



## Water & energy event: Innovative technologies for sustainable water authorities



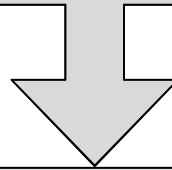


## E-Kite wants to eliminate the need for renewable energy subsidies

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### Our mission

“Enable profitable generation of electricity from wind without the aid of any subsidies or other incentives”



### Our vision

“Develop kite power systems that can generate electricity at cost levels below those of fossil fuel-based technologies”



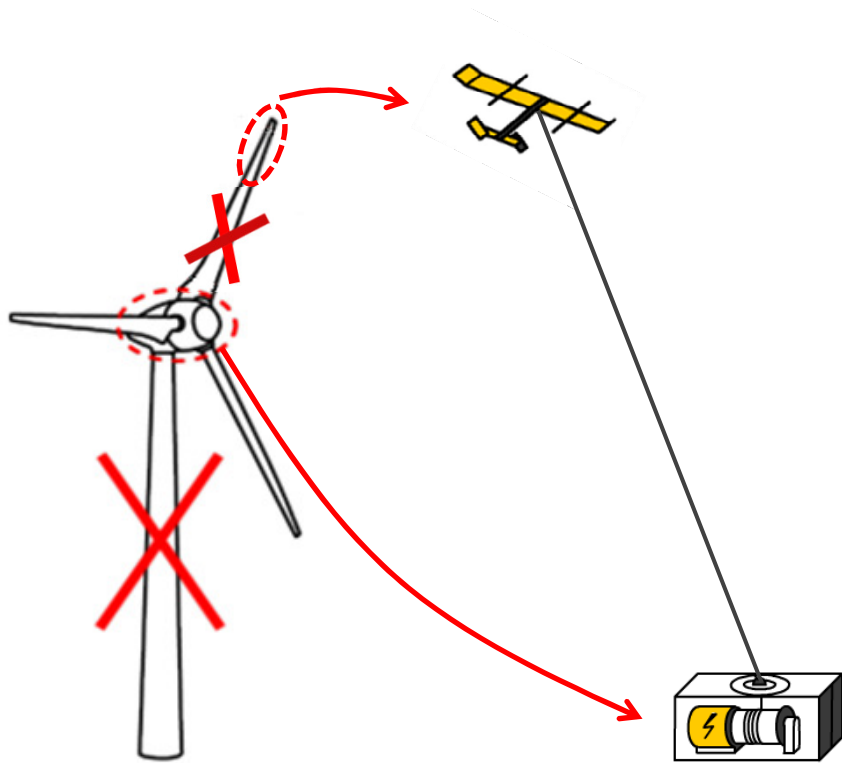
## How a kite power system works

Watch video at: [youtube.com/watch?v=UITfhF9dyEM](https://www.youtube.com/watch?v=UITfhF9dyEM)

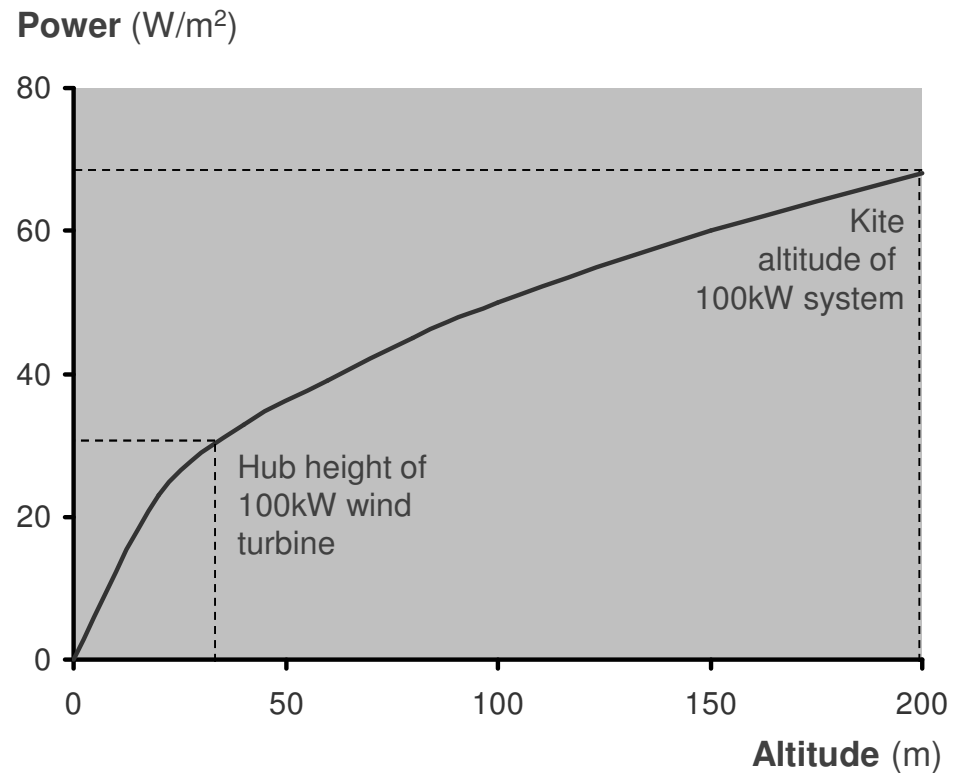


# Kite power system provides energy at 50% lower cost than wind turbine

## Lower investment costs

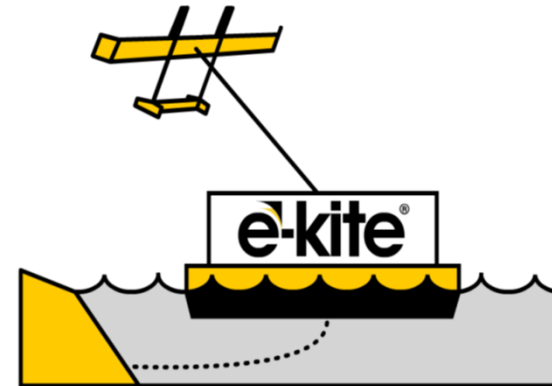


## Higher electricity yields



**Mobile system:**

- Allows for installation at temporary sites or in remote locations
- Enables new business models (e.g., rental, temporary PPAs)

**Offshore potential:**

- Less not-in-my-backyard issues
- No need for costly offshore foundation
- Allows for deep sea installations

**Alfred van den Brink: Technical Director**

- Experience: EWT, Johnson Controls, Eaton, SAGEM, AG Autogas
- Education: Automotive degree, MBA (Keele)

**Max ter Horst: Business Director**

- Experience: EWT, McKinsey, 3i, RWE
- Education: MSc Chemical Engineering (cum laude, best student), MBA (INSEAD)



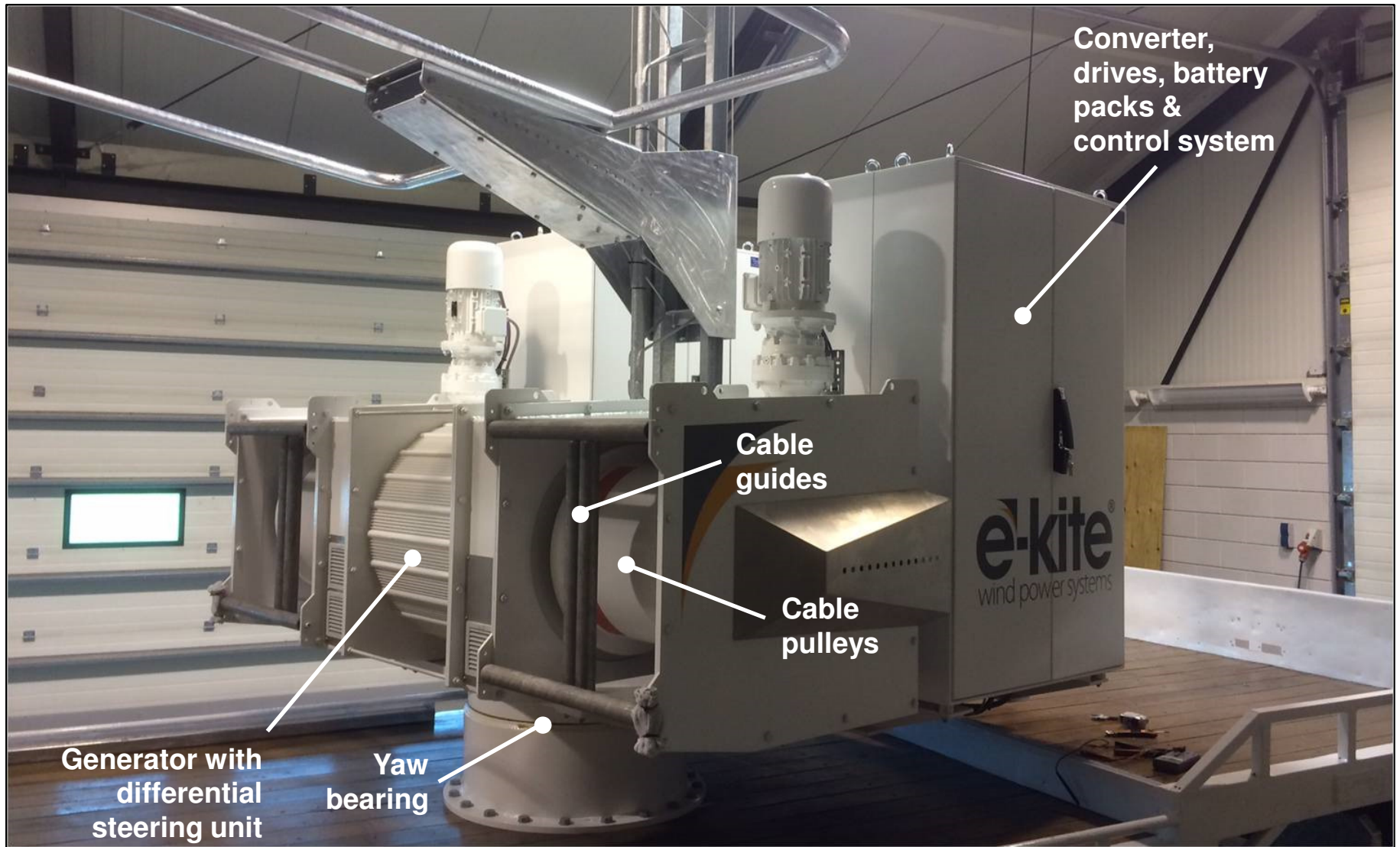
**Coert Smeenk: Lead Mechanical Engineer**

- Experience: EWT, USG Innoviv, Vormdrift
- Education: MSc Industrial Design

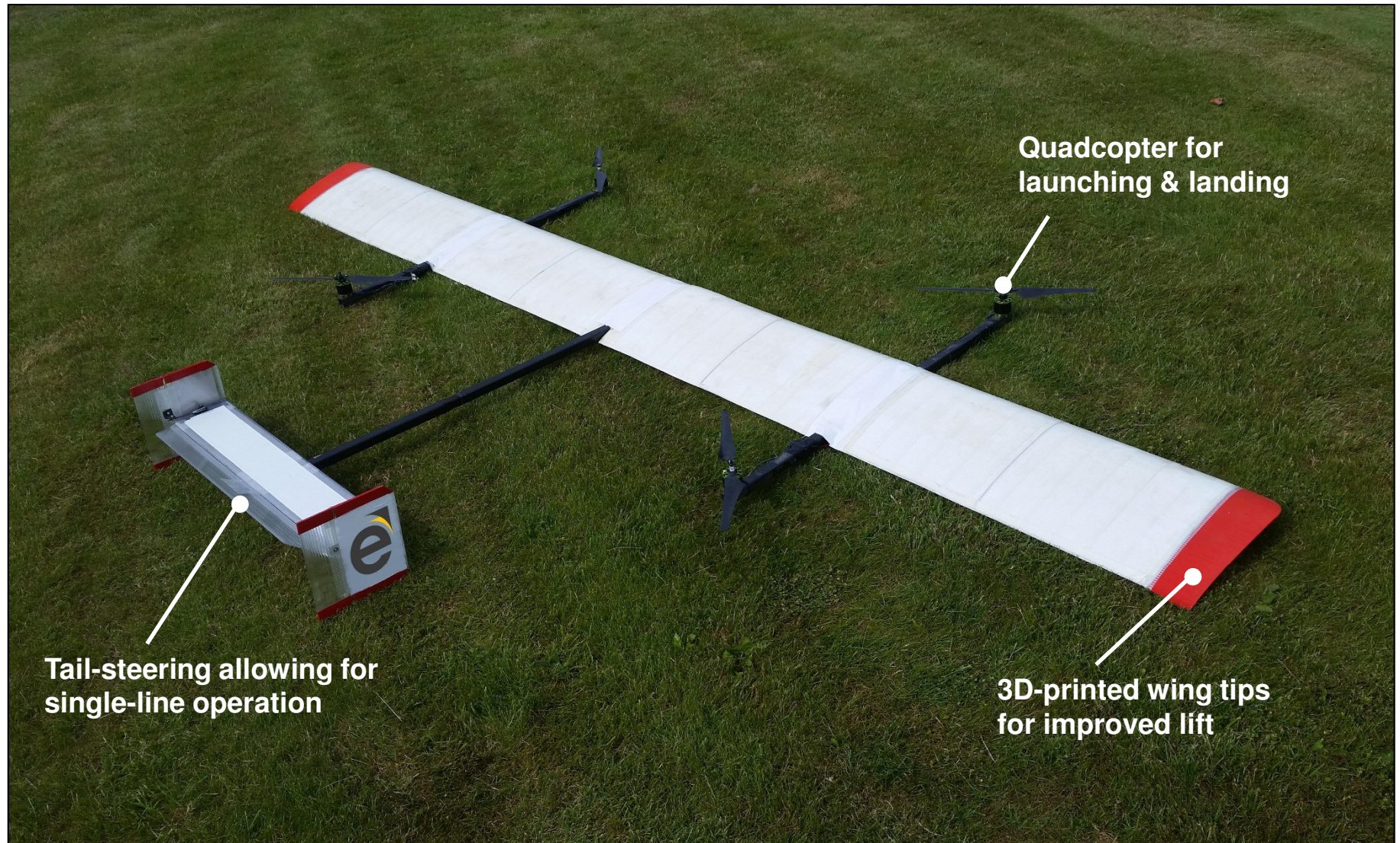
**Bert Regelink: Lead Software Engineer**

- Experience: EWT, SES New Skies
- Education: MSc Computer Engineering

# Prototype dual-line 50kW ground station



## Ultra-light wing with integrated launch & land system





Watch video at: [youtube.com/watch?v=QgFyzwFKdxY](https://www.youtube.com/watch?v=QgFyzwFKdxY)



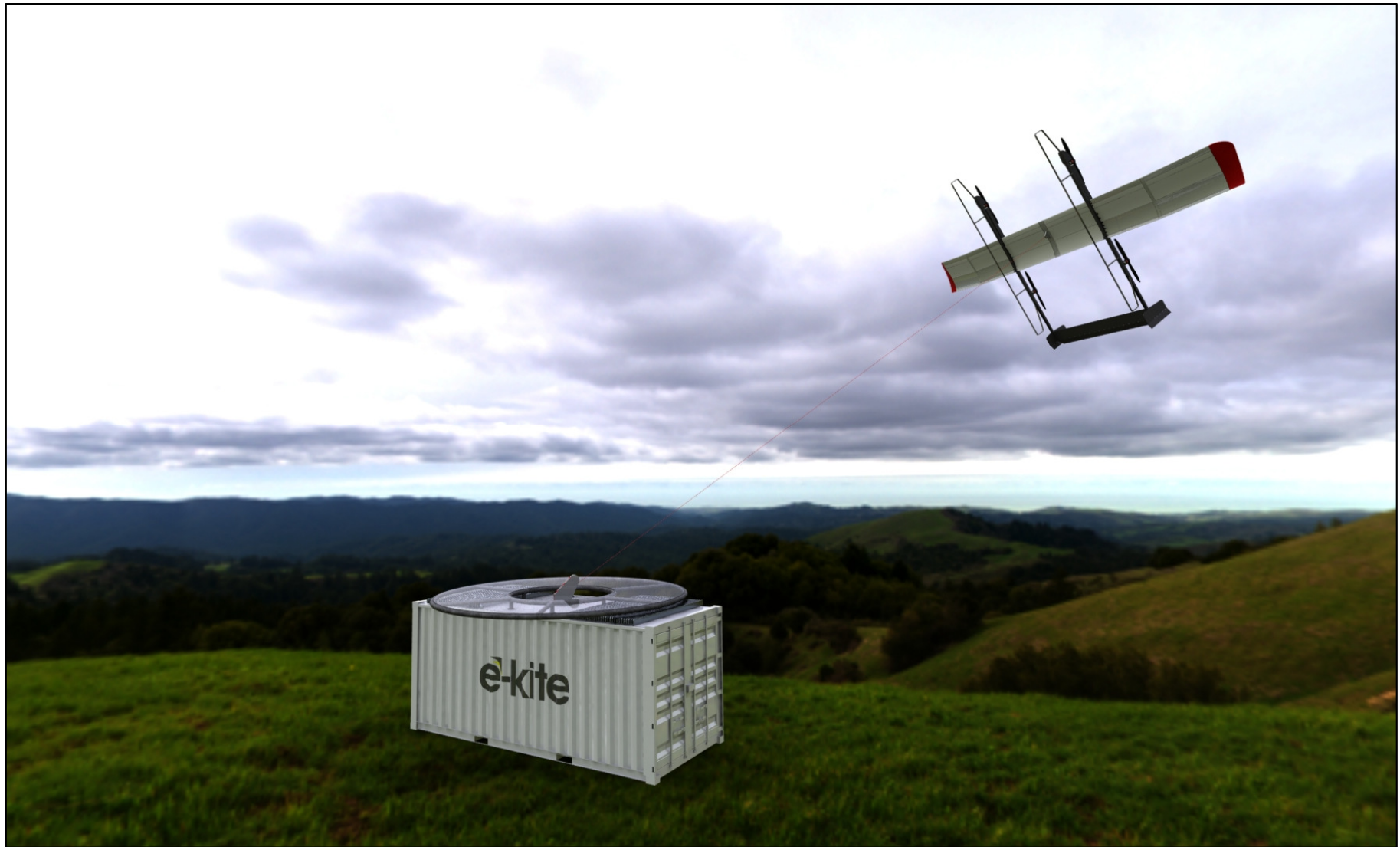
Watch video at: [youtube.com/watch?v=urVHJZ1HqQ](https://www.youtube.com/watch?v=urVHJZ1HqQ)

The screenshot displays the e-kite control system user interface. At the top, a navigation bar includes tabs for Overview, VFD's, Steering / Generator / Field, Generator 2 / Tracking, AFE / Bottom / Drive Motor, Settings, Tracking, Alarms, Log Viewer, Live Viewer, and IMU. A yellow banner with a video link is overlaid on the top right. The main interface is split into four quadrants:

- Top Left (3D View):** A 3D visualization of a kite's flight path within a dome-shaped structure. A red 'B' is visible in the bottom right corner of this panel.
- Top Right (Graphs):** Four real-time data plots. The top-left plot shows a blue sine wave oscillating between approximately -20 and 60. The top-right plot shows a purple wave oscillating between approximately 42 and 66. The bottom-left plot shows a green wave oscillating between approximately -100 and 100. The bottom-right plot shows a green wave oscillating between approximately 3 and 15.
- Bottom Left (File Panel):** Contains playback controls for a log file. The file path is 'C:\E-Kite\Workspace\Log Analysis\2015-02-23\2015-02-23 16:40 Autopilot'. It includes buttons for Open..., Play, Pause, and Stop, along with a progress bar showing 00:00 to 32:25. A timestamp '(2015-02-23 16:41:34.447) (20269932)' is displayed.
- Bottom Right (Graph Selection):** A panel for selecting data series for the graphs. It lists: fKiteAz, fKiteElev, fGammaReffiltered, and fGroundSpeed. Each has a dropdown menu and a 'Clear Graph' button. A 'Legends OFF' toggle is also present.



## Artist impression of commercial single-line 100kW system

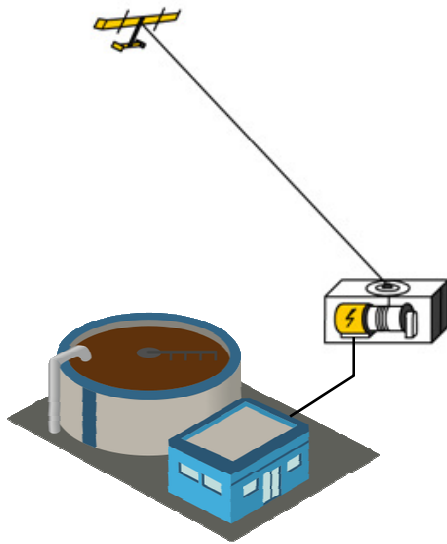


## E-Kite wants to do pilot projects with water authorities to demonstrate its 100kW kite power system

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### Self-consumption by waste water treatment plant

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- Waste water treatment plants often are located outside urban areas
- Stable baseload and flexible consumption maximizes offset with wind energy

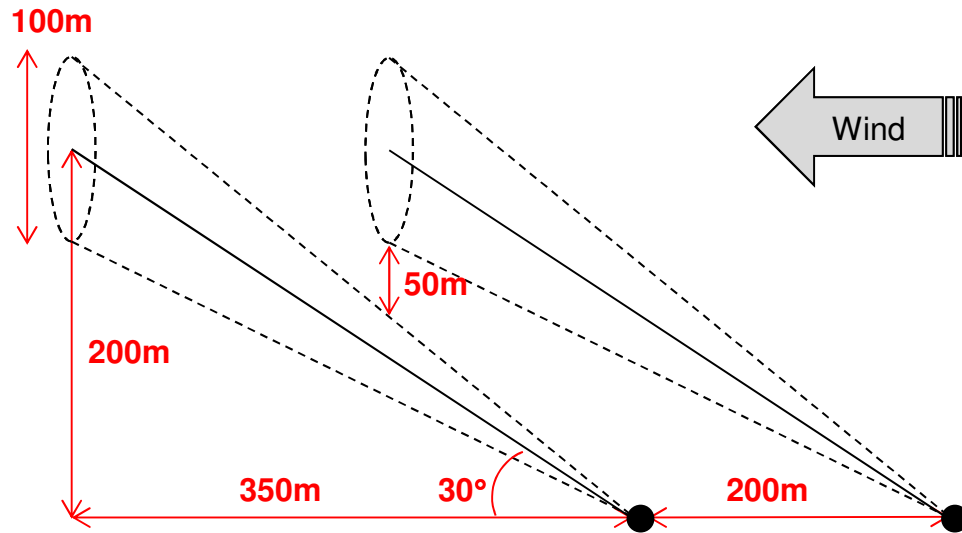
### Business case

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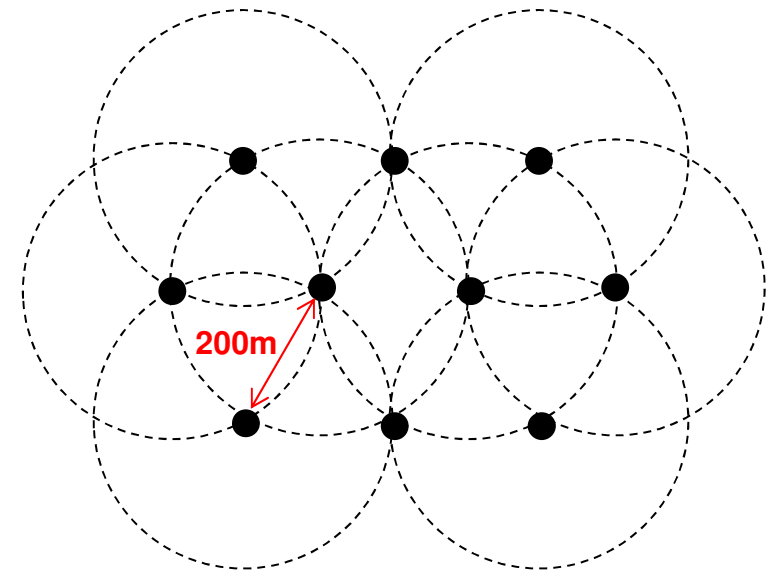


- Energy bill reduction by offsetting power consumption with wind energy production
- SDE+ subsidy over locally consumed and exported kWh's

## Minimum required spacing



## Optimal kite park set-up



- Kite power is the cheapest and greenest way to produce electricity
- Waste water treatment plants can particularly benefit from kite power as they have the required space and load profile
- In 2019, E-Kite will introduce its 100kW system
- E-Kite is looking for demonstration partners and launching customers, which can provide kite power sites and project finance

**E-Kite Holding BV**

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