

## S2 E3 – Clean energy supply chain

### Baringa's Energy Innovators Podcast

James:

Hello and welcome to Baringa's Energy Innovators podcast where we help you make sense of the energy transition's greatest challenges and opportunities. I'm James Constable and in this podcast series I speak with the leading industry experts to learn how they're putting people first and creating impact that lasts to fuel their energy transition.

Dharmesh:

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James:

Hi, welcome to the podcast everyone, and thanks for joining us. Today we're joined by Dharmesh Jedachi who has just joined us from the UK Department for Energy Security and net-zero. So Dharmesh, who we'll be hearing a lot from, was previously the lead commercial advisor to the Secretary of State, which is pretty impressive, and headed up the hydrogen allocation in [inaudible 00:01:10]. Today we're going to be talking about the Green Industry's Growth Accelerator, or GIGA, and green supply chains. This is, again, something that I'm not familiar with, so apologies in advance for lots of dumb questions, simple questions, but really, really interesting area and really interesting topic.

James:

So yeah, Dharmesh great to have you on.

Dharmesh:

Yeah, great to be on. Second week straight into it with I think something that will be very interesting for our viewers.

James:

Great. Awesome. Great. So let's get into it. So tell me about the GIGA allocation and what this is and why is this important?

Dharmesh:

Yeah, absolutely. And look, most government programmes, they have a technical, they have a serious name, whoever named this one absolutely nailed it with GIGA, probably as catchy as you can get. So a little bit of context here. The government has had a very active industrial strategy all across range of programmes. Offshore we have network, CCS hydrogen, but it keeps coming up against the same things. Supply chain constraints, costs are going up, long lead times. So government has rightly looked at this and gone, actually, may need to intervene here in the supply chain with some targeted focused capital investment on the areas which are most critical to the government's programmes.

Dharmesh:

And so, that's how GIGA was born. A \$1.1 billion capital fund. It was \$960 last year topped up by the treasury in the most recent fiscal event within another \$120 million, so just under \$1.1 billion distributed across those three areas, offshore wind networks, CCS hydrogen and a \$300 million programme called HALEU for nuclear fuel to bring that back here and recognising the challenges with the Russia-Ukraine conflict.

James:

Right. That's a lot of money. So who's this for? Who's going to be applying into it?

Dharmesh:

Yeah, good question. And some people say it's a lot of money, some people say it's not enough.

James:

Yeah.

Dharmesh:

These facilities will eventually cost hundreds of millions in CAPEX. Who is it for? It's for OEMs, leading manufacturers, innovators, those who can expand and deliver competitive, robust supply chain manufacturing capacity. So you've got a set of known players, for example, in turbines, in towers, those making electrolysers, capture equipment, those making the pipelines in CCS. Yeah, so those really contributing to the major components, the major supply chain elements that will be building out these programmes.

James:

And is that because the cost of building out that infrastructure at the moment isn't economically viable, so this is supporting that? And how much of that CAPEX, you're saying it's a hundred million for example, for facility, how much of that as a percentage is this going to cover? Is this actually quite small bear then?

Dharmesh:

Yeah, potentially. We've got to wait for the government's detail on when it launches. It's going to launch the networks and offshore wind strand of this imminently. But we'd be probably looking at CAPEX intensity levels, so subsidy intensity from government, ranging from the 10 to 20% range. So we're not talking about government taking on 50% of the project here, but a material enough contribution to offset where there are always market failures in this area.

Dharmesh:

But the key ones are, as we've seen if left to the market, supply chain investments can be riskier than other investments. These companies can find it difficult to raise finance, bank lending. There's often a mismatch between supply and demand. So you could build the facility, but waiting for demand to come might mean your factory is underutilised for a while, called the valley of death, where the facility is not at its max utilisation.

James:

It's not utilised. Yeah.

Dharmesh:

Yeah. And this offsets some of that and brings facilities ahead of schedule. What we tend to see is that manufacturing supply chains lag deployment and so you end up with these long lead times, constrained supply, costs rising as we've seen in offshore wind. We've seen it in networks, we've seen it in hydrogen CCS just in the last year or two. And so this is a way of expanding global manufacturing capacity and alleviate the pressures that we're seeing in those deployment programmes. It's not just us in the UK, across Europe, in the US, all of these countries are pursuing active deployment programmes in these technologies. And so the key bottleneck is going to be manufacturing capacity.

James:

That's really interesting. So it's obviously going to have an impact on costs on some of the levelized cost elements of these technologies. So we mentioned offshore wind and associated network infrastructure, CCUS and hydrogen, and then even nuclear reactive fuel. So obviously if UK is supporting the supply chain of that, that could have a beneficial impact on a much more macroeconomic level right across all this.

James:

That's really interesting. Potentially you could argue that also though that's creating opportunities for people outside of the UK, so we're subsidising that. So that's a potentially valid argument, as well, which is quite interesting. But I suppose the question in my mind around that is why now? So the timing is everything with this stuff. So do we have a view or is it worth discussing that? I think it'd be quite interesting to hear your views on that.

Dharmesh:

Yeah, why now is because the government, the UK, have committed to, obviously they're committed to net-zero, but they're committed to a set of interim plans, interim targets to get there called carbon budgets. They've legislated for these and in effect to pursue those, you are very dependent on the rollout of certain programmes, timely rollout to a certain cost schedule. And what we've seen in the last year is that particularly for offshore winds through the Contracts for Difference programme, more recently in CCUS, even for networks, I'm sure you've all seen the stat that we're going to have to build more networks infrastructure in the next few years that we've built in the last few decades.

Dharmesh:

So it's all coming to a crunch point now where the build out of all of these major programmes will be constrained, will be delayed, will fall short of targets unless the supply chain catches up. Now, that supply chain has to be competitive, has to be viable. These companies bidding in, securing some of these capital grants to build out, they have to compete internationally. This is not ongoing subsidy. This isn't addressing any OPEX gaps. This is to unlock an investment where market failures might mean it doesn't come to the fore in time for where those programmes are crying out for expanded supply chain capacity. And that's here and with our trading partners.

Dharmesh:

Now, any economics geek, any students of economics, they'll look back at Adam Smith and Ricardo. I was looking about comparative advantage. Basically, can we produce the components where it's most productive, where it's most optimal to produce them? That benefits all of us, the UK and our trading partners. It frees up resources in the EU, for example, to produce other components that

maybe the UK wouldn't be as competitive at. If we can expand supply and produce more of the components that maybe we could have a comparative advantage at it and we could grow output.

Dharmesh:

But the crunch points are really coming up in all of these programmes. There's a 50 gigawatt offshore wind rollout target. There's 10 gigawatts of hydrogen production capacity in operational construction by 2030. We've got CCUS industrial clusters for transport and storage with power there and industrial carbon capture across these major industrial hubs. High net cluster in the northwest, east coast cluster Teesside in the Humber, up in Scotland, down in the Solder.

James:

There is a lot going on, isn't there, across, I mean we're talking about, as we said already, a lot of different technologies, a lot of different supply chains. Isn't this enough? So do you think this is maybe just the beginning of the required government intervention here? Is that a sustainable model? Is that financially affordable? There's loads of questions in my head around this. We've committed to the obviously very aggressive net-zero legislative position. There's a couple of ways you could look at this, right?

Dharmesh:

There is. I think this is not the silver bullet and it shouldn't be viewed as that.

James:

Yeah.

Dharmesh:

And it's not for government to do all of this. Ultimately the market has to deliver and there has to be that market pressure to unlock investment. All subsidies distort, large subsidies distort even more. And it's important that capital allocation is not distorted. There are always risks allocating to technologies that don't become viable. Building new manufacturing facilities that later don't become competitive and going back to government for handouts, or always on low margins, potentially loss making, having to close later. There's a lot of disruption and is suboptimal for investment, for expanding output.

Dharmesh:

So it is really important that market forces work here and that companies are investing where there's a good strong commercial case where it's commercially viable, where there's a long-term plan for these facilities to survive and thrive. They have export potential, they have the potential to grow. All of that sits outside of the government intervention. The government is intervening with a focused targeted capital programme to alleviate some of those market failures, some of those risks we talked about. But it's not for government to fund all of this, direct all of the capital, direct where private companies are deploying their capital. That I think wouldn't lead to the best outcomes.

James:

Yeah. I suppose maybe from your view, from your recent role, from a hydrogen perspective, and I know we can't talk about all the details of how for obvious reasons, is this going to be a very hotly contested application for this? And if you were listening to this from a perspective of one of those applicants, what are the things that I should worry about most in order to get, because it says 10, 20%, right? That is IRR impactful, right? That's quite significant, if I was looking at this from a

fundraising perspective, for some of the facilities required. What do you think are the core components of that application you were bidding in?

Dharmesh:

I'm going to go quite glass half full here. I'm going to say there's some real opportunities. I'm going to talk about the size of the prize here. So I think there's a great opportunity here. It's a great opportunity to accelerate, to unlock viable supply chain investments. I think two things matter most. Typically, historically and understandably so, government capital programmes have focused a lot on social value metrics like local economic impact or jobs created. But here there are two priorities.

Dharmesh:

One, alleviating the most acute supply chain constraints. So which of those components that are currently undersupplied in the market, where there are long lead times, there are major constraints, there are major pressures, and that's acting as a bottleneck stalling deployment programmes. Those are the areas where the need is most pressing and companies who can alleviate those pressures stand a really good chance.

Dharmesh:

And second is the point I made earlier, these investments, these proposals, need to have a strong commercial case. They need to be commercially viable. They need to be setting out how by investing in the UK, which has some great investment advantages, has some challenges, as well, land, labour costs. So how by locating in the UK, by building out a new facility in the UK, what's the advantage? Are they're going to do things in a more capital intensive, innovative manner, modular manufacturing? What's the USP that will make this a really viable investment and actually deliver all the benefits that it set out?

Dharmesh:

I think those are the two main things. I've had a glimpse of the pipeline, and I won't say some of the specifics, but offshore wind and networks are going first, the pipeline looks healthy, obviously there's always an opportunity cost. There's not unlimited resources here so it will be competitive.

James:

And when you say the pipeline, that's really interesting, when you say the pipeline is healthy, are these a mixture of predominantly projects that are almost like RTB, Ready to Build, but maybe they are not distressed, but the risk profile around that infrastructure isn't adequate and requires this fund? And has that been a part of the formation and sizing of this grant fund? Or is it actually the other way around, is it actually we've done this top down at government level and tried to figure out what's needed and then just put the application out there? How is that formed?

Dharmesh:

Yeah, a bit of both actually. Top down, bottom up. The Department for Energy Security has worked really closely with the Department of Business and Trade here who have gathered some brilliant market intelligence, market mapping, working with the office for investment, the key business sector teams there, to really understand where is the market at, what types of proposals might come forward, what types of companies have been developing these types of things but have maybe not had the catalyst of a GIGA fund. And we talked about this, even a small CAPEX grant can move the dial on IRR, perhaps mitigate the valley of death a bit, breathe forward a proposal that might otherwise be shorter.

Dharmesh:

But in terms of the nature of that pipeline, it is as it stands more established players with proposals that closer to, with an idea of COD with [inaudible 00:17:19], but in future this is going to be a five-year capital fund. There are opportunities here for proposals that perhaps less well-developed, maybe at the more innovative end, that the department could incubate, could work collaboratively with the developer, with the investor, to work out something that maybe is not ready to be allocated funding in the next financial year, but perhaps the one after that or the one after that and this is a programme that will have to evolve.

James:

That's fascinating, Dharmesh. Yeah, it's really exciting and interesting. It just shows the breadth and depth of the challenge that we have across the sector. I spend my days looking at energy problem solving and I wasn't even aware of this and just deeply in a completely different area. So it's just fascinating and I think just talk a little bit more about you. You've just joined Baringa and it was really good opportunity to just have a bit of a conversation on why you've joined, and what you are aiming to do, and what your area of interest is so that listeners can maybe reach out to you or understand a bit more about that journey you've been on.

Dharmesh:

Yeah, so I was quite fortunate in my previous, but one role I got to head up the UK's first hydrogen allocation round, the world's first contracts for difference competition for hydrogen with a small, really talented dynamic team. And we, from mid-2022 to the end of 2023, delivered what we think is really going to push the hydrogen economy forward. The first round deals agreed with 11 projects announced.

Dharmesh:

And then I got this good opportunity for a few months to head up the Secretary of State's commercial advisory panel, advise ministers and help the department on a range of major commercial issues across new nuclear, or major nuclear build out, renewables, networks, GIGA. We're talking about this CCUS Track-1, unlocking those final investment decisions. So coming to Baringa is actually a really natural next step.

Dharmesh:

I'm a say commercial strategist, strategy advisor, commercial advisor by nature. I'm most motivated by getting deals done, getting projects unlocked, FIDs, seeing metal in the ground. And here upon concluding that first hydrogen round, I'm coming here working with, there's great expertise across the board from CFD auctions to power market modelling to building out the commercial cases, business cases for hydrogen DCS, e-fuels, sustainable aviation fuels. So I'm looking to build out a strong commercial market advisory offering focused on hydrogen, focused on the UK initially, to really help these developers, these investors, take a project from a sketch to a finalised commercial proposition that's actually going to happen.

James:

That is super exciting. Great. And obviously as you say, this isn't just a GB problem statement, this is international and we obviously are international, but it is not just about Baringa. There's a wide variety of different clients and recipients of this that they're going to directly benefit from this work. So yeah, super exciting.

James:

I think we've just about timed out. We'll stop geeking out on all things low carbon supply chain. But yeah, really thank you so much for your time, Dharmesh. If anyone's listening wants to know more about this, please reach out to Dharmesh, the team and we're happy to be in touch and talk it through more. So yeah, thanks very much and thank you for listening.

Dharmesh:

Yeah, nice one. Great to be on.