



# T-Omega Wind

## Floating Offshore Wind

### The Next Renewable Energy Frontier

Featuring Brita Osmundsvaag Formato,  
CEO of T-Omega Wind

**Brita Osmundsvaag Formato, CEO of T-Omega Wind, talks with moderator Karolin Schaps from Climate Transformed about how offshore wind can be the next renewable energy frontier.**



**About T-Omega Wind**

Based in Boston, Massachusetts, TOW was founded in 2018 by two friends, Andy Meyers and Jim Papadopoulos, as they had a mutual interest in offshore wind.

TOW is radically redesigning offshore wind turbines. Most offshore wind turbines adopt land-based structures. TOW takes advantage of being on the water rather than fighting it.

Recognizing that weight drives cost and manufacturability, they designed a floating platform that is significantly lighter than standard designs.

Their mission is to create and deploy a solution that will harness the power of offshore wind in a more affordable and accessible way.

Today, only less than 0.5 percent of offshore wind generation is floating. So, this technology is in its infancy.

**About Brita Osmundsvaag Formato**

Brita is an executive with over 25 years of experience in the energy sector. She has held various executive roles at Duke Energy Corporation and Exxon Mobil and served on the board of Hurtigbåt, a high-speed passenger ferry company in Norway. Born and raised in Oslo, Norway, Brita always had a passion for sailing and grew up with sailing as a sport. So, growing up, she was familiar with oceans, the power of the wind, and the opportunity of harvesting the wind.



**Takeaways**

- T-Omega Wind (TOW) is radically designing floating offshore wind turbines. Most offshore wind turbines adopt land-based structures. TOW takes advantage of being on the water rather than fighting it.
- TOW's mission is to create and deploy a solution that will harness the power of offshore wind in a more affordable and accessible way.
- TOW has done successful tank testing validation of their solution at Strathclyde University in Glasgow, Scotland, where they tested a 1:60 scale prototype.
- TOW is looking forward to bringing these technologies into the sea.

## **Perfect Time for TOW's Offshore Wind Solution**

We are experiencing the perfect storm, with climate change being recognized around the world. Energy security is the most important issue most nations face today, which has led to government mandates and the support for renewables to replace fossil fuels.

However, offshore wind technologies have a huge infrastructure supply chain and cost challenges. Due to economics and the need for specialized infrastructure, the existing offshore wind technologies are deployed in a few areas in shallow waters.

The areas where this technology is deployed have specialized infrastructure available, and governments can provide subsidies for deployment.

Offshore wind resources are vast around the globe. Two hundred miles off the coast, there is a steady speed of over 10 meters per second of wind.

Electricity consumption is high in heavily populated areas, and offshore wind resources are located near demand. However, the current technologies are not viable in most of these areas.

For harvesting two-thirds of the offshore wind resources, we have to use floating technologies, and none of those have been deployed yet in the United States.

So, there are great opportunities for floating offshore wind for the US as the average annual generation of offshore winds is twenty-four hours a day throughout the year.

The current solutions are not viable because these wind technologies are based on land-style turbines that do not tolerate wave motions, leading them to have wave-resisting support structures that are heavy and inefficient.

Most of the weights of the existing floating solutions are subsurface and very deep, requiring deep ports and specialized equipment for deployment. However, our solution has a very shallow draft and a much lighter structure.

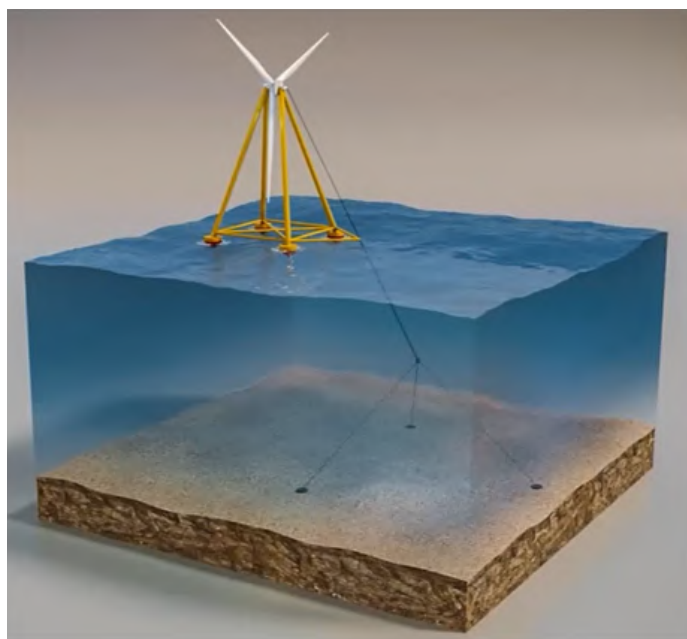
## **TOW's Solution to These Challenges**

TOW has redesigned the ultra-floating wind turbine. The generator and the blades are mounted and held on both sides like the bicycle fork holds the front wheel. This enables them to tolerate wave motions. Their turbine has a lighter leg structure with a much shallower draft, and it moves with the power of the wind and the current, inducing less stress on the anchoring system.

The deployment of their wind turbine is easy as they can deploy it using existing boatyards and local labor for fabrication and assembling.

It is easy to maintain and repair these turbines as a turbine needing maintenance can be swapped out with a fully functioning one.

It takes an hour to swap them out, so the downtime for these turbines is short.





### TOW's Plan to Scale

TOW has a scale development plan for their solution. They have been working on validating the design and now doing computer simulations with the National Renewable Energy laboratories. They would also like to receive grants from the National Science Foundation in the US.

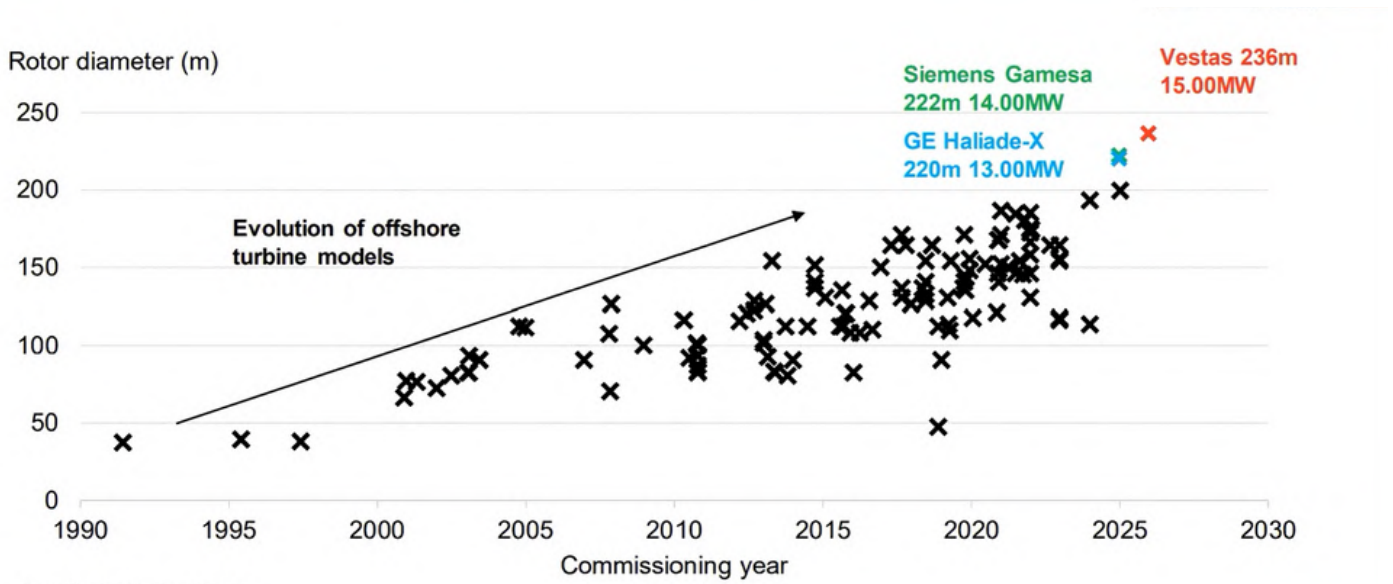
They are also working on building a small scale to be validated at sea and plan to deploy a pilot in the fourth quarter of 2023 into the third quarter of 2025. That would be their large-scale, fully functioning beta prototype.

They plan to work on developing the test markets as well.

Their goal is to ultimately reach 10 megawatts or smaller, as they don't see it going bigger than the 10 megawatts due to their design.



### To reach economies of scale, solutions are increasingly larger



Source: Bloomberg New Energy Finance



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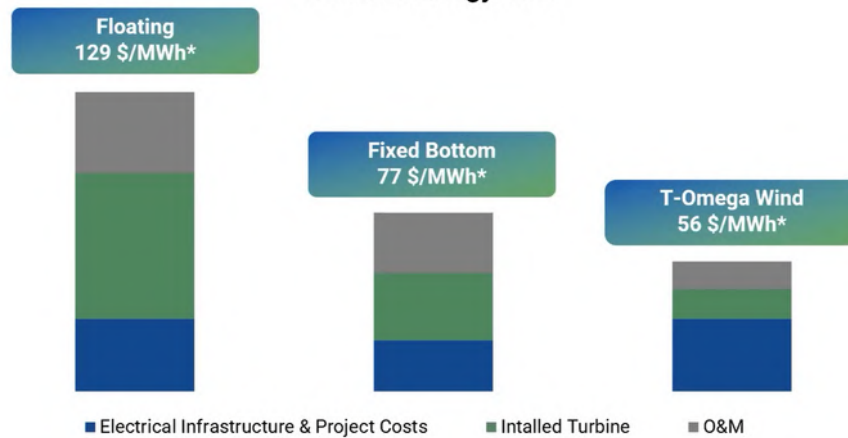


"There are tremendous challenges to overcome, and we have a unique global answer to become the dominant technology in floating offshore wind... and the opportunity for T-Omega Wind to democratize offshore wind is enormous." – Brita Osmundsvaag Formato

### T-Omega Wind (TOW) offers the lowest offshore wind Levelized Cost



#### Lifetime Energy Cost

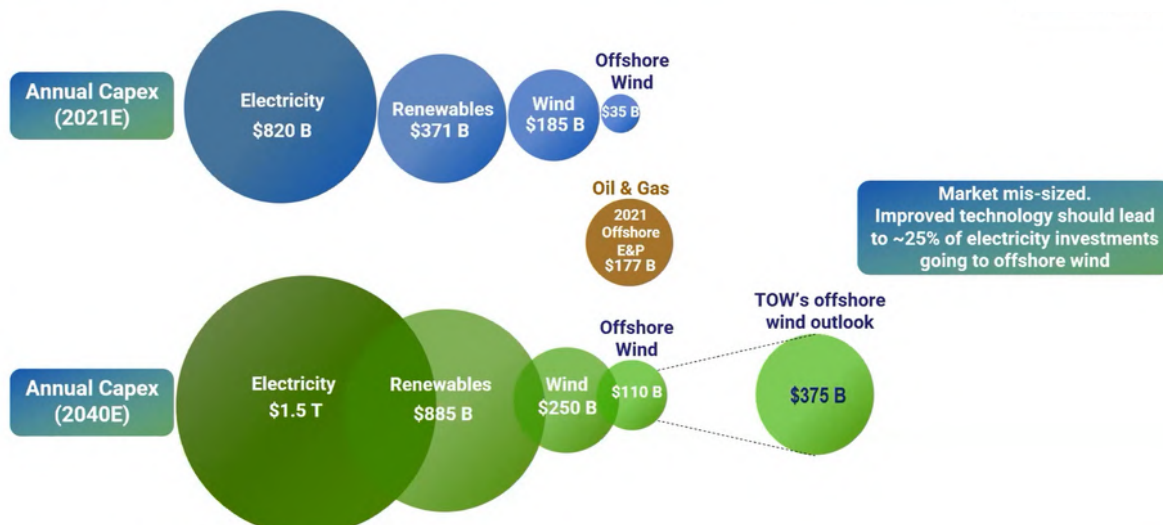


(Levelized cost of energy (LCOE) data from NREL 2020 Cost of Wind Energy Review, Published December 2021)  
 \*Note: Numbers do not include any tax credits or subsidies \*\*Lautec is validating cost assumptions



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### IEA projects significant capital investments in power generation, but offshore wind should be larger



Source: Adapted from IEA World Energy Investment 2021



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# Questions & Answers

## **Are you developing the turbines in-house?**

We are working in partnerships with large turbine companies for turbine development. We will be using the existing technology with some design modifications for it to be able to tolerate the motions.

## **Why are your cost structures so much lower?**

As our structure is so much lighter, we require fewer materials; hence, the cost of our turbines is lower. With the prices of commodities such as steel going up, the price of turbines also increases, but the difference between us and the others lies in cost savings. Of course, we have the same transmission cables. That's the same cost for us as everyone else.

## **Growth plans and how do you see the transmission infrastructure developing?**

We are already talking with potential customers, but we need to get our turbine in the water and do the testing and validation in the ocean. We will take orders as our customer base can be everywhere worldwide with good offshore wind resources. We have spoken with some island nations interested because they have great wind but don't have the required ports.

We are focused on producing the power necessary to produce green hydrogen. Once we are in the sea, we can also produce green hydrogen there. We are focused on ensuring we validate and produce electricity first. Producing green hydrogen along with electricity would be a great combination.

## **Cost inflation**

There have been problems in the industry due to cost increases. We have spoken with several companies working in Europe regarding technology development. They consider cost increase a challenge. That makes us excited about our solution as we are using much less material and competitive onshore resources, thus providing an economical solution to meet standard requirements for power production.

## **Why isn't everyone using your technology if it is cost-competitive?**

It is new technology. We believe our technology will be dominant once we get this into production. Right now, the offshore wind industry is in its infancy. In our view, our solution will be available globally and is efficient and cost-effective.

## **Capital raising**

We are working on our fundraising and will be happy to speak to interested investors. We have done most of our validation and are excited to bring on investors who can be partners with us. In our first raise, we're looking to raise around 10 million dollars which will help us get the full-size prototype into the water before commercializing it.

Our partners can be across the spectrum, so we are interested in working with all sorts of partners, provided they are interested in our industry and willing to be great partners in developing our solution.



# Questions & Answers

**The Inflation Reduction Act of 2022 (IRA) has attracted much global interest in the green energy market, especially offshore wind and floating wind. What are your expectations from that? Have you seen more investor interest since that has come forth?**

We have seen interest from Venture Capital. We got great support from the Biden Administration. The IRA has offered some great investment tax credits and incentives. Research and development investments are coming out of it for offshore wind development, specifically for floating offshore wind.

The announcement was for 30 gigawatts by 2030. Now, 15 gigawatts of floating are added to be produced by 2035. All these incentives and rulings encourage investments in floating offshore wind and fixed bottoms in the United States.

**Will there be enough electricity production through offshore wind technology for everybody?**

Our technology is a good solution, and we can use local supply chains. To build turbines, industries need to make blades, and there are also some challenges associated with the mooring system and the anchoring system. So, there are some cost pressures, pure supply chain issues, and production issues in producing the right type of mooring systems. However, we are not seeing these issues with our technology at this time.

**Where would you advise investing in the offshore wind supply value chain apart from your own company?**

It is a highly complex and big supply and value chain. I would say investments can be made in the maintenance space, in the boatyards, and all of that those areas. I believe that would be beneficial economically. The manufacturing space, including the production of the mooring systems, can also be a smart investment opportunity. Maintenance jobs would be a good area if somebody wants to invest personally.

**How is your relationship with your competitors?**

We have spoken with a few of our competitors, and it is great to learn from each other. All of us are seeing great challenges that we want to solve for harvesting offshore wind, especially floating, as the best technology is not determined yet. The industry players are trying their best to meet these targets.

**Do you have a view on how your technology might compete with existing technologies in terms of capacity factor?**

According to our studies so far, our technology competes fine on the capacity factors. So, there are no issues with the capacity factor of the production.

**Have you considered harnessing waves and wind to produce power?**

We have not considered this yet. We are currently focused on getting our turbine in the water and testing it.



**Thank you for reading. To access all interview from  
T-Omega Wind, Floating Offshore Wind:  
The Next Renewable Energy Frontier [click here.](#)**

**More about T-Omega Wind, [click here.](#)**



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