



Interreg
North-West Europe
MegaAWE
European Regional Development Fund



MegaAWE Newsletter

October 2021



Comhairle Contae Mhaigh Eo
Mayo County Council

Airborne Wind Europe 



RWE

Content

- MegaAWE Headlines
- News from the Work Packages
- People in MegaAWE
- MegaAWE project background

Top News

Airborne Wind Europe issues paper on AWE Life-Cycle Assessment (LCA)

- The LCA shows a reduced Global Warming Potential of around 40% compared to Horizontal Axis Wind Turbines
- The study is based on a Master Thesis under supervision of TU Delft and Ampyx Power

Ampyx makes progress in component design and testing

- Tether lifetime test rig installed at Ampyx Power
- Launch and land platform design completed, key systems tested
- Composite wing material selected; production methods analysed
- Business plan extended with KPI incl. CO₂ footprint and commercial version of AP3

RWE finished tender evaluation and identified a preferred BOP contractor

- Contract negotiations are expected to be finalised in the next weeks
- The construction of the site is planned to start before end of 2021

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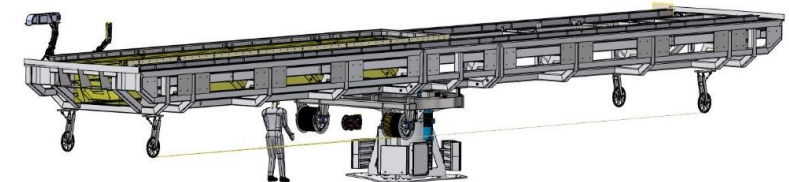
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T1: On Field Pilot Demonstration and T2: In Lab Demonstration

Lead: Ampyx Power

Update on activities:

- AP-3 additional system tests to investigate potential (undesired) structural resonance
- Landing system endurance tests completed
- Power generation apparatus integrated at Ampyx site and verified
- Catapult and rotating systems detailed design completed
- Tether handling (swivel/expeller) system verified in test
- Tether lifetime test rig at Ampyx site, running long duration tests
- First hydraulic drivetrain simulations performed



T3: Validated Execution Plan

Lead: Airborne Wind Europe

- **Next MegaAWE Platform meeting on 25-26 November**
- Mapping of site opportunities (regions), market opportunities (users) and business cases (supply chain) started
- New IEA Wind Task 48 on AWE to be kicked-off on 27-28 October 2021

AP-4 development kick-off preparation

- Reference customer in South Africa identified, requirements drafted
- Wing design with 20-30% higher performance. planforms now being analyzed in toolchain.
- Preliminary system sizing and mass estimation done



I1: Test Hub Development

Lead: RWE

Tender evaluation has concluded and a preferred BOP contractor has been identified

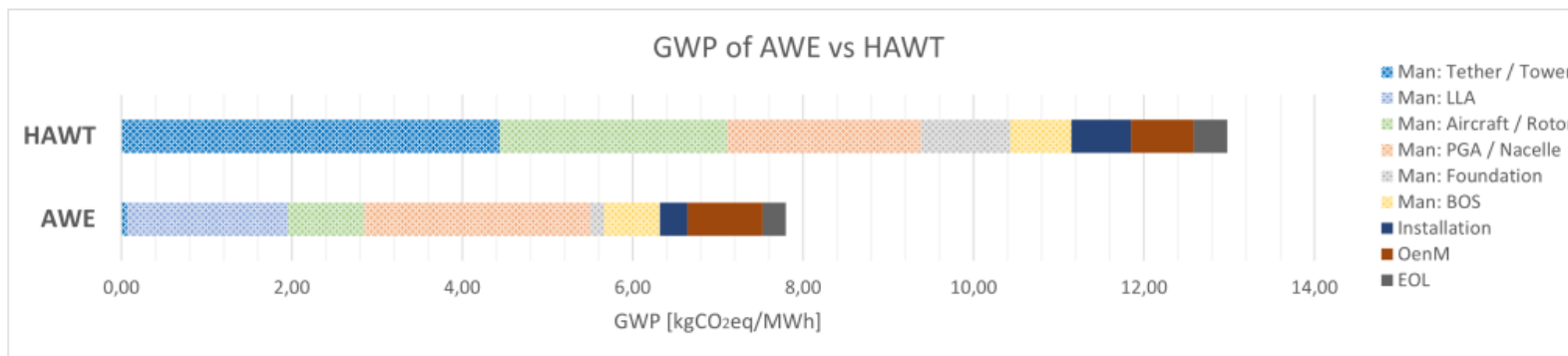
- Initial tender feedback identified construction costs which were over budget
- RWE and Ampyx successfully identified cost saving potentials and scope reductions and managed to reduce BOP costs significantly
- BOP contract is currently in preparation
- A local event on site when construction commences is currently in planning

LT: Long-term

Lead: Airborne Wind Europe

Life-Cycle Assessment

- Scope: 5 MW AWES vs. 5 MW Horizontal Axis Wind Turbine
- The AWE system requires 70% less material to produce the same amount of electricity.
- The Global Warming Potential (GWP) of the AWE system is 40% lower (7.80 vs. 13.0 kgCO_{2eq}/MWh)
- The paper provides recommendations to AWE companies and policy makers, e.g. using LCA results early on in design process



Business case development (Ampyx)

- Business plan extended with KPI incl. CO2 footprint and commercial version of AP3
- Ampyx Power business plan, LCoE model and technology evaluated by several external parties incl. TÜV Süd
- AP3 Commercial program preparation kicked off, with reference user partner in South Africa. Contact with other user partners.
- Offshore opportunity exploratory activity defined with Bluewise in Ireland (SEAI project)
- JDA with Sabca for series production under preparation

C: Communication

Lead: Mayo County Council

Mayo County Council hosted an information day on MegAWE and released video

- On 14th October Mayo County Council presented MegAWE in conjunction with European Week in Bangor Erris, County Mayo.
- Officials from Mayo County Council were in attendance to provide information about the project and the timescale for the development of the test site.
- While the response from the public was quiet, some industry professionals did stop by to hear about the project and view the recently released Partner Video on the MegaAWE Project.



<https://youtu.be/eGbOZ5CUtv4>



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Name: Anika Borm

Company: RWE Renewables

Job Title: Senior Technical Innovation
Partner for Novel Technologies

Tell us about yourself

I joined E.ON in 2011 as project engineer. Since then I followed my passion for renewables and acted as responsible project manager for several innovation projects in different areas.

Since 2019 I am responsible to lead RWE's Airborne Wind activities with greatest passion for this great technology.

What do I like about Airborne Wind Energy?

- It's an exciting and novel technology with the potential to contribute significantly to our goal towards 100% renewables

What would I like to achieve in MegaAWE?

- I am looking forward to see the Ampyx AP3 demonstrating its capabilities at the RWE test site in Ireland. Proving the concept to a wide audience will help AWE technology to succeed.
- Further, we would like to strengthen our network in the field and use everyone's expertise in MegaAWE to support the commercialization of AWE.

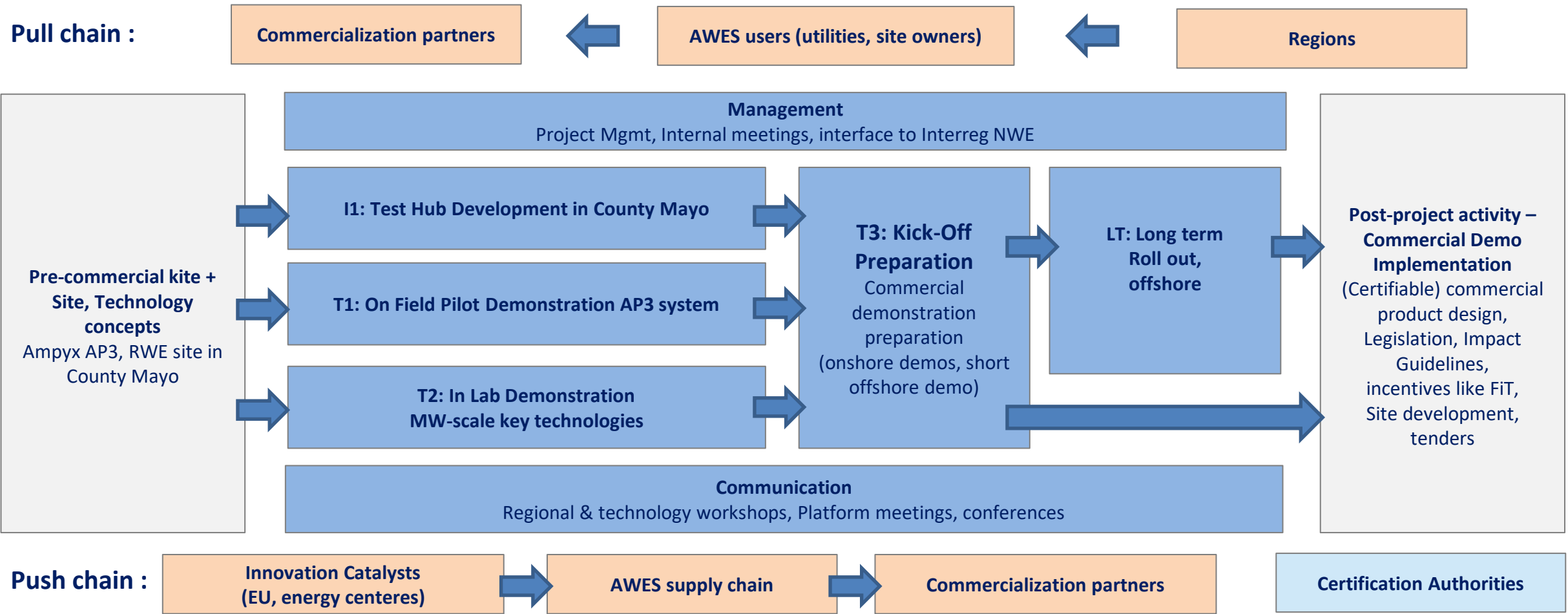
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Project structure and partners



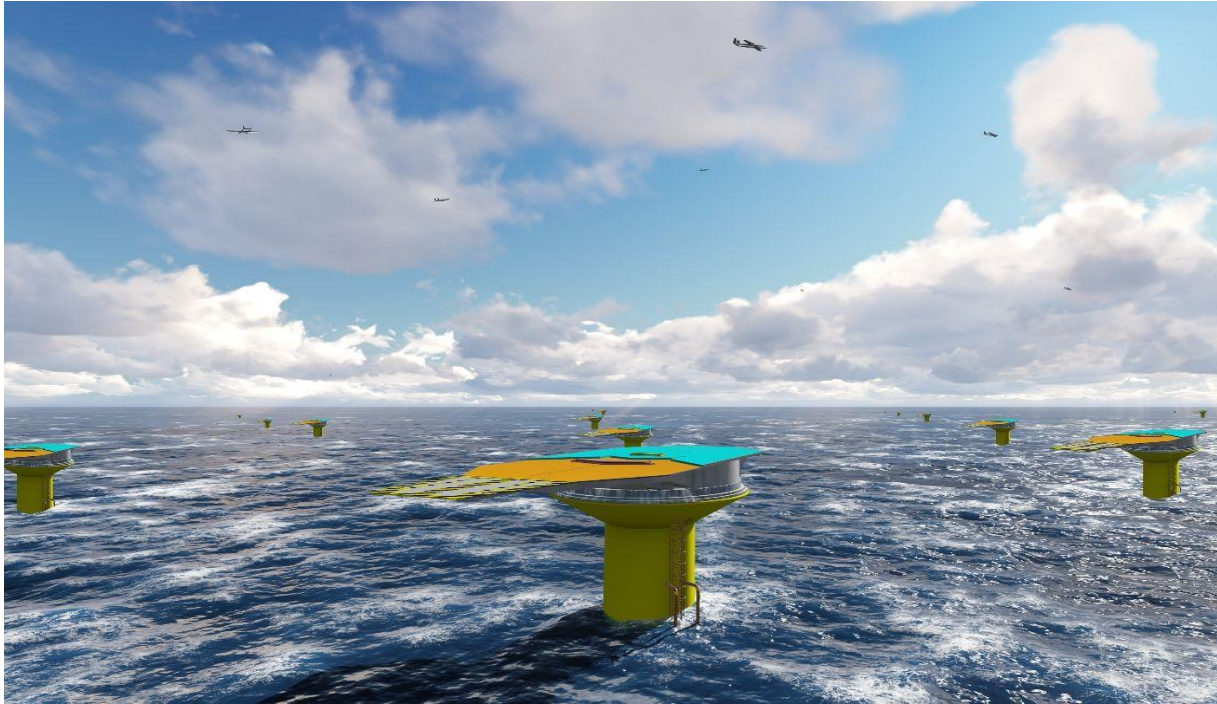
MegaAWE Work Packages and stakeholders



Partners



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