

TIGER

TIDAL STREAM
INDUSTRY
ENERGISER



EUROPEAN UNION

Interreg 
France (Channel
Manche) England
European Regional Development Fund

TIGER Phase 1A Lessons Learned – Interim Update

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**All Energy
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TIGER TIDAL STREAM
INDUSTRY
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TIGER
**Tidal Stream Technology and
Project Development (WP T1)**
Interim Lessons Learnt

V1
May 2022

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Introduction

For more details of the TIGER project, see: <https://interregtiger.com>

Details of all TIGER project partners: <https://interregtiger.com/about-tiger/project-partners/>

The interim report will be published this week:

<https://interregtiger.com/resources/>

Interim Lessons from TIGER WP T1:

- Assist the whole industry
- Not a critique of partners!
- Photographs courtesy of partners
- On behalf of OREC (as TA)

TIGER: WP T1 – Key workstreams

- Consents / licences: Obtaining consents and licences for potential future projects, either for completely new sites or for sites where a previous consent / licence needs updating (e.g., to allow different technologies or project scale).
- Project Development: One or more of financing, design, fabrication, onshore testing and offshore installation / operation of tidal stream turbines.
- TIGER aims include the leveraging in of other funding for the actual installation of future arrays at TIGER project locations, which has been supported by the design work within TIGER.
- Industry learning and dissemination, including this lessons learnt report / presentation and two “Guidelines for development of tidal energy projects” – Accessible at: <https://interregtiger.com/resources/>

TIGER: WP T1 – Lessons

- Lessons split into 15 aspects.
- Not able to cover all aspects today.
- Report is only 10 pages – read it!
- Some experiences within TIGER form intellectual property that has commercial value to TIGER project partners and/or their suppliers.
- Some lessons discussed internally that are not included in this report.

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TIGER: WP T1 – Lessons - Collaboration

- Lead project partner should:
 - Outline project requirements at the application stage.
 - Promote collaboration and lead difficult discussions between other partners.
- Collaboration between partners, including between project developers or technology developers that are (to some extent) in competition, and between partners based in different countries(UK/FR), is possible.
- This can help reduce project timescales and costs, as well as promote a better general understanding of the sector with stakeholders and regulators.
- However, collaboration does not happen naturally and needs promotion by the project funder / lead partner.

TIGER: WP T1 – Lessons - Design

- Design processes should have an integrated mass / dimensions requirements / management approach from early concept design, which is linked to key logistical step changes in approach or cost (e.g., use of certain vessels).
- Inaccurate cost estimating at the concept design and FEED stages may lead to delays at the detailed design and procurement stages – this can be mitigated by more detailed engagement with others and/or third-party review and/or higher contingency budgets.



TIGER: WP T1 – Lessons - Management

- Site developers need to ensure they have a good understanding of the overall site development process and timings, either internally or from partners/subcontractors, particularly for seabed leasing and environmental consenting, site data requirements and collection, and grid connection. See TIGER 'Site Development' reports (T1.1.2 & T1.1.3) for further detailed information. These can be found at: <https://interregtiger.com/resources/>
- Project funders / lead partners can assist through undertaking due diligence assessments of projects early in the project lifecycle and providing follow-up project support / mentoring activities on project and technology development - which can be beneficial in bringing experience of multiple industry projects and highlighting blind spots and the importance of 'knowing what you don't know'...

TIGER: WP T1 – Lessons – Marine Operations

- Robust cost estimates are needed when considering project options/changes, as initial cost estimates often suffer from optimism bias. Marine operation costs in particular are often significantly underestimated.
- Relevant vessel availability, cost and cost variability all known to be key.
 - However, external events (in this case COVID-19 and Brexit) can change these factors even more than is generally expected.
 - Brexit affected the requirements for UK-flagged vessels to operate in the EU.
- Have a credible O&M plan with associated vessel costs, which supports the LCoE requirements of the project. DP vessels designed/modified specifically for tidal operations may be suited to smaller turbines.

TIGER: WP T1 – Lessons – Procurement / contracting

- Public funding bodies / lead project partners ability to guide project partners on public procurement requirements is invaluable.
- TIGER delivered a series of 6 themed supply chain webinars which looked into different areas of challenge for the TSE sector. Recordings can be found by filtering for “supply chain webinars” at: <https://interregtiger.com/resources/>



- Delivered together with technology developers, these webinars attracted over 500 individual participants and have since had a further 3,477 views online.
- This is clear evidence of significant interest from the supply chain.

TIGER: WP T1 – Lessons – Resources

- Project objectives and plans need to be well developed at the application stage to ensure robust budgeting. Opportunities needed to allow suitable project adjustments and identifying these as early as possible can help significantly.
- Raising further investment in tidal technology and projects remains challenging, not helped by the more recent uncertainties due to COVID-19 and Brexit. The lack of clarity around support mechanisms in UK/France has been a major barrier, which was partially resolved for the UK only in November 2021.
- The resources required need robustly estimating.
 - Even just the PM on grant-funded projects can be significant.
 - Project partners need to ensure sufficient resources / mitigations for cross-project delays if implementing multiple projects at similar times.

TIGER: WP T1 – Conclusions

- Undertaking publicly funded projects requires a lot of planning by all parties.
- Projects more successful if the project objectives and plans are more defined than is required in the application form (e.g., in work package execution plans).
- A project review at kick-off to re-baseline can help mitigate delays in approval.
- Rigid funding criteria makes supporting dynamic project plans difficult but early assessment of possible issues can allow good change management.
- All plans should be externally risk assessed / stress tested regularly.
- Influences outside a partner's control can have significant impact.
- Assume that things will go wrong / be delayed. 'Fast-track' options rarely work.

There will be a final lessons learnt report at the end of the project.

Thank you for listening

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Craft the future with experienced, authoritative, yet innovative and flexible support for your renewable energy / low carbon transition.

Significant expertise in strategy development, business development and project origination, contract negotiation, project and business management, policy development, techno-economics, competitive award structuring, legislation interpretation, as well as technical due diligence, engineering, analysis and advice.