



**Provide clean, affordable and accessible
power with smart wind turbines.**

EPFL Investor Day
December 10th, 2024

Speaker:

Sébastien Le Fouest - CEO

sebastien.lefouest@windworks.ai



Onsite power production.

yearly electricity use:
324 MWh

30 m

yearly yield
~200 MWh

ROI £
6-9 y

ROI CO₂e
1-2 years

yearly yield
~47 MWh

£220k



£92k
53 tCO₂e



£82k
47 tCO₂e



£40k
13 tCO₂e



Smart vertical-axis wind turbines.



efficient in turbulent
wind



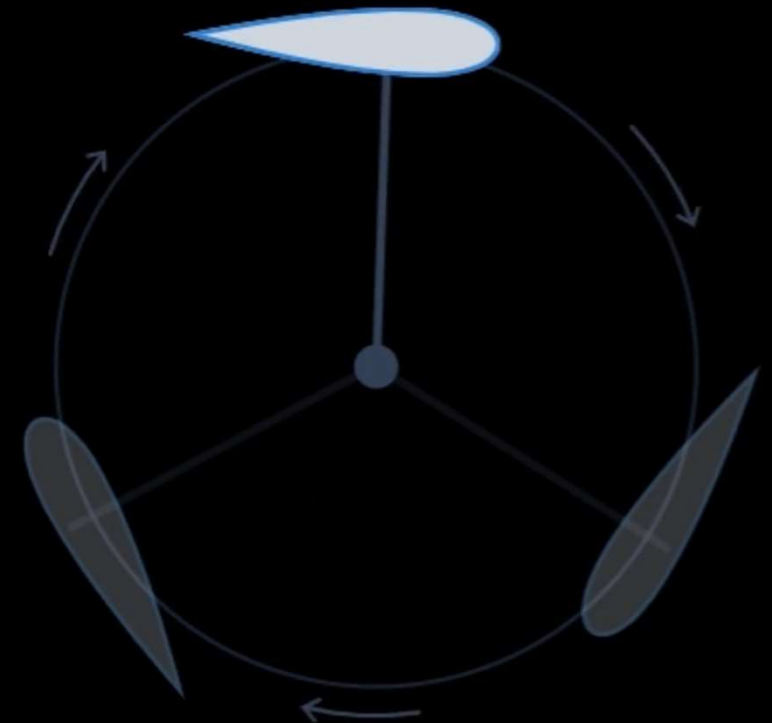
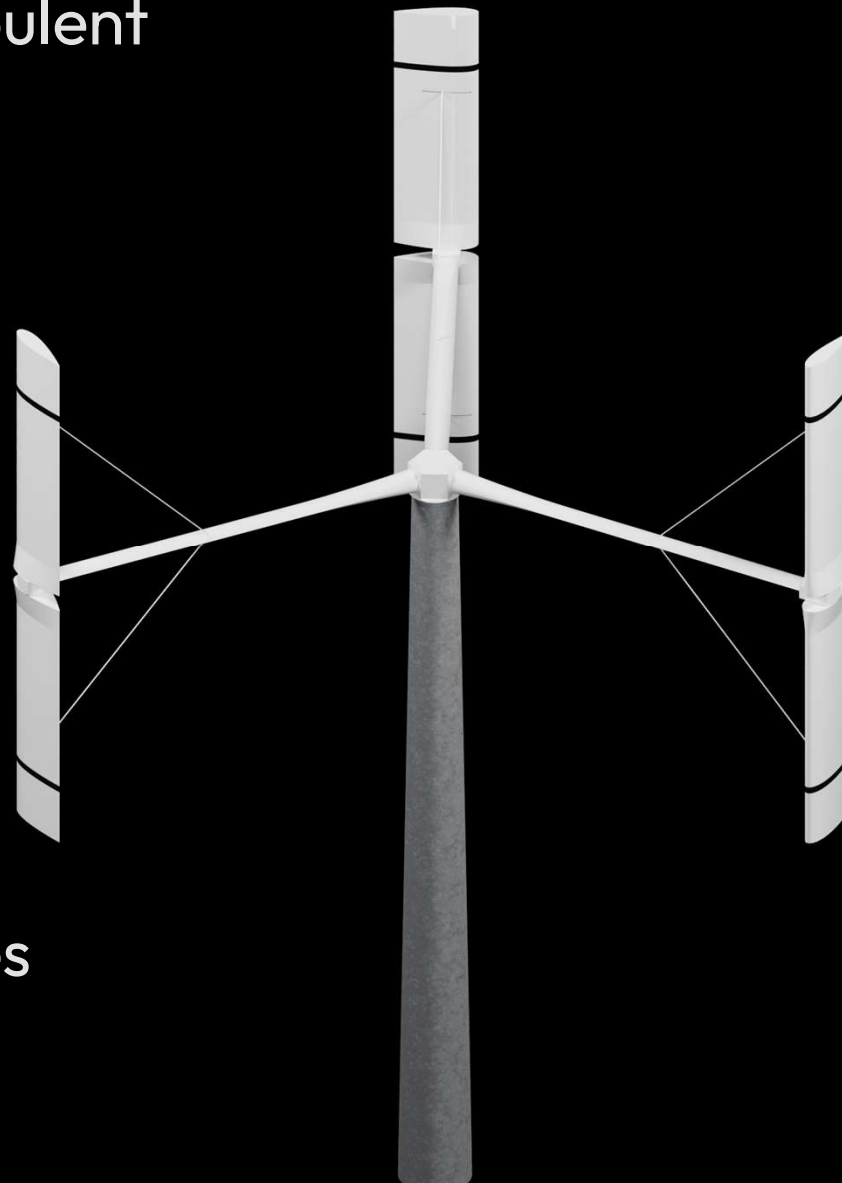
quiet in
operation



fauna-
friendly



impulsive forces



x3 efficiency

-70% damage

Results published in Nature Communications
2024

Target customers.



Annual energy
demand

0.2 – 2 GWh

Peak time
consumption

>50%

Sustainability
PR value

high



MIGROS



Renova

TAM

€ 38 Bn

8% CAGR



EPFL

Traction.



€ 2M – Dec 24

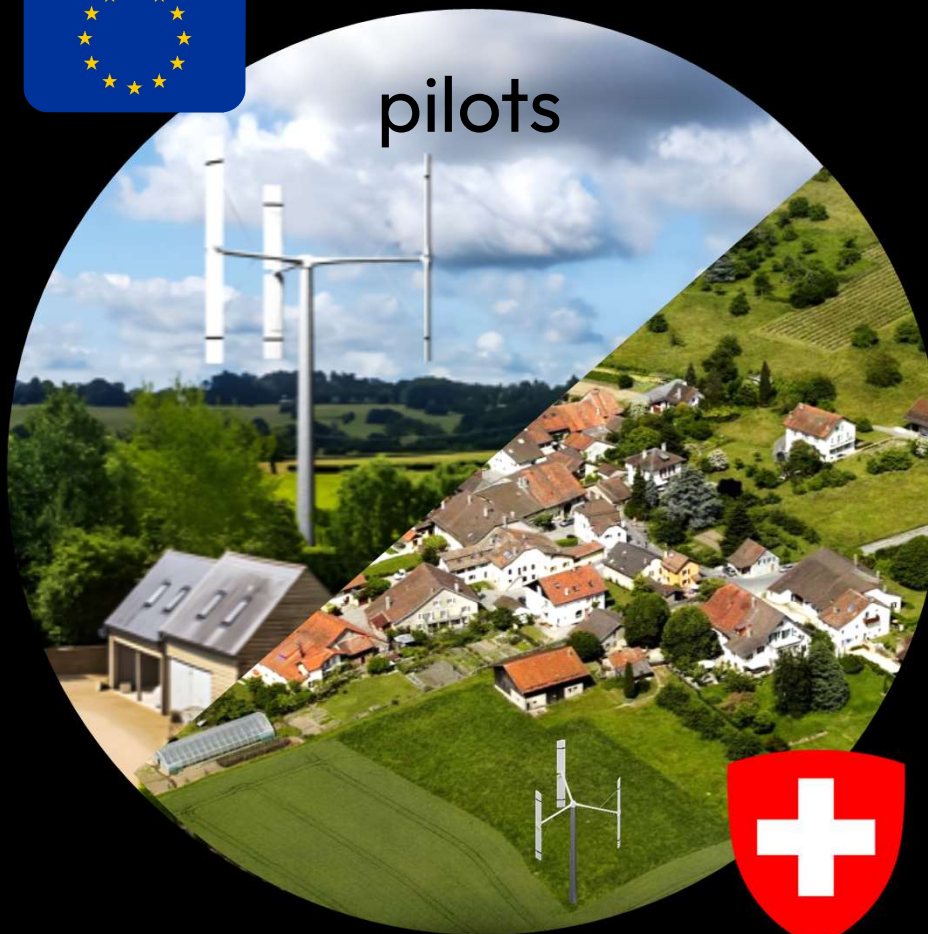
market

2 LOIs

10+ interested



pilots



CHF 500k – Mar 25

non-dilutive
funding

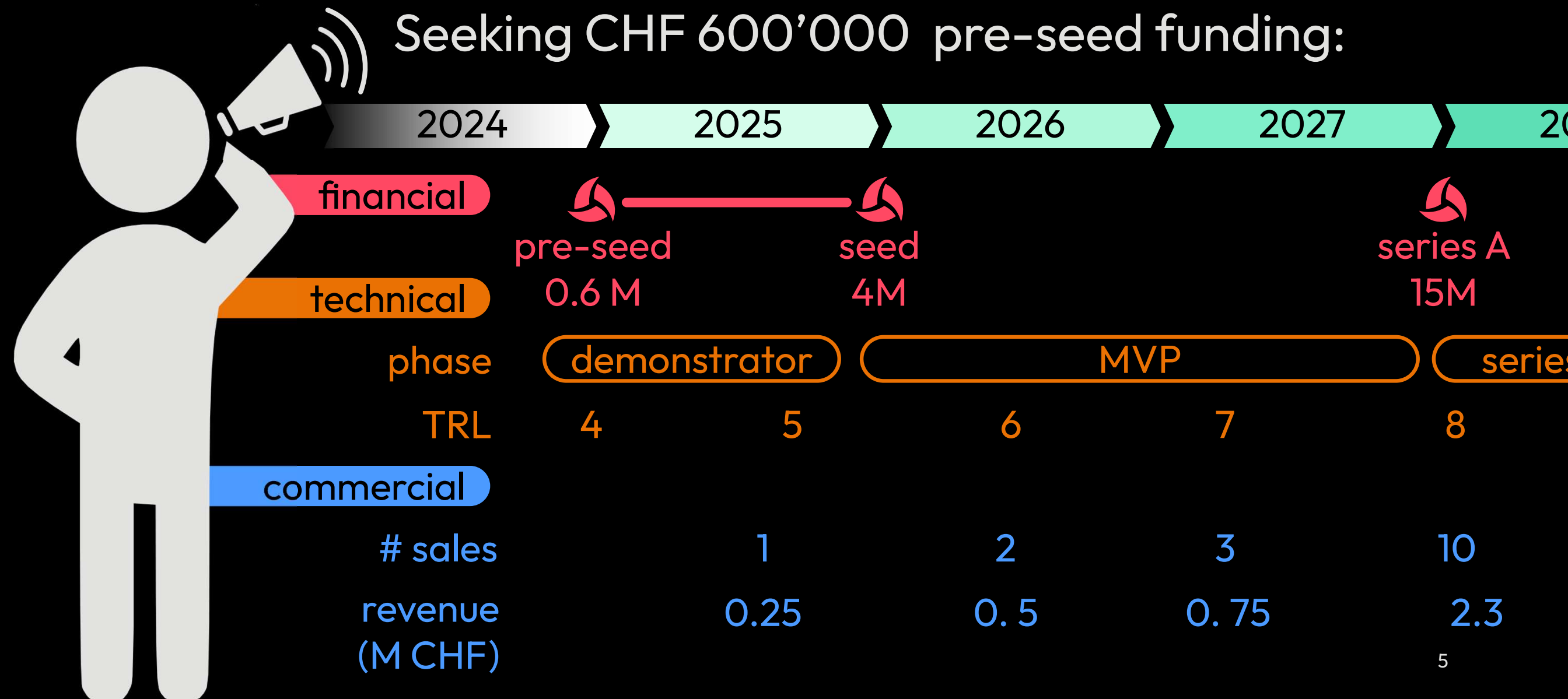
CHF 370,000

- ✓ TRL 3 → 4
- ✓ IP protection
- ✓ team

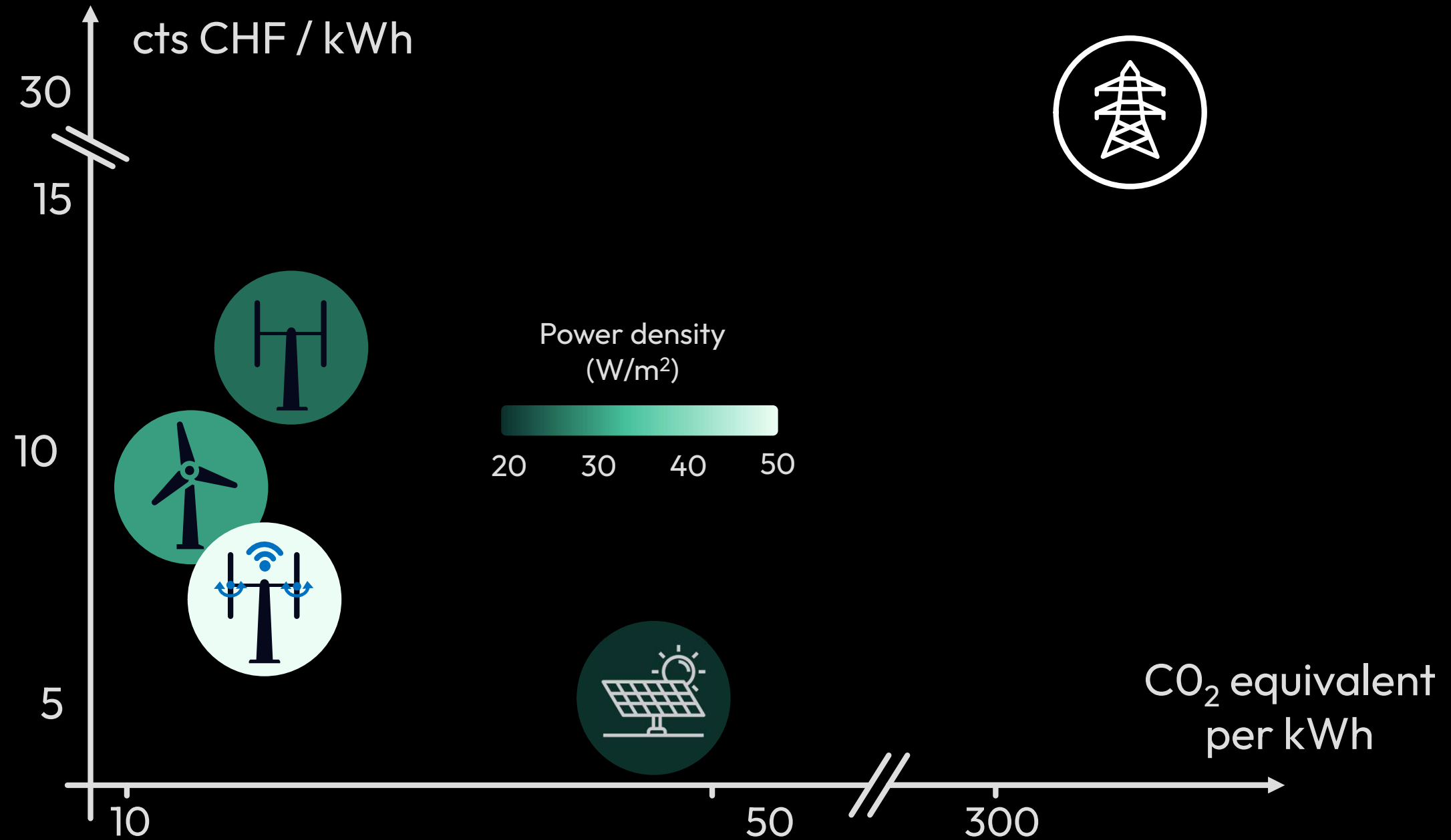
Call for action.



Seeking CHF 600'000 pre-seed funding:



Competition.



Our team



Business development



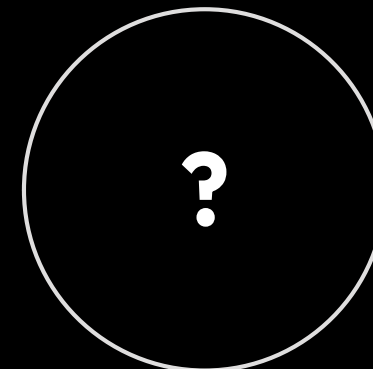
Dr Sébastien Le Fouest – 100%
CEO & co-founder

 entrepreneur &
aerodynamics guru



Matthew Taylor – 50%
business developer

 climate tech
startup wizz




Product owner

Technical development



Dr Daniel Fernex – 100%
CTO & co-founder

 flow control & machine
learning genius



Ben Colety – 100%
mechanical designer

 creative hands-
on builder

Support



Business strategy



Adam de Sola Pool

Clean Tech Pioneer, VC, 20+
year experience deploying
wind farms

Key industry players



Patrick Richter

Founder & CEO
at Agile Wind
power,
Switzerland



Jonas Boström

CTO at SeaTwirl,
Sweden

Scientific advisor



Prof Karen Mulleners

Head of UNFoLD at EPFL,
Switzerland

Financial and material support

EPFL

UNSTEADY FLOW
DIAGNOSTICS LAB
UNFoLD

FNSNF

FONDS NATIONAL SUISSE
SCHWEIZERISCHER NATIONALFONDS
FONDO NAZIONALE SVIZZERO
SWISS NATIONAL SCIENCE FOUNDATION

BRIDGE

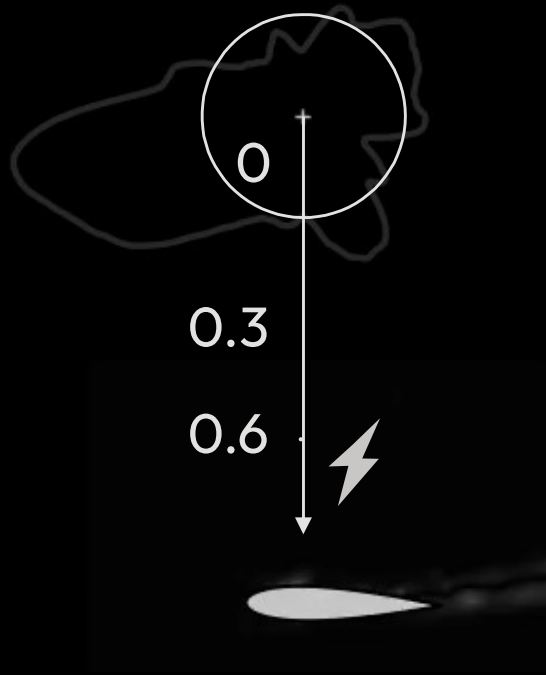
VENTURE
KICK

Real-time blade control



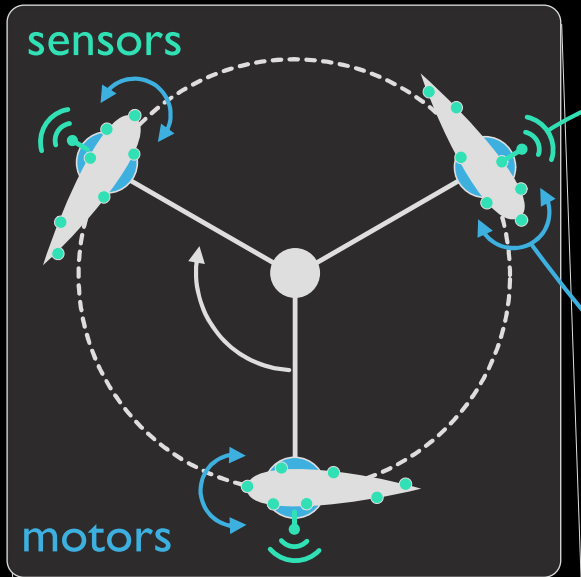
standard blade

with real-time blade control



x3 efficiency
-70% damage

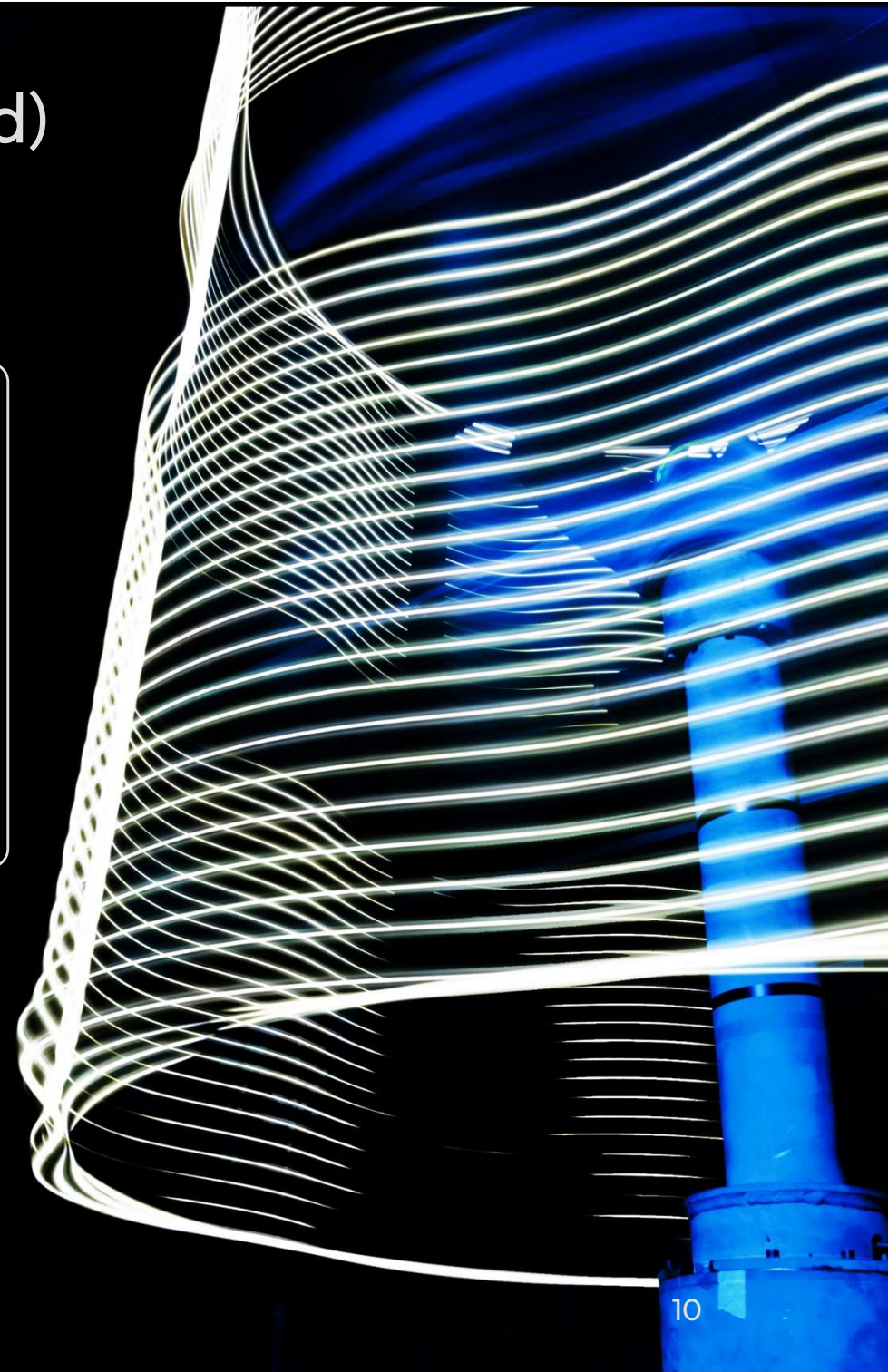
Unique value proposition (patenting initiated)



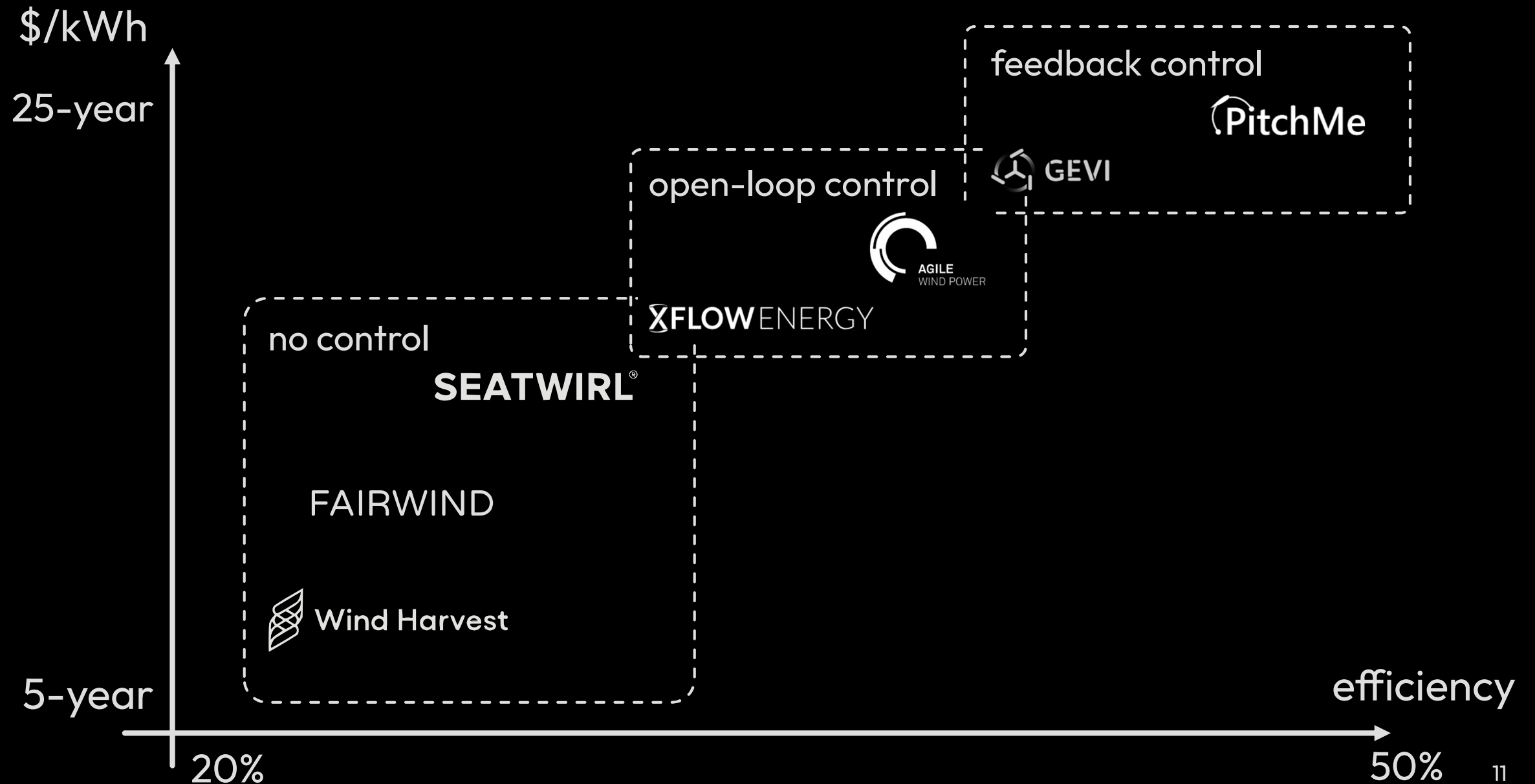
Windworks control method



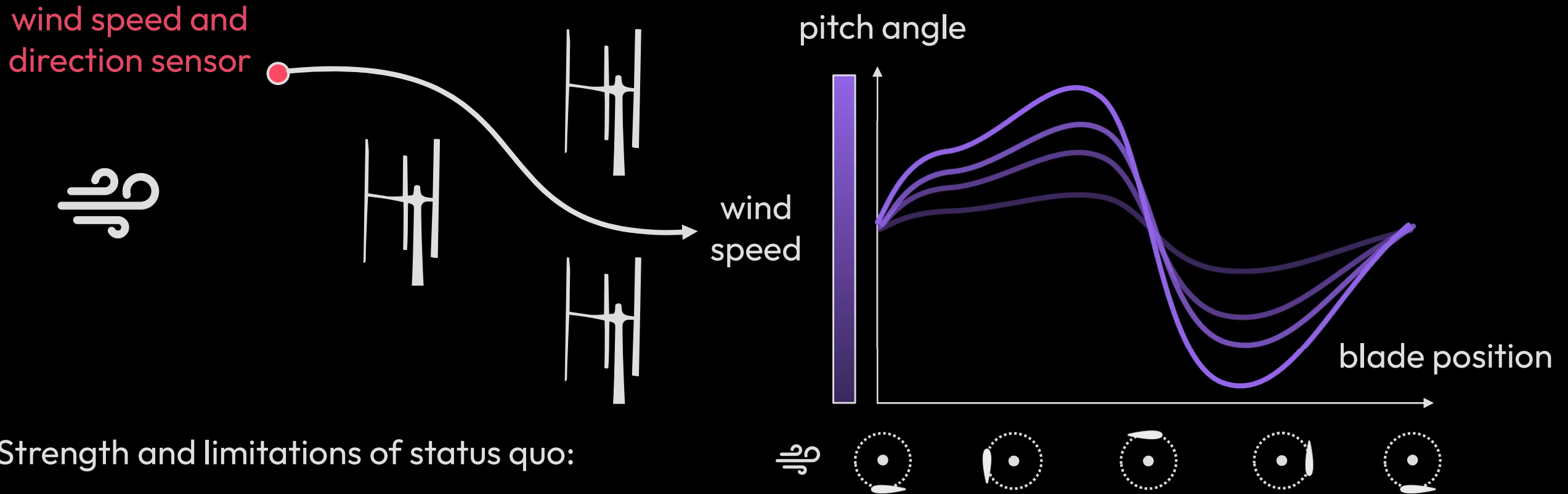
- data driven & adaptive
- robust and reliable
- tailored & multi objective



Competition



Current industrial state: open-loop control



- ⌚ cheap & easy implementation
- ⌚ improves efficiency in steady wind



- ⌚ poor measurement accuracy
- ⌚ fails keeping turbine safe from wind gusts
- ⌚ limited efficiency improvements

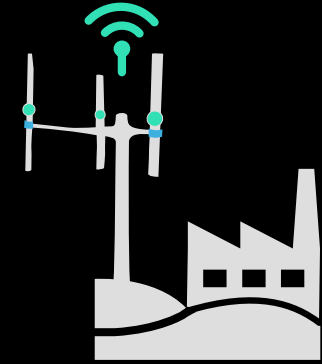
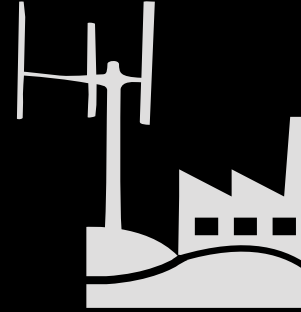
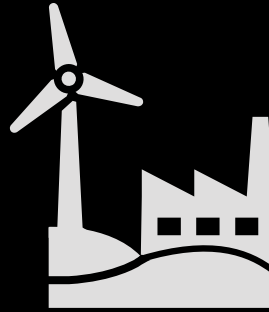
Case study – competitive analysis



Dailens



30m



average power (kW)

5.5

11.8

21.6

lifetime (years)

25

12

25

LCOE (CHF/MWh)

84.7

124.1

60.2

distance to nearest
home (m)

150

25

20

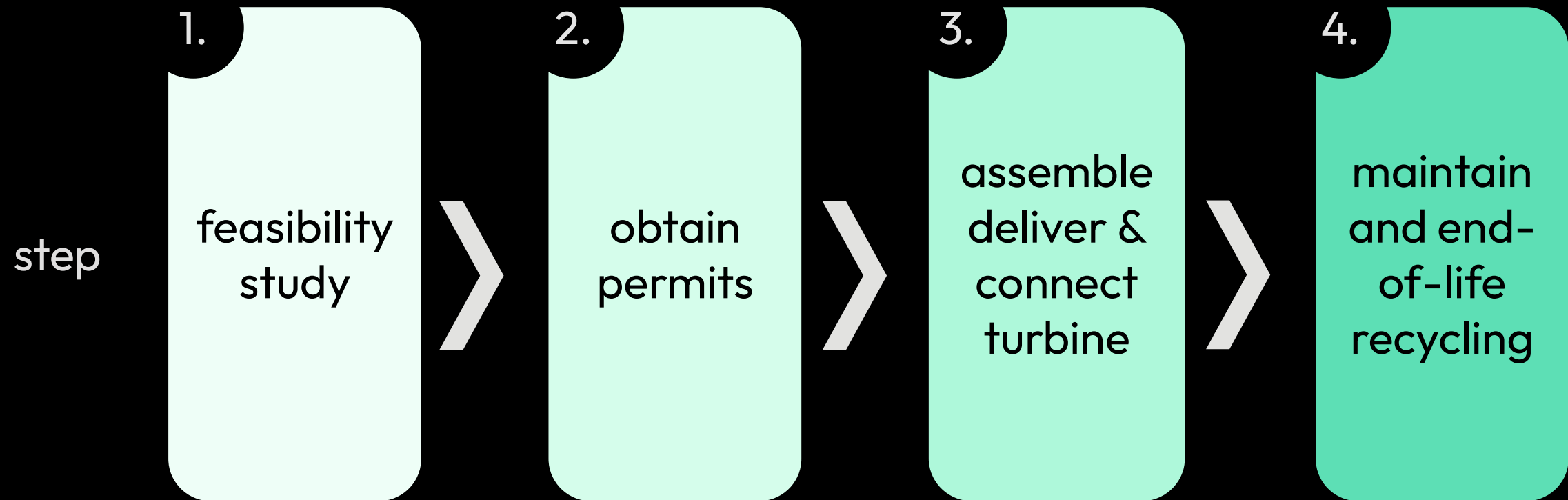
energy density (kW/hectare)

16.5

70.8

129.6

Project implementation



Value chain



from suppliers

sensor

rotor

blades

generator/motors

drivetrain

tower

foundation



Windworks:

1. assemble & equip
2. operation & maintenance
3. End-of-life

client:



CHF 0.07/kWh



6.5 years payback
time

Opportunity in wind energy

270 GW
17% of demand

