~400 Watts) and charges batteries, which can run everyday devices through an power inverter.

It's about learning, building, and taking responsibility for your own energy supply.

You need wind, the right location, and technical curiosity. Autonomy takes effort.



windkit is an free open-source wind turbine.



This is still a prototype, currently on site to test it and to collect data. Not plug-and-play.



Building it requires skills: woodwork, metalwork, soldering, and: patience.



~100 hours of work. Not a weekend project.



But: You learn everything + ability to fix it!
You are able to create your own energy!
And that's the point.



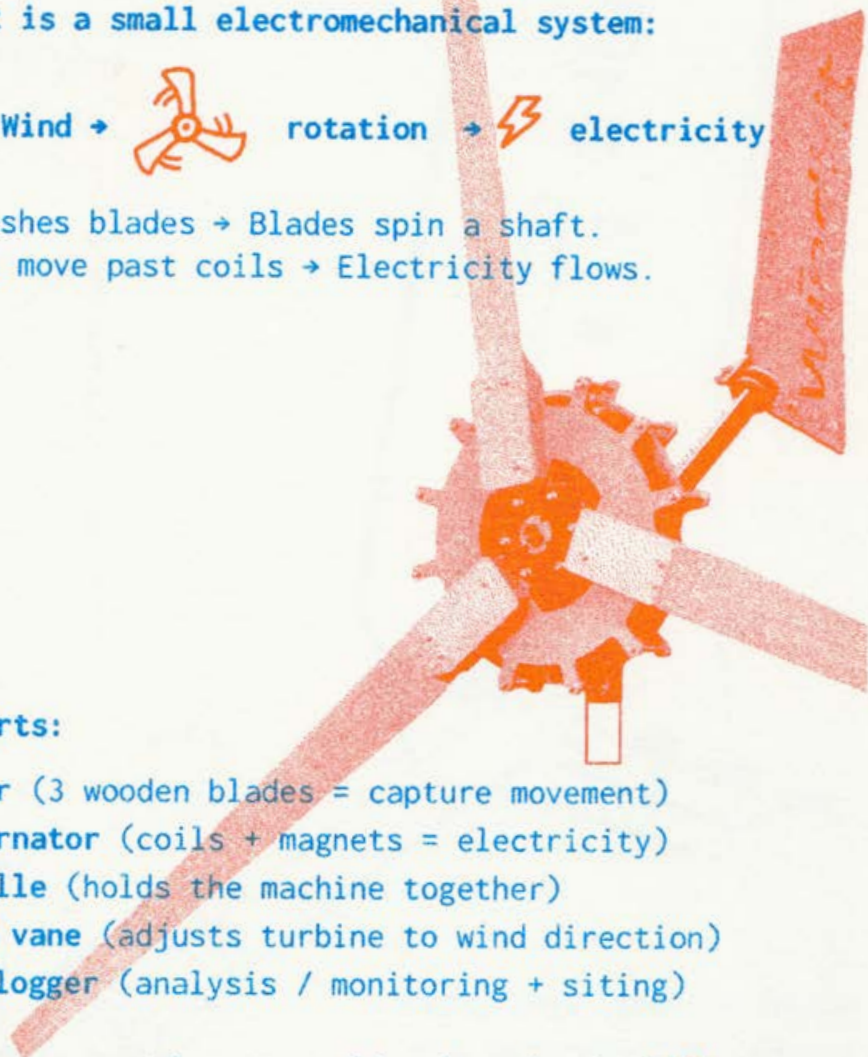
system overview



windkit is a small electromechanical system:



Wind pushes blades → Blades spin a shaft.
Magnets move past coils → Electricity flows.



Main parts:

- rotor (3 wooden blades = capture movement)
- alternator (coils + magnets = electricity)
- nacelle (holds the machine together)
- wind vane (adjusts turbine to wind direction)
- datalogger (analysis / monitoring + siting)

Everything is modular. Everything is understandable.
Nothing is hidden.

No black boxes. No sealed units.
No planned obsolescence. No patents.



tools & materials



This project is hands-on and  do-it-together. 

You will need:



Woodwork:

Saw, chisel, plane → shape blades



Metalwork:

Drilling, cutting, welding → build nacelle



Electronics:

Soldering, wiring → connect system



Extras:

Epoxy resin, coil winder, vacuum injection process, CNC and laser cutting, measuring tools

Use local materials, recycle & reuse
Hack what you have.

Skills are part of the build.

bill of materials:

v.gd/2GMTL0

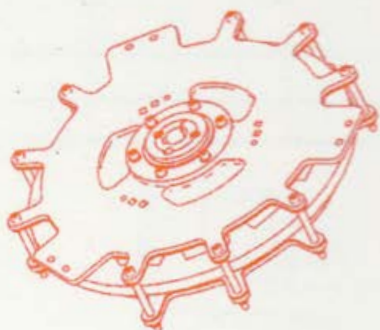


CAD models:

v.gd/upynbp



alternator _ nacelle



The alternator is where motion becomes electricity. It consists of the rotor and stator.

Coils are wound and connected.

Magnets rotate over the coils → current is generated.

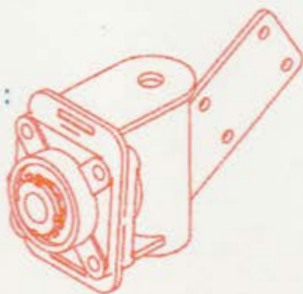
Precision matters:

Bad alignment = lost energy.

The nacelle holds everything together: bearings, shaft, structure.

This is the mechanical core.

Build it strong.



rotor

stator

nacelle

v.gd/7melzv



v.gd/Ajtgcw



v.gd/FjUYSL



rotor _ vane _ datalogger



The rotor ↑ captures the wind.

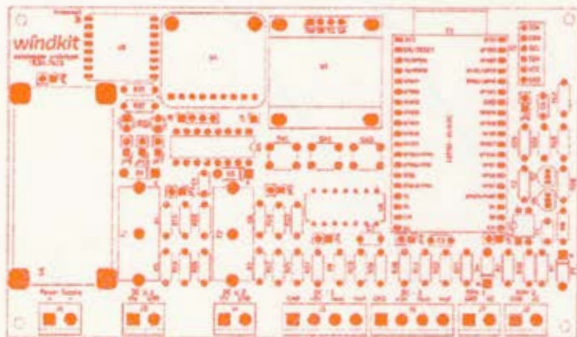
3 blades, carved from wood,
manually or by CNC mill
Shape defines performance.

tricky part!

The wind vane →
keeps the system aligned.



The datalogger ↘ tracks:
wind, electricity,
system behavior,
is used for sigting.



Because building
is not enough -
you measure,
learn, improve.

blade

v.gd/hMw51H



wind vane

v.gd/1VWWDh



datalogger

v.gd/sRII00



assembly



Everything comes together here.

Rotor + alternator + nacelle + vane.

Check:
alignment
connections
stability

Assembly takes time - be patient
- rushing causes failure.

Then: Let the wind turn your work into energy.

assembly

v.gd/lBtCLb



windkit.cc

Build it together.
Improve it. Share it.
windkit exists because
knowledge was shared.



This zine is not the manual.
It is an invitation:

Full documentation + build guide:

v.gd/wFpclY



Project Wiki:

windkit Documentation v.gd/YCkQiE

Get in touch: hello@windkit.cc

Mastodon: chaos.social/@windkit

Respect to all contributors of
open hardware, and everyone
resisting closed systems and
borders.

Supported by:



TMDC

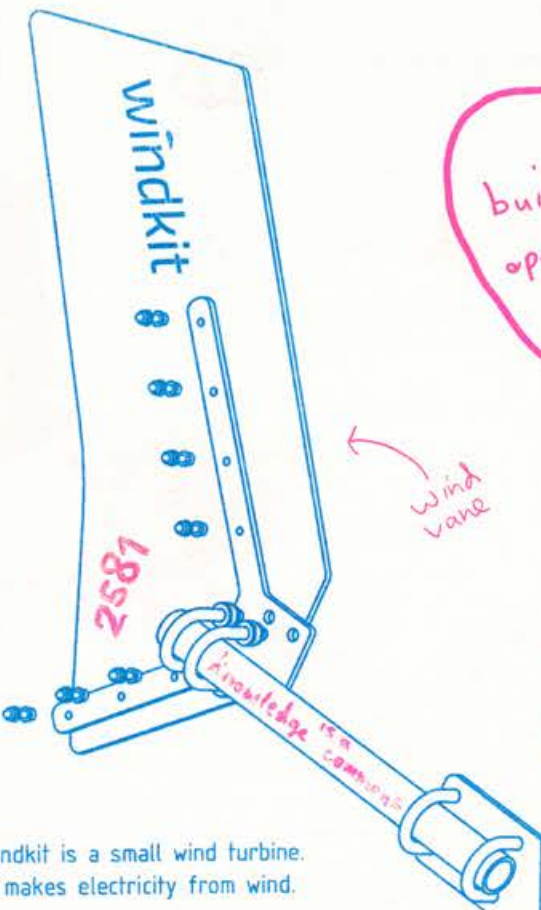
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build with open hardware

THIS PROJECT MAY CAUSE CRITICAL THINKING

wind

windkit is a small wind turbine. It makes electricity from wind.

You can use it off-grid (without the public grid) connect it to a system with batteries and an electricity inverter.

The rotor is 2 meters wide. It can make up to 400 watts in strong wind.

But listen: This machine will NOT power your whole house. It will NOT work on your balcony. And without wind = no energy. (Simple as that.)

windkit is not a product. It is an open-source project.

You can build it yourself. You can repair it yourself. You can understand how it works.

You need tools. You need time. You need patience.

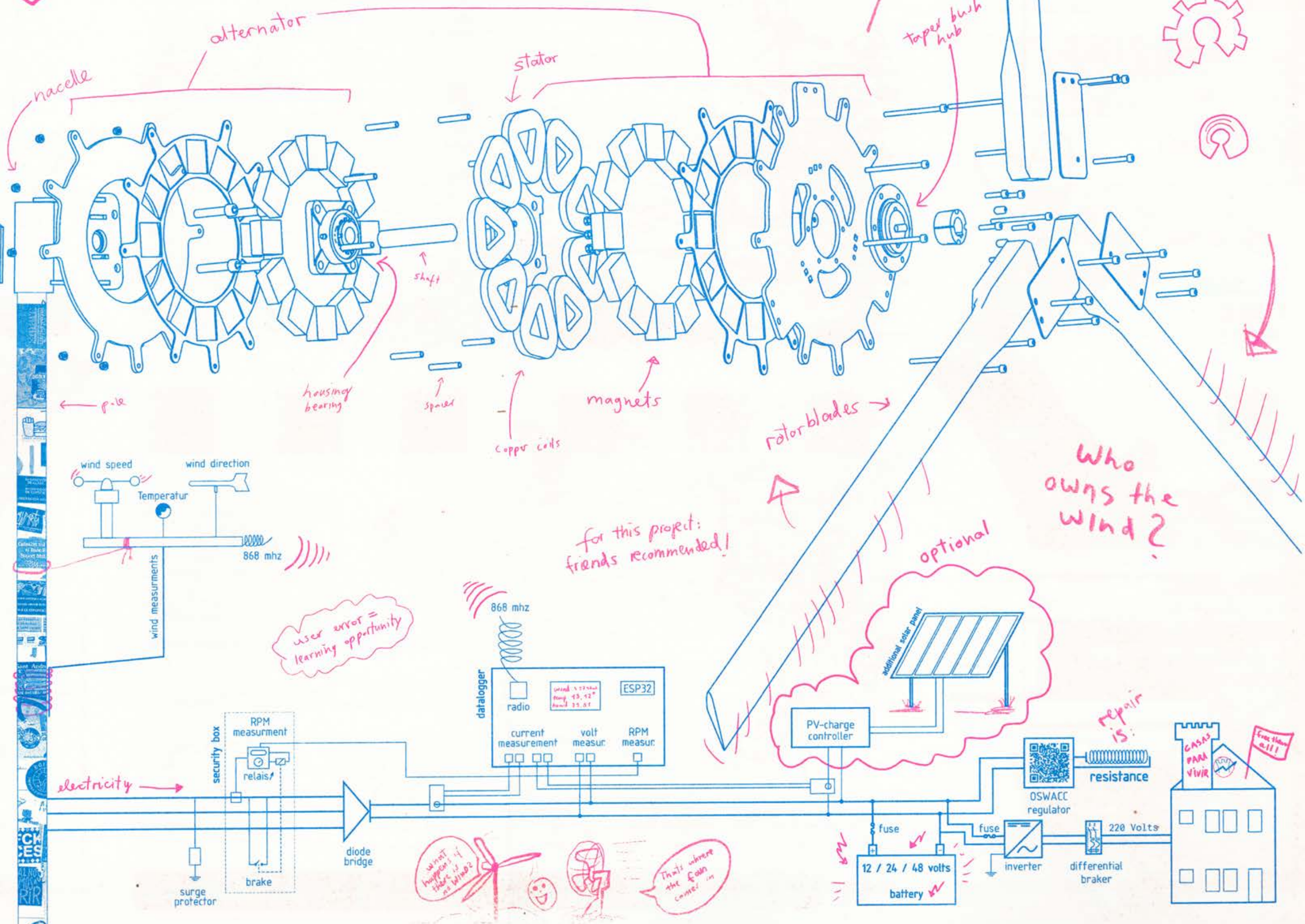
Sometimes it will fail. That's normal. Because this is not about convenience. It is about learning.

And maybe also about this: Big energy systems are far away. This one is in your hands.

windkit will not make you rich. But it can make you a bit more independent. And that is a different kind of power.



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who owns the wind?

optional

repair is

for this project: friends recommended!

user error = learning opportunity

what happens if there is no wind?

That's where the fun comes in

