



Open call for tender

28 July 2016

Terms of Reference

**Comparative Analysis of International
Offshore Wind Energy Development (REWind Offshore)**

**IEA Technology Collaboration Programme on
Renewable Energy Technology Deployment
(IEA RETD TCP)**

www.iea-retd.org

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Acronyms

ExCo	Executive Committee of the IEA RETD TCP
IB	Implementing Body
IEA	International Energy Agency
PSG	Project Steering Group
OA	Operating Agent
RES	Renewable Energy Sources
RET	Renewable Energy Technology
RET D	IEA Technology Collaboration Programme on Renewable Energy Technology Deployment
ToR	Terms of Reference

Introduction to IEA's Technology Collaboration Programme on Renewable Energy Technology Deployment (IEA RETD TCP)¹

The IEA RETD TCP was officially launched in September 2005 with five founding members. Current members of the IEA RETD TCP are Canada, Denmark, the European Commission, France, Germany, Ireland, Japan, Norway, and United Kingdom. The TCP's mandate is to address cross-cutting issues influencing the deployment of renewable energy and act as a vehicle to accelerate the market introduction and deployment of renewable energy technologies. More information on the IEA RETD TCP can be found on the organisation's homepage www.iea-retd.org.

IEA RETD TCP Vision

Significantly higher utilisation of renewable energy technologies will result from international cooperation encouraging more effective, efficient and rapid deployment.

IEA RETD TCP Mission

The IEA RETD TCP will act as a catalyst for an increased rate of renewable energy technologies deployment, by:

- proposing solutions and options to maximize (1) the share of renewable energy technologies in the global, regional, and national energy systems, and (2) the contribution renewables can make to climate change mitigation, security of energy supply and economic growth, and
- providing recommendations on how to overcome barriers and means for significant increased renewable energy deployment..

IEA RETD TCP objectives

The IEA RETD TCP objectives are to provide ways and means for an accelerated deployment and commercialization of renewable energy, by:

1. Empowering energy policy makers and energy market actors through the provision of information and tools:
 - to make transparent and demonstrate the impact of renewable energy action and inaction
 - to facilitate and show the best practice measures
 - to provide solutions for leveling the playing field between renewable energy and other energy technologies
 - to make transparent the market frameworks for renewable energy, including infrastructure and cross-border trade
2. Demonstrating the benefits of involving private and public stakeholders in the accelerated deployment of renewable energy technologies, by:
 - enhancing stakeholder dialogue
 - implementing effective communication and outreach activities.

¹ Previously referred to as the IEA Implementing Agreement for Renewable Energy Technology Deployment, the official name of the programme.

1 The Terms of Reference

The Terms of Reference (ToR) for this project specify the objectives of the solicited project and outline the project tasks envisioned by the IEA RETD TCP Executive Committee. Tenderers are asked to elaborate on how the objectives of the study are best achieved and to propose additional tasks or modifications of the envisioned tasks, if deemed necessary to improve project deliverables.

1.1 Background of the project

Over the last decade, offshore wind energy has developed from an initial planning stage that saw mostly prototype and near-shore installations of turbines developed for onshore deployment, with a primary focus on research and development, to deployment of commercial projects at scale as well as industrial production of specialized turbines and components in a number of markets. According to the 2015 IEA MTRMR, current global installed capacity will more than double by 2020 and reach 28.8 GW (out of which 25.3 GW within OECD countries). The focus has increasingly shifted towards technology cost reduction, while deployment expands to an increasing number of markets. Research and development of next-generation turbines, foundations, grid connection equipment and progress in maritime logistics as well as financing continue to be of crucial importance.

Based on experiences made, the last decade has seen an evolution of technology solutions as well as policy and regulatory environments. Various countries have set – and revised – offshore targets. In a number of markets, the policy framework has developed towards centralized tendering (or the „Danish model“). Grid connection and transmission policies vary significantly between markets and have proven to be potential bottlenecks. In all markets, interface and risk management issues are key for successful, cost-competitive offshore wind energy deployment. In addition, the experiences of several industries have proven as beneficial, such as a maritime industrial base, offshore oil and gas, or manufacturers and large-scale investment project developers. With increasing numbers of projects coming online, the focus with regard to value creation potentials shifts also towards operation and maintenance.

However, Offshore Wind is still a relatively new and innovative technology in most countries. The IEA RETD TCP therefore launches a project to address the lessons learned from the developments of offshore wind over the last decade in order to allow policy makers and stakeholders to improve the regulatory framework and business decisions in light of the future challenges and opportunities of the industry. The project seeks to improve understanding of effective and efficient policy frameworks to contribute to sound bases for further offshore wind energy deployment and continued cost reductions of the technology in different markets. The findings of the report could also help inform countries looking to develop offshore wind deployment.

1.2 Objectives of the project

1.2.1 Overall objective

The overall objective of the project is

to provide a comprehensive comparative analysis of the evolution of offshore wind energy policy frameworks (including effective support schemes and grid connection regimes) in front runner and new major markets, to identify regulatory best practices and to develop policy recommendations for future offshore wind energy development.

1.2.2 Specific objectives and research questions

The specific objectives are focused on three aspects:

Objective 1: In-depth analysis of the evolution of regulatory frameworks (support schemes and grid connection regimes) to understand the effectiveness, strengths and weaknesses of different systems for the development of offshore wind projects.

Research questions:

- What are the core markets and industries?
- Which regulatory frameworks have been used in the past and which ones are being used today?
- Which are the fields of regulation in the case of offshore wind and what interfaces can be described?
- Which trends can be observed?
- Which are the reasons for the evolution?
- Which further evolutions can be expected?
- Which regulatory frameworks would be most suitable (and under which conditions) in current and future markets?

Objective 2: Focussed analysis of interface and risk management regarding project development and technical, financial and administrative issues to better comprehend key success factors.

Research questions:

- Which project development models have been used in the last years (e.g. coordination of separate contractors for individual components vs. general contractor model) and which trends – if any – can be observed?
- Which models are most successful so far?
- Which kind of project risks (technical, financial and administrative, maybe also social and environmental) risks can be observed, and how are they shared between different stakeholders?
- How do project developers and policy makers deal with these risks?
- Which are best-practices to deal with these risks and how can policy makers support further developments?

Objective 3: Brief analysis of underlying industry structure to understand minimum requirements and key success factors:

- a. Planning & installation phase: structures of investors, project developers, key component manufacturers and suppliers, logistics providers, installation ports, etc.
- b. Operation & maintenance phase: structures of O & M providers, service ports, etc.
- c. Knowledge transfer from related industries such as offshore oil and gas, maritime industries

This analysis will focus on 3-4 key markets or market models which are to be selected and proposed by the IB.

Research questions:

- What kind of industries are active/successful in the field of offshore wind energy development?
- Are there any trends that can be observed regarding the industry structure?
- Which characteristics of the industry structure are pre-dominant?
- What is the critical size of companies to manage the risks involved in mostly large-scale investment volumes?
- What are the lessons that policy makers can draw from that, e.g. regarding the development of national industries or regulatory activities?

This approach and the unique focus on risk management and industry structure are supposed to contribute to findings from other studies.

1.3 Scope of work

1.3.1 Sector scope

The scope is on offshore wind technology with all related activities.

1.3.2 Geographical scope

The geographical scope covers IEA RETD TCP member and other countries with relevant offshore activities (Belgium, Denmark, France, Germany, Ireland, Japan, The Netherlands, Norway, UK) as well as other potential new major markets (China, India, Taiwan, USA). For best practice and examples, the country focus will be narrowed.

1.3.3 Target Audience

Stakeholders targeted are experts from offshore wind industry, energy utilities, transmission and distribution system operators, as well as relevant regulatory authorities and policy makers at national level.

1.3.4 Collaboration with other organisations

The project shall duly take into account topic-related activities and reports of other organisations, like the IEA Secretariat and the IEA Technology Collaboration Programmes (like the IEA Wind TCP), IRENA, research institutions, and other organisations.

1.3.5 References

Several reports have been published on this issue recently like

- IEA Medium Term Renewable Energy Market Report 2015, Chapter “Renewable Electricity: Global Technologies – Offshore Wind”
- BVG Associates (2014) “Future Renewable Energy Costs: Offshore Wind”
- Prognos Fichtner (2014) “Cost Reduction Potentials of Offshore Wind Power in Germany”
- Fraunhofer IWES (2014) “The Importance of Offshore Windenergy in the Energy Sector and for the German Energiewende”
- National Renewable Energy Laboratory (2014) “2014-2015 Offshore Wind Technologies Market Report” [USA]

- Navigant (2014) “Offshore Wind Market and Economic Analysis” [USA]
- Carbon Trust (2014) “Appraisal of the Offshore Wind Industry in Japan”
- Carbon Trust (2014) “Appraisal of the Offshore Wind Industry in China”
- 4 Power (2014) “Regional Policies for Offshore Wind: A Guidebook”
- 4 Power (2014) “EU and Regional Policies for Offshore Wind: Creating Synergies”
- European Wind Energy Association (2013) “Where’s the Money Coming from? – Financing Offshore Wind Farms”
- European Wind Energy Association (2013) “Deep Water – The Next Step for Offshore Wind Energy”
- Stiftung Umweltenergierecht (2013) “Effiziente Förderung der Offshore-Windenergie-Stromerzeugung”
- BVG Associates (2012) “Offshore Wind Cost Reduction Pathways: Technology Work Stream”
- Stiftung Offshore-Windenergie (2012) “Chancen und Herausforderungen für die Hafen- und Werftwirtschaft im Zuge der Offshore-Windenergie-Entwicklung”
- Reports of the Carbon Trust’s Offshore Wind Accelerator Programme at: <https://www.carbontrust.com/resources/>
- IEA-RETD (2011) “Accelerating the Deployment of Offshore Renewable Energy Technologies (ADORET)” <http://iea-retd.org/archives/publications/adoret>

1.4 Deliverables

The project deliverables include:

- a concise report (intermediate and final version);
- a two-page policy brief; and
- a power point presentation.

All deliverables should be written in a style and format that is suitable for policy makers, highlighting key messages and considerations, with more detailed background information in specific sections or annexes.

All deliverables may be presented at IEA RETD TCP and national events, and will be disseminated through the IEA RETD TCP networks. The IB may be asked to present the project at certain events, costs being covered by the IEA RETD TCP.

2 Project phases and tasks

The project will be performed in two main phases:

- A first phase in which the winning tenderer, known as Implementing Body (IB) will prepare an outline of the full report, as well as the reporting of Task 1 of the project.
- The second phase, in which the remaining tasks will be executed.

The first phase will be used as a ‘proficiency test’ for the IB similar to an extended Inception Phase. The Project Steering Group will evaluate the scope and quality of the material, the time spent on the first phase and decide on a continuation of the project in the second phase. In case of termination of the contract, the actual costs made during the first phase, with the assigned budget for the task(s) in this phase as a maximum, will be paid by the IEA RETD TCP.

2.1 Inception/first phase

The inception/first phase will start with the preparation of an outline for the whole report that will be discussed with the Project Steering Group.

Task 1: Initial research and outline

The inception/first phase will start with the preparation of an outline for the whole report that will be discussed with the Project Steering Group. The issues to be addressed are described under point 1.2.2 “Specific objectives and background questions” above.

It is suggested that the data will be gathered through stakeholder/expert consultations (i.e. interviews) and in-depth literature review. Specifically, in-depth analysis of selected (4-6) key offshore wind projects through interviews with key stakeholders in different markets would provide an added value (subject to data access). In addition, an expert workshop in Europe to include key stakeholders would be an asset.

It should also be investigated with the help of the PSG if and how involvement of Clean Energy Ministerial’s Solar and Wind Working Group at this stage would be feasible.

It is estimated that this phase will cover about 20% of the budget.

Deliverables:

- *A methodology to address the issues outlined above.*
- *An annotated outline of the full report.*
- *Proposed timelines of deliverables*
- *A list of experts to be consulted and a list of reliable, up-to-date information sources that will be used*
- *First list of potential events where the project can be presented (to ensure timely submission of abstracts)*

2.2 Second phase

Task 2: Research and analysis

In Task 2 the methodology developed in Task 1 will be executed with the necessary research, stakeholder interviews, analysis, etc.

The outcomes of this task shall also be consulted with the Clean Energy Ministerial’s Solar and Wind Working Group, i.e. government officials from participating countries, in order to gather their input take into consideration their information requirements for offshore wind energy policy development.

It is estimated that this phase will cover about 50% of the budget.

Deliverables:

- *A draft report based on literature review, interviews with stakeholders and own analysis*

Task 3: Synthesis, Conclusions and Recommendations

In this task the activities of the previous tasks will be synthesized to extract relevant conclusions, develop an integrated narrative and derive recommendations both for policy makers and energy

market actors. The draft report shall be consulted with the Clean Energy Ministerial's Solar and Wind Working Group.

It is estimated that this task will cover about 25% of the budget.

Deliverables:

- *Ready-to-publish report (ideally in the IEA RETD TCP template) with conclusions, recommendations for policy makers and market actors, and next steps.*
- *Power point presentation with 15-20 slides (plus potentially 10-15 back-up slides) according to the lay-out and structure of the IEA RETD TCP template.*
- *2 page policy paper.*

Task 4: Communication

The IB shall develop a communication plan that describes how the results of the project can be utilised to influence the target audience after project completion. This includes a concept, two-page policy paper and a PowerPoint presentation with the project's main approach, findings and recommendations including back-up slides. In addition, potential opportunities to present preliminary results, i.e. prior to the completion of the project, shall be proposed.

The study could be presented at industry events in Europe (Hamburg Wind, EWEA Conference, Global Offshore Wind, etc.) and Asia as well as at other international energy policy events.

It is estimated that this task will cover less than 5% of the budget.

Deliverables:

- *Communication and follow up plan for the project*
- *Excel-List of stakeholders that should receive the report (Organisation, name, title/department, email, country)*
- *Excel-List of potential events where the project can be presented (name, date, website, deadlines for abstracts)*

3 Reporting requirements

The project will be carried out in close co-operation with the Project Steering Group (PSG). Draft reports according to the expected tasks and deliverables defined above must be submitted by the IB to the Operating Agent (OA) for review and feedback by the PSG. The PSG consists of both IEA RETD TCP representatives and international energy experts and is supported by the Operating Agent of the IEA RETD TCP.

The IB must deliver all reports in English, including an inception report after the project contract being signed and within the timeframe indicated below. The share of different tasks in total project budget expressed as percentages in these terms of reference are indicative. The PSG Chairperson, at the proposal of the IB and the IEA RETD TCP's Operating Agent, can re-allocate the resources available from one task to another as deemed necessary.

Progress reports must be delivered to the IEA RETD TCP Operating Agent every three months after the completion of the inception/first phase until the project is completed. The progress reports are intended to provide the PSG and the IEA RETD TCP ExCo members with an update on the progress of the report, both in terms of costs and status of project milestones. The reports

shall clearly indicate the methodology used and the results of each task, as well as the resources used for the execution of work (budget vs. actual).

Milestones for the project

The following milestones are foreseen for the completion of the above mentioned tasks:

28 July 2016	Publication of ToR
9 September 2016	Deadline for submitting proposals
15 September 2016	Decision of the Project Steering Group to award the project
Week of 19 September 2016	Contract signed, start of project, kick-off meeting
13 October 2016	Draft deliverables of Task 1 and 4 (stakeholder list and events), 1 st Progress report
24 November 2016	Draft deliverables of Task 2, , 2 nd progress report
19 January 2017	Draft deliverables of Task 3, 3 rd progress report
9 February 2017	Final report, including task 4, final policy paper and power point, final progress report

4 Qualifications and budget

The tenderers qualifications are described under chapter 5 ‘Evaluation Criteria’.

The proposal shall include:

- A technical proposal, written in English, of no more than 15 pages, excluding annexes and CVs;
- Project team members CVs with a description of experience related to the research areas, including references (maximum two pages per person) and how these relate to the requirements in this Terms of Reference;
- A reference list with a description of 5 to 10 related projects (project name, client, narrative description, date, size, etc.);
- The project budget including time and task allocation for each team member in a document separate from the technical proposal. The budget proposal for the project must be in Euros. The offer should be exclusive of Value Added Tax (VAT) or similar taxes. The offer should contain a breakdown of persons-days over tasks and experts (with tariffs), and any non-personnel costs.

The expected input for the project is appreciated at **100 person-days**.

Any change to both the composition of the team, and the relative contribution of the team members during the execution of the project, requires approval by the PSG.

The technical proposal should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the proposal will be evaluated. Simply repeating the statement contained in the terms of reference is not sufficient. In order to facilitate the evaluation of proposals, the IEA RETD TCP requests that tenderers address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, tenderers may refer to different sections of their proposals by identifying the specific paragraph and page number where the subject topic has already been addressed.

A single company/firm or a consortium of companies is eligible for this study. Consortium bids must identify a Project Leader, who will be the contact for the Project Authority throughout the study and will be responsible for managing the Consortium and for submitting various deliverables of the study on behalf of the Consortium. Payments will be made to the company of the Project Lead, which will be responsible for allocating the payment between consortium members.

The tenderer can assume a one-day attendance and presentation at an IEA RETD TCP meeting or another event in Europe or North America. Travel costs are not part of the evaluation of the budget of the proposal, but rough estimates should be given.

5 Evaluation criteria

The project proposal will be evaluated on the following criteria:

1. **Approach/methodology/vision:** Thorough understanding of the importance and objectives of the project, approach and methodology to meet each element of the proposed tasks, recognition of possible problems and proposed solutions; includes innovative aspects, i.e. ideas, proposals and aspects that were either not mentioned in the ToR and that can increase the value of the deliverables.
2. **Project Management:** Consistent, feasible and coherent work plan: scheduling of deliverables and necessary sub-steps; quality control, contingency plan, organization of tasks and suitability of each team members assigned to each task; readability of project proposal and quality of English language;
3. **Experience:** Significant and recent knowledge and experience of the company/consortium and the proposed team members in the topical area of this tender and in providing advice and reporting on issues related to renewable and conventional energy, policies and programs including presentations to international audiences.

Significant means a minimum of 5 reports/projects; recent means in the last 5 years. Dates of completion are required.

Bidders shall include (a) only projects that were undertaken by the proposed team members and (b) a brief explanation briefly how that reference/project is relevant to the ToR, in terms of data, experience, similar conditions, transferable knowledge, deliverables, etc. The latter point may be shown in a table format.

Experience of PSG members with the bidder and/or proposed team members will be considered in the evaluation.

4. **Price:** The total price of the proposal, excluding any travel and subsistence costs. As a guiding principle, a proposal whose price is more than 25% below or above the average

price of all bids received may not be further considered. The range of points will be given according to five equal intervals over the range of eligible bids.

The contract will be awarded according to the selection criteria given above, on the basis of the most advantageous tender.

A maximum of 5 points can be awarded for each of the four selection criteria for a total of maximum 20 points per proposal. Only bids that have reached a total score of a minimum of 12 and a minimum score of 3 for each criterion will be taken into consideration for awarding the contract. The points are given according to the following scheme: 0 points: no information; 1 point: poor; 2 points: fair; 3 points: good; 4 points: very good; 5: excellent.

The assessment will be based on each tenderer's bid, possibly supplemented with a telephone interview by the Project Steering Group.

All the information will be assessed in the light of the criteria set out in these Terms of Reference.

6 General provisions

The Implementing Body (IB) is expected to interact closely with the Operating Agent (OA) and Project Steering Group (PSG) throughout the project. The OA/PSG will provide support with co-ordination of the project as well available material relevant to the completion of the project.

The standard procedures and contract for external Contractors to the IEA RETD TCP will be utilised for this project (see Annexes). Submission of a tender implies acceptance of all the terms and conditions set out in this invitation to tender, in the specification and in the draft contract (Annex V) and, where appropriate, waiver of the tenderer's own general or specific terms and conditions. It is binding on the tenderer to whom the contract is awarded for the duration of the contract. Only in order to comply with specific national laws and/or regulations, some modifications to the clauses in the terms and conditions of the draft contract may be negotiable. The tenderer should indicate this in the submitted proposal and include a suggestion for alternative wording. Please note that a tenderer will need to maintain this position during the drafting of a formal agreement. Varying from this position may be a reason for discontinuing negotiations and moving to another tenderer.

The proposed time schedule shall not be revised by the contractor without the approval of the PSG. The Implementing Body will take responsibility for its own schedule within the time frame proposed.

The Stichting Foundation Renewable Energy Technology Deployment (the RETD Foundation) acts as the legal entity that is responsible for the operation of the IEA Renewable Energy Technology Deployment Technology Collaboration Programme, in accordance with the Technology Collaboration Programme, the annual Programme of Work and Budget; and for the implementation of decisions of the Executive Committee of the IEA RETD TCP. The RETD Foundation will be the formal contracting party for the Implementing Body.

The bureau of the RETD Foundation is managed by Ecofys Netherlands B.V., under the responsibility of David de Jager, Operating Agent ([david.de.jager@iea-retd.org](mailto: david.de.jager@iea-retd.org), telephone +31 30 6623388).

The tender documents will be treated as confidential. Only staff of the Operating Agent and members of the Project Steering Group will have access to the documents.

Tenderers are advised to frequently monitor the IEA-RETD website in case of publication of 'frequently asked questions' or modifications to tender documents. They can also announce to the Operating Agent that they intend to submit a proposal, in which case they can be informed directly on any changes in information prior to the tender deadline.

7 Application process

The deadline for submission of proposals is:

Friday, 9 September 2016, at 18:00 (Central European Time).

Proposals must be submitted by e-mail to the following e-mail address:

info@iea-retd.org

with **REWind Offshore** in the subject line and to the attention of Kristian Petrick, on behalf of the Operating Agent of the IEA RETD TCP. A confirmation of receipt will be sent by e-mail within two working days after the deadline for submission. Please contact the Operating Agent (David de Jager) directly, if you have not received this confirmation within this term.

For any additional inquiry regarding the project or application process, please contact the Operating Agent staff at the e-mail address mentioned above (info@iea-retd.org).

Annexes

ANNEX I IEA TECHNOLOGY COLLABORATION PROGRAMME FOR RENEWABLE ENERGY TECHNOLOGY DEPLOYMENT

Available at www.iea-retd.org under About RETD - Documents or via the direct link:
<http://iea-retd.org/wp-content/uploads/2011/09/RETD-IA-Text.pdf>

ANNEX II ORDER OF BUSINESS IN THE IEA-RETD IMPLEMENTING PLAN 2010-2016 (UPDATE FEBRUARY 2014)

Available at www.iea-retd.org under About RETD - Documents or via the direct link:
<http://iea-retd.org/documents/2014/02/iea-retd-order-of-business-february-2014.pdf>

ANNEX III TEMPLATE FOR IEA-RETD INCEPTION AND PROGRESS REPORTS

Available at www.iea-retd.org under About RETD - Documents or via the direct link:
<http://iea-retd.org/wp-content/uploads/2011/09/RETD-project-monitoring-template-2010-01.pdf>

ANNEX IV TEMPLATE FOR IEA-RETD FINANCIAL STATEMENTS

Available at www.iea-retd.org under About RETD - Documents or via the direct link:
<http://iea-retd.org/wp-content/uploads/2012/03/RETD-project-financial-statement.xls>

ANNEX V STANDARD IEA-RETD CONTRACT

<http://iea-retd.org/wp-content/uploads/2012/03/RETD-contract-EXAMPLE.pdf>