

refuse rethink reduce
re-use repair refurbish



remanufacture
repurpose recycle
recover respect

**CIRCULAR WIND HUB:
IT'S ALL ABOUT RESPECT**

Policy Hub Offshore – The Next Step

Policy Hub Offshore International, June 30th 2021

Thank you for being a part of the second meeting of the Policy Hub Offshore International! In this recap document, you can find the topics discussed and the input provided. Your contributions will be forwarded to the other hubs within the Circular Wind Hub.

Please let us know if you have any additional comments, suggestions or questions!

Goal of the Policy Hub Offshore International

The main objective of the Policy Hub is to propose circular policies that could be implemented in Europe to enhance a circular wind industry while keeping a **level playing field, respect for sustainability** and a **European resilient industry**. The policies, that stakeholders will define together, should be **clear and unambiguous**. At the end of October, concrete recommendations for policy makers will be formulated. To achieve this objective, tight and constructive collaboration between parties of the industry is expected. Only in this manner widely supported results, across the industry and European-wide, will be reached. The findings of the other hubs, the Knowledge and Industrial Hub, will be closely intertwined with the Policy Hub. Together, this will create a pathway to a Circular Wind Industry by 2050, by focussing on short- and mid-term action points. The Policy Hub has been separated into two groups: 1) European (strong focus on offshore) and 2) Dutch onshore group. As we have indicated, within this group we are working on the European policies.

Meeting 2 The Next Step

The parties, present in the hub meeting were the following: SGRE, Jansen, Smulders, Eneco, Boskalis, Engie, Ørsted, Vestas, Shell, EDF and Vattenfall. First, a presentation on the output of the Knowledge Hub was presented, based on the input brought forward in the first Policy Hub meeting on the integration of R-strategies and material passport in the tender criteria of the wind industry. This was followed by an input session where we have shared out comments, ideas and questions. A fruitful discussion of which a recap was made.

Circularity: An economic system of closed loops in which raw materials, components and products lose as little value as possible, renewable energy sources are used and systems thinking is at the core (source: Het Groene Brein)

Carbon offsetting: The funding of projects that reduce greenhouse-gas emissions elsewhere by, for example, increasing energy efficiency, developing renewable energy, restoring forests, or sequestering carbon in soil.

Material passport: A document consisting of all the materials that are included in a product or construction. The core idea behind the concept is that a material passport will contribute to a more "circular economy", in which materials are being recovered, recycled and/or re-used in an open traded material market.

Life Cycle Assessment (LCA): A methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, process, or service. It involves a thorough inventory of the energy and materials that are required across the industry value chain of the product, process or service, and calculates the corresponding emissions to the environment.

Environmental Product Declaration (EPD): An independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products in a credible way. (Source: The International EPD System)

R-ladder: The degree of circularity is often related to the so-called R-ladder. The higher a strategy is on this list (ladder) of circularity strategies, the more circular it is. The list, in hierarchical order, is: refuse > rethink > reduce > reuse > repair > refurbish > remanufacture > repurpose > recycle > recover. (Source: RVO)

Landfill ban: A restriction on the possibility to landfill waste. Landfilling means that waste is stored in or on land, i.e. not being treated according to strategies in the R-ladder.

SMART: The SMART methodology helps to define goals in a way that is *specific, measurable, attainable, relevant and time-bound*. This ensures that goals and objectives are clearly-defined and actionable.

Costs: Devex including Capex

Topics discussed

During the second hub meeting, we have discussed and shared comments, ideas and questions according to the following topics, based on input and answers from the Knowledge Hub:

Integrating R-strategies in tender criteria

- Integrate a waste hierarchy within the decommissioning plan (in your tender).
- Integrate Environmental Cost Indicators (ECI) for circularity within tenders or design.

Integrating material passports in tender criteria

- LCAs, EPDs and material passports conducted according to international standards (such as ISO, IEC) for comparison.
To Policy Hub: How can this be approached and realized?
- Data in material passports needs to contain the three pillars of sustainability (social, ecological and economic).
- LCA should be included in the tender. Concerns on intrinsic motivation to share primary data.
- A regulatory framework is needed to provide companies with a 'leg to stand on' regarding the demand of certain data and performance of their suppliers.
- Data of mined materials is often not known by manufacturers, because they use components and parts that are manufactured by suppliers and their sub-suppliers. Therefore, its realistic to start a material passport at component level. In time, this may be extended with material values. Is a material passport on component level feasible?

Themes and conclusions

ECI in the wind industry

ECI is fit for the Dutch scope but has a limited scope concerning a broader geographic scope and in regards to materials and technologies. It is preferred to apply it in other countries as well. Concerns exist with the use of different technologies for wind turbines, as ECI prefers some technologies more than others.

LCA in the wind industry

ECI is not broadly understood, instead reaching a basic framework for LCA will be more feasible. The crux is the integration into tenders and evaluation criteria. Concerns exist with accuracy and how it informs decision making. We need a governmental push. Integrating the LCA is possible before the stage where the product is on the market or parallel to the development of the product with the possibility to change the LCA during development.

Common framework and SDGs

- Maintain a level-playing-field and support from the EU governmental level to dictate criteria on sustainability and circularity as well as transparency in the evaluation to assess emissions and materials.
- Move the industry by setting a target and include sustainability requirements in tender criteria.
- Use of a general scorecard, a similar system such as the SDGs which is recognized by a broad audience will be helpful (ranking according to recycling percentages of blades).
- Social and human rights should be included in tender criteria.
- Having a harmonized system (EU level) is a challenge.
- Link the material passport to the LCA's.

LCA integration into waste hierarchy in the decommissioning plan

Integrating LCA into waste hierarchy in the decommissioning plan is a challenge, to canalize and define where materials are going. The focus should be on the local infrastructure.

Many aspects need to be taken into account with the decommissioning. Also the uncertainty concerning future technologies and the value of materials. Another challenge identified, concerns boundaries of different r-strategies and categories between specific materials.

The possibility to update the tender during the contractor period could be inventoried in order to take into account developments of technologies.

Material passports

The feasibility of a material passport has to do with the current situation, looking forward to a future where introducing this will be easier with a level of understanding globally, to achieve goals with sustainability and circularity data.

Governmental push

A governmental push on EU level and having a level-playing field are important. Developments in the industry are hindered by tender criteria.

Actions and requests for next meeting

- Invite WindEurope to discuss their view on NOT setting the target on sustainability and including it in tender criteria.
- Presentation from the building industry on how they include LCA's
- Invite and link your national representatives for offshore wind tenders (like Ruud de Bruijne from RVO in the Netherlands) to the organisers (Circularwind@echt.community) so we can discuss the circular criteria topics with them
- Are there possibilities for Green Deal Financing?

Next meeting: September 1st 2021

Let us know what the objective should be for the next meeting as well as which question(s) should be addressed.

During the second meeting, we missed some of the participants. The strength of this group can be optimally utilized when all of you are joining the sessions. We expect the participants to be at these meetings, when you are not interested anymore, reach out to us, so we can improve the meetings or remove you from the group.

Discussion Minutes

Topic	Input participants
<i>ECI in the wind industry</i>	One of the contractors uses 100% green electricity. For tendering purposes based on ECI, Raw material purchasing is 70 percent of the impact. We order in Europe and compare CO2 to China or world databases. We are well below... If we buy the right resources, we are on the good way.
	The transportation to the offshore site was also included in the calculation. Much higher ECI value when calculated by Asian countries.
	We use the ECI in five offshore projects and saw that it worked the contractors (familiar with ECI). The ECI from the suppliers also got a discount on the prize. On average BoP 25 percent, not leading to additional costs on the larger picture. We will continue to use in NL but also want to use in other countries. Database used for the ECI is fit for the NL market and the shadow prizes but not well known in Europe.
	It differs 20-30 percent per tender. Big percentage, otherwise, it does not make big difference.
	The suppliers maybe unfamiliar with it? Could we do this for the wind industry? Does it fit for wind turbines? The Dutch context for this methods, careful to use it for broader geographical scope
	The different uses of materials could make this an issue. Hard to compete between different manufacturers.
	The database approach is not fitting for other materials. ECI and national database focused on construction projects. Limited scope with regard to materials and technologies as well as geographical scope. In additional we consider different approach per package between BoP compared to wind turbines. Wind turbines: three suppliers there is a different way to stimulate sustainability. Currently explored by one of the supplier
	First thoughts: wind turbines are made by different technologies. Possibility ECI prefer some technologies than others (coverage).
SDGs/ common framework	<p>Important to maintain a level-playing-field as an industry and have support by the government on EU level to dictate what needs to be met on sustainability and circularity. Keep a level-playing-field and set a target.</p> <p>Evaluation must be transparent and best method to assess emissions and materials but must be on a level-playing- field. Now move the industry by setting the target and including it in tender criteria. <u>It must be included despite unwillingness of WindEurope.</u></p> <p>Propose: use of SDGs as a scorecard. It is recognized by many. Helpful to have every citizen confronted with a similar system. You have different systems. Multiple systems and indicators that may be misleading. Must focus on the goals you mentioned. Focus: circularity in blades, (first step), decrease in landfill, but prevent recyclable blades. Setting clear targets, for example: demand local policy (one star when products are 10 percent recyclable and ten stars when 100 percent recyclable).</p>
	<p>All in for sustainable criteria in tenders and standardized methods. Doubt with the SDGs in this context. Formulated on geographic level/ county perspective.</p> <p>If we take it into tenders, our focus is circularity. We should also take the social and human rights aspects into account. Here you also have the SDGs, but gets more complicated. Several SDGs focus on aspects of human rights.</p> <p>Concerning tender criteria: not just circularity but also the human aspects should be represented.</p>

	I would agree. To include social issues. To lifecycle assessment: Challenge to have a harmonized system. Recycling percentages of blades. This is already being asked in France it could be a simpler first step. Look for conditions and need. It is a challenge also on the EU level. EU level: a harmonized approach that could be used?
<i>LCA application in other industry</i>	You can request it for the windfarms (as a service). Selections also taken into account. Is it request in tender? A request to implement this for a wind park has not been seen.
	From development perspective. We start to ask for LCA in tender criteria. We are early in the development.
	Right now it is really sort of fact finding, building a structure for tender criteria.
	My perspective: the other way around. Broader understanding of LCA, that meet international standards. I think this is easier in short term. ECI is not broad understood. We are closer to a basic framework for LCA. Build a model, based on LCA.
	One of the challenges we have, the crux is the integration into tenders, into the evaluation criteria. If we were to start LCA taking into consideration into tender criteria: how accurate and how does it inform decisions we could make?
<i>Integration of LCA in wind industry</i>	It is possible to build the LCA before the product in the markets so that it can get into tenders. What we do is we use the LCA in parallel to development of product. But during the development will change the LCA.
	On the project mentioned above, we managed by 95% of steel and paint with EPD. Paint supplier has drafted EPD on request. One of the developers uses ECI in onshore Balance of Plant in Netherlands.
	WindEurope is against to include sustainability requirements into tender criteria. How to convince them is key to reach a level playing field
<i>Material passport and relation to LCA</i>	Exploring passports in offshore wind tender, but challenge to integrate it in onshore as well. Resource passports basis of doing an LCA, its less than a LCA but gives insight in the materials of the product and where it comes from.
<i>LCA discussed in the short term</i>	Some kind of a document (if we want to implement this into tender criteria): this should be the criteria of LCA and material passport is linked to it and take lessons learnt.
<i>Thoughts on LCA integration into waste hierarchy within decommission plan</i>	Not possible but a hard task and focus on local infrastructure on that is practically the best option to recycle? Lack of framework. How is this standardized? To canalize and define where all materials are going, as well as local infrastructure and transport. this is an issue.
	Challenging but should be part of decommissioning plan. Challenge: decommissioning in 30, 40 years and lots of aspects should be taken into account. what process would be used? Still in pilot phase. Hard to put figures into it.
	Difficultly concerning what technologies, we will have and get as much value as possible out of materials, 5-10 or 25-30 years from now. Both infrastructures and technologies are undertaking huge developments.
	Hard to define boundaries of different R-strategies. Boundaries between categories of specific materials.
	The timing issue between commissioning and decommissioning. Idea: Integrate first decommissioning. Plan with the start of the tender and updated during contractor period. Taking into account, technology development. Certain limits in the contract for update according to developments.

	Aspects could be part of Rijkswaterstaat. After obtaining the permit, act on site and water decisions. Not in tender, but in site decisions. Also, it is possible it is also happening. To change the site decisions afterwards (retroactivity). The government will only do this in consultation informally and formally with the permit holder.
	We can apply the r-ladder 80% recycled steel, paint.... which is already in the resource passport. Possibility of putting in the tender: Only this type of materials (more sustainable).
	Almost all EU countries are linked in this.
	Rather than looking at the end-of-life solutions in the future, could one imagine focusing more on how farms are 'designed' for decommissioning - making it a bit more tangible?
	In addition, for tender requirements for new OWF we can also consider options to still have criteria or requirements for existing OWF to be decommissioned in the next 10 years.
<i>LCA calculations</i>	In DK we have a "LCA-build" tool developed by the authorities and technological universities that allows all industry players to carry out similar calculations.
	I am sure we have some experience in onshore/infrastructure on LCA criteria; I will double check internally as a follow up of this call
	I think that would be a good idea, yes. Perhaps in a sort of focused break-out session where we can invite colleagues with expertise in the exact details behind the calculations?
<i>Regulatory framework</i>	We rate our suppliers in regards to materials. Huge variation in suppliers. In data information and the handling of waste and circularity. Data acquirement easy with some of our suppliers. Much is linked to culture of companies.
	A regulatory framework needs to be scoped on the global scope.
<i>100% correct material passport</i>	Not impossible or undoable: It has to do with the current time. Towards future it becomes easier. Level of understanding on a global level concerning achieving goals with data and sustainability and circularity.
<i>How to achieve landfill ban before 2025?</i>	It is very much independent of the local infrastructure. At some places its more difficult. We have mapped everything out. Which options do we have with the waste? The next step: What to do with the waste to recycle the material? In Asia, able to recycle all materials. But more difficult to do this in other part of the world and also trying to figure out the impacts.
	On this topic in Asia: Are you get the most value out of the recycled materials. Not sure. Has to do with the waste hierarchy. Asia has legislation that forces to use water based paint. And there is the infrastructure.
<i>Governmental push</i>	Governmental push to shape the company. Having a level playing field. Assessed on tenders based on levelized costs, it will never be selected... Technically, we can build and develop fully recyclable wind turbines. We need to be challenged. We need a level playing field. We want it but are hindered by the tender criteria!
	Governmental push is always good. An external trigger.
	For the landfill ban, it can be achieved, more valued output of the process. Currently its lower in the waste hierarchy. Banning is better for the environment but a good solution for all materials in the turbine is not available yet.
	If you have a local push, we need at least an EU push, because for a single country it will be hard to do this due to (competitiveness). It could be costly. We demand NL, leading EU into it. It is a careful balance. It should not hinder us to achieve it. Using the policy and what we can do as an industry, step-by-step.

