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Analyze Tech, Process, and Cost

Sarah Lamaison, *Dioxycle*

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Sarah Lamaison, co-founder and CEO of Dioxycle, urges tech founders to ask the hard questions about their technology and process. She gives examples from her company's journey to illustrate the importance of being open to taking a new path. Once a climate tech founder has found the right technology, she says, they shouldn't assume people will be willing to pay more for it just because it's sustainable.

Transcript

- So once you've done all this, 00:00:04,980 I think one of the traps you can face is you don't ask yourself the hard questions.. So now the problem is, you know, if you're a technical founder, a founder in particular, you have a technology you've been working on for five years, you really like it.. You think it's really great, and you know, you really want to push this technology.. And I think you have to make sure you don't blindly hang on to this technology and instead actually analyze it, compare it, benchmark it, and perhaps even change it if you need to change it.. And I'm saying that not lightly.. And you know, at the beginning we started with David working on CO2 to CO, so conversion of carbon dioxide to carbon monoxide, which is the precursor for jet fuel.. And so like we really pushed like the performance of the technology to top level.. We went like we really delivered on the different milestone we have set for ourselves.. And at the end of the day, we did the math, we did the techno-economics, and even then with the best, like, best performance possible, we realized, you know, perhaps it wasn't like so better than other options that people would actually take the scale up risk and pay for that scale up risk.. And so at that point in the time, which was very early on, we were like, "Okay, (chuckling) let's go back to the drawing board." And we looked at the different products we could make and we decided to go to ethylene, which is a much higher added value product, harder to make..

But we were like, if there's a play, it's there.. It's where it's hard, where no other technology can have a, I mean, can deliver on that.. And so I think that's really, really important.. And not only you have to like coldly look at your like own technology block, but you also have to coldly look at the full process and make sure you look at the full process.. When you think about our technology electrolysis.. So you're converting, you know, you're making a product, but it's like mixed with unreactive carbon emission.. And so, you know, there's always a question of, you know, you wanna separate this unreactive reactant from the product.. And so there's a balance, for example, to strive between the yield of your reaction and the separation cost at the end.. And so you want to really make sure you're analyzing your full process and not just focusing on optimizing one thing in the middle, so that at the end you're really optimizing for industrially relevant metrics.. And so I would say if you're a scientist, perhaps bringing a process engineer early on so that someone is really like telling you about the balance of plant, which is, you know, all the auxiliary systems that are around a central technology..

So now you've made all these things, you've bet on the right technology, it's working, but you know, you've made the

analysis of the process and you realize it's a bit, it's still a bit expensive.. And so one of the traps you can fall in right now is to think that people will actually pay more for a sustainable alternative.. And they will probably do if it's like for, you know, like a customer product that is very high-end, but like most of these products, they have tiny markets.. And so you're not gonna have a big carbon impact by addressing a tiny market.. And so like the mistake is when you're like, "Oh, I'm gonna make ethylene or e-fuel, and it's gonna cost like four times the price of fossil fuel and it's gonna be fine because people are gonna pay forever." The fact is, you know, perhaps the government is gonna subsidize for a while, but at some point the most energy-efficient and cost-efficient technology will have to win and you better be on the side of like the most efficient technology or have started doing something else at that point.. And I think this, we can kind of summarize by this sort of diagram where, you know, you have on one side the goodwill and there is goodwill in the world, that's great.. And you know, climate philanthropies are in this category and it's really important the work they're doing.. But you have, I mean I think it's really important, but that's my opinion, to see business as a separate category and not try and mix these two categories, and see really climate tech businesses in the business categories where you really have to have like economic performance in addition to your like sustainability performance...