# Aerodynamic Knowledge Key for Airborne Wind Energy System's Remotely Piloted Aircraft (AWES)

**Publieke samenvatting / Public summary**

Ampyx Power is to design an aircraft, that is part of its breakthrough 2 MW Airborne Wind Energy System (AWES), a second generation wind energy technology using a tethered aircraft. In partnership with NLR a project has started to optimize the design of an airplane that must combine a considerable size with excellent manoeuvrability, in order to generate energy as effectively as possible and at the lowest possible cost. The aircraft has to be sized to generate up to 2 MW, enough to supply around 2000 households with sustainable energy.

## Objective

This project will result in validated, high fidelity tools that NLR and Ampyx Power will use for further optimization within the design space during the further development of MW scale aircraft (aka the AP-4 project). Furthermore, this study will result in a design space for the aircraft design, which will allow the AP4 project to make proper trade-offs within the aircraft design. Finally, feasible aircraft concepts will result from the study; each concept will have different impact on other systems (winch, generator) in the AWES system and again, proper trade-offs can be made for the overall AWES system by comparing feasible aircraft configurations. The resulting concept may be a scaled up Ap-3, an AP-3 derived concept with the tail moved to front, a bi-plane or a state of the art flying wing based on recent developments at NASA.

**Projectinformatie / Project information**

**Projectnummer / Project number**
TEWZ118011
**Subsidiebedrag / Grant amount**
€ 619.624,00

**Algemene informatie / General information**

**Penvoerder / Secretariat**
Ampyx Power B.V.

**Links**

- Article: Flying a plane like a kite (2019)
- AKKA (presentation at the Matchmaking Day, 2019)
- Ampyx Power and NLR join forces to develop alternative wind energy solutions (press release, 2018)

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