

The background of the entire page is a solid green color. Overlaid on this are various pieces of laboratory glassware. In the top left, a glass flask contains a green fern frond. In the top right, another flask contains a green leaf. In the middle left, a rack holds three empty test tubes. In the bottom left, a beaker contains green, feathery algae. In the bottom right, a flask contains a green leaf. A petri dish is visible in the bottom left foreground. The text 'TRANSFORMING INVASIVE ALGAE' is centered in the middle of the page in white, bold, sans-serif font. Below it, the word 'TRANSFORM' is written in a large, white, outlined, sans-serif font.

TRANSFORMING INVASIVE ALGAE

TRANSFORM

Finnish startup Origin by Ocean wants to transform invasive brown algae into a new raw material stream for cosmetics and other industries. With its patented green biorefinery process, the company plans to open the world's first commercial-scale sargassum-based facility by 2028. CEO and Chief Executive Activist Mari Granström talks about scaling algae chemistry, avoiding greenwashing, and why the world needs more radical disruption.

INTERVIEW

COSSMA: You claim that sargassum can replace fossil-based ingredients across cosmetics and beyond. How realistic is that goal given the early stage of your infrastructure?

Mari Granström: We're seeing a significant shift towards sustainable alternatives, and this change needs to begin somewhere. While sargassum won't directly replace all fossil-based ingredients, it offers a crucial platform for this transition. As a brown seaweed, sargassum is rich in various bio-based molecules, some of which are yet to be fully explored. These molecules have the potential to not only substitute synthetic ingredients but also introduce innovative alternatives for new functionalities and enhanced performance.

Many companies already use algae-derived ingredients. What specifically makes your biorefinery process disruptive or superior?

Seaweed-based businesses have a long history, with the first alginates extracted as early as the 1920s. Currently, many seaweed extracts on the market have lower purity regarding specific ingredients and often contain a variety of molecules that are not yet fully characterized. Additionally, many of these extracts and current alginates are primarily produced from wild-harvested kelp species, which is not a sustainable raw material source. At Origin by Ocean, our approach differs significantly. We focus on using invasive seaweeds, which we refer to as "ocean overgrowth," such as sargassum, as our feedstock. From this, we produce highly purified ingredients through an efficient, single-step process. Our production method is also free of toxic chemicals, as evidenced by our food-grade products and Cosmos certification.

Sargassum is a highly inconsistent raw material. How do you guarantee safety, functionality, and regulatory compliance at industrial scale?

Regarding our product concentrations in sargassum, we do not anticipate any inconsistency being an issue.



Mari Granström
CEO and Chief Executive Activist,
Espoo, Finland,
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On the contrary, our quality control processes have demonstrated that sargassum consistently aligns with the concentration of our ingredients. It's important to highlight that we refine sargassum into highly purified ingredients, and our process is capable of removing all unwanted byproducts. To illustrate this, consider the comparison with fossil-based ingredients: when you use these, you don't think of crude oil because it has been extensively refined. The same

principle applies to our process and the purification of sargassum.

By monetizing invasive algae, could you inadvertently create incentives to harvest it before it becomes an environmental problem – potentially harming marine ecosystems?

It already is an environmental problem, unfortunately.

You promote full utilization of the biomass, but can you truly valorize all fractions – or will there still be residual waste or low-value outputs?

Yes, we can valorize it completely. Our biomass residue, "OceanResidue", is sold as animal feed. While other biorefineries typically burn their biomass residue for energy, our "OceanResidue" contains vital amino acids and fatty acids, making it an excellent component for feed. It's important to note that our process is capable of removing arsenic and other heavy metals, which allows us to purify this fraction and sell it as animal feed.

The CABB partnership brings industrial expertise but also creates dependency. What's your plan to avoid bottlenecks or single-point failures during scaling?

We greatly appreciate this collaboration with CABB Oy, which represents a very standard business model within the chemical industry. In this partnership, CABB Oy will serve as our manufacturing partner, while Origin by Ocean retains ownership of both the manufacturing plant and the underlying technology.



Creating sustainable and innovative bio-based products for diverse industries, while tackling the problem of ocean overgrowth, such as sargassum seaweed.

With commercial production starting in 2028, are you concerned that brands seeking sustainable ingredients today may look elsewhere – or that competitors may outpace you?

We're not particularly concerned about competition when it comes to utilizing sargassum for highly purified ingredients. We believe competition is always beneficial, and there's ample room in the market for everyone. Each ingredient offers unique performance and functionality, allowing customers to select what best suits their final consumer good requirements.

Green claims are everywhere in beauty. How do you ensure your seaweed-based ingredients are more than just the next marketing story?

In our experience, customers prioritize the performance and functionality of ingredients above all else, with sustainability – or regenerativity, in our case – being a strong secondary consideration. Understanding the performance and function of your ingredients is crucial because it allows you to offer more than just a marketing story. We believe that combining high performance and strong regenerative properties creates a powerful and compelling offering.

You describe yourself as a 'Chief Executive Activist'. How do you balance activist thinking with the realities of scaling a venture-backed chemical business?

In my opinion, these concepts are not mutually exclusive when building a company like ours. Our investors and customers can trust us to stay true to our mission and vision. We are willing to speak up when others remain silent, make tough decisions, and have difficult discussions. Activism takes many forms, and I believe we need to appreciate this fact, as it is crucial for systematic change. We need to shift from extractive business practices to regenerative ones, focusing on turning problems into business opportunities. Humans have created numerous pollution sources on our planet that could be transformed into something valuable.

If demand doesn't materialize at scale, what's your fallback plan? Is there a viable business case without a rapid industry-wide shift?

We wouldn't be building a commercial production plant if we didn't have significant market interest. The main question for us is how to scale up production to meet the demand in terms of volume.