

## **S2 E8 – How ‘Energy-as-a-Service’ models unlock commercial decarbonisation**

### **Baringa’s Energy Innovators Podcast**

Ellen:

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 your host, Ellen Fraser, a partner in Baringa's Energy and Resources Sector Group. I love to decode the enormously complex energy industry challenges and look for simple, effective solutions for clients. In this podcast series, we speak with leading industry experts to learn how they're putting people first and creating impact that lasts to fuel their energy transition. How do you create a business case that actually keeps all parties happy here, given that cost is such a major factor?

Dan:

There are various technical and commercial risks associated with energy infrastructure investments, and fundamentally, all stakeholders and parties to the deal across the value chain need to be informed about the risks. And firstly, on the businesses side, as the organisation that will be consuming the energy and signing up to this fixed-price subscription service model, they need to be satisfied fundamentally that the long term price of that is a commercially attractive price given what else they think can happen in the market over the term of the agreement.

Tim

As Dan's alluded to, these are really complex solutions to address a lot of headwinds or tailwinds depending on which way you're coming. A lot of parties, a lot of corporates, a lot of asset owners, real estate asset owners need to move very quickly and get educated very quickly. And so how do you address that complexity and learning, which could be very different to their business as usual. So cost, as you say, is certainly a major factor, but reliability, risk, speed and the validation and certainty around the carbon impact of actually acting, which must be reported on, all of that can be addressed in a third party delivering another as a service model.

Ellen:

Welcome to today's episode of Baringa Energy Innovators, where we're diving into the topic of Energy-as-a-Service models and their role in commercial decarbonisation. Do you know that the built environment accounts for 39% of global emissions? With mass electrification, rising electricity prices and stricter energy efficiency regulations, the push to decarbonise real estate is stronger than ever. But what does sustainable, affordable energy look like for the built environment? And how can we financially incentivise commercial building owners and operators? One promising solution is the Energy-as-a-Service model where customers pay a monthly subscription fee for the use of clean energy technologies, avoiding upfront costs and ownership risks.

In this episode, we'll explore how Baringa and Tallarna are making these models work in practise and what needs to be in place for them to succeed. With me today is Tim Meanock, CEO and founder of Tallarna. Tallarna is a climate, tech and finance platform that deploys energy as a service projects across the built environment, accelerating decarbonisation. We're also joined by Dan Bolton, Baringa expert in decarbonisation and low carbon technology commercial advisory. So let's dive in and learn more about how energy as a service can unlock decarbonisation for businesses and homeowners alike. Dan, if I start with you, if that's okay, what's driving building decarbonisation and Energy-as a-Service models?

Dan:

Well, there are many drivers of building decarbonisation, and these are regulatory, corporate drivers and then commercial and market drivers as well. So the fundamental driver for decarbonisation of the economy and the built environment is climate change and the drive towards net-zero emissions in the economy as a whole. So as you mentioned, the built environment is currently responsible for around 40% of annual global emissions, so it's a major frontier for sustainability. In terms of regulations in the UK, the previous UK government introduced minimum energy efficiency regulations for commercial lettings, which must be met by 2030, and these will impact around 80% of buildings. So that there is certainly a burning platform there and a significant amount of energy efficiency work to be done.

Ellen:

Yeah, perfect. Thank you. That was really helpful to understand. And what are the main ways for businesses to actually decarbonise their operations?

Dan:

So we have to assess where these emissions are coming from. So buildings require a lot of energy to run, and this is mostly from gas and electricity consumption. So electricity grids are actually decarbonising at a relatively quicker rate than other sectors due to the maturity of large scale renewables and onsite and private wire solar, which has also been an attractive option for businesses recently. In fact, the UK did generate around half of its electricity from low carbon sources in 2023. Gas consumption is a bit trickier to decarbonise, and while switching from gas boilers to lower carbon solutions for heating such as heat pumps will eventually be commonplace, the industry is experiencing some challenges in terms of the design and the cost of that equipment at the moment. And also it's worth mentioning that the electrification of heat and transport in the built environment will also require a significant expansion of the electricity network, which kind of brings battery storage as an increasingly attractive solution to increase power capacity onsite when grids are not available or also when a site has excess solar energy.

Ellen:

Okay. Yeah, interesting. Thank you. And you talked a little bit there about some of the barriers. It sounds like cost is a major challenge within that equation in terms of how to actually go about decarbonising.

Dan:

Yeah, so I mean these can be quite capital-intensive projects installing quite expensive assets like battery, solar panels, bigger heat pumps. They're kind of the most common pain points that can prevent businesses from finding the right decarbonisation solutions. But there's also kind of long and complex customer journeys and various other commercial and technical risks that need to be managed. So we think that what businesses really need here is someone to package up these solutions into a neatly packaged offering and sort of manage these risks on an ongoing basis because plain and simple, most organisations do not have the internal skills and resources to put together and manage these low-carbon energy solutions in-house.

Ellen:

Yeah, interesting. So almost in a nutshell it's around financing and simplification, if you like.

Dan:

Yeah, exactly.

Ellen:

Yeah. Perfect. Super. Thank you. And for you then, Tim, how do energy as a service models actually work? And we talked about cost being a barrier, but how do they actually financially incentivise action?

Tim:

As Dan's alluded to, these are really complex solutions to address a lot of headwinds or tailwinds depending on which way you're coming. A lot of parties, a lot of corporates, a lot of asset owners, real estate asset owners need to move very quickly and get educated very quickly. And so how do you address that complexity and learning, which could be very different to their business as usual. So cost, as you say, is certainly a major factor, but reliability, risk, speed and the validation and certainty around the carbon impact of actually acting, which must be reported on, all of that can be addressed in a third party delivering another as a service model. And again, as you were saying, sitting behind that, if this service is a funded finance solution, then you have to bring a lot of actors together, a lot of technical actors and financial actors behind the model. It's really around understanding and managing all the risks so you can sell it and you can deploy it and it's effective.

Ellen:

Yeah, great. What effectively are you describing there is almost an ecosystem of solutions that you bring together to help the customer on that journey.

Tim:

Exactly. There's the underlying technology providers and the people who can implement and operate them, but also you're wrapping essentially a financial service around the equipment. And so the way that we've seen it being done most effectively is bringing the insurance industry to understand, manage, price those risks most effectively. So you can bring in the cheaper and cheaper funding and therefore deliver a meaningful customer benefit because the cost of the capital equipment to do the works is a major barrier, but also if you're selling a service, it's got to deliver value. And so the comparison point is what would happen either if they did it themselves or they did nothing at all. And it comes down to pound, shilling and pence that this service has to save the money as well as fulfil their carbon requirements.

Ellen:

Yeah, super. Excellent. So the cost of do nothing becomes less attractive.

Tim:

Exactly.

Ellen:

Dan, if you can help me understand how do you create a business case that actually keeps all parties happy here, given that cost is such a major factor?

Dan:

Yes. Well, as we mentioned, there are various technical and commercial risks associated with energy infrastructure investments. And fundamentally all stakeholders and parties to the deal across the value chain need to be informed about the risks. And firstly, on the businesses side, as the end user of the equipment and the organisation that will be consuming the energy and signing up to this fixed price subscription service model, they need to be satisfied fundamentally that the long-term price of that is a commercially attractive price given what else they think can happen in the market over the term of the agreement. And this fixed prices, that Tim was alluding to is including the provision of energy and infrastructure finance as well as insurance and paying for that long-term guarantee of carbon reduction, which enables them to help meet their regulations, their internal corporate targets. And this requires a good view of forward energy and carbon prices. As we've seen over the past few years, energy prices can fluctuate quite significantly and are increasingly volatile and impacted by geopolitics and global gas prices, which historically have driven the power price. But businesses can become insulated from that when they self-generate and use battery storage and solar power on site.

Businesses also need to make sure that they're properly assessing the full range of benefits from the low carbon technologies that they're installing on their sites and they're accurately valuing these, for example, looking at energy price projections, but also the value of carbon to that organisation. So many firms are now setting internal shadow carbon prices which help them to guide investment decisions that more accurately reflect the impact of carbon on society as they see it, because many businesses think that the current carbon price that is in the market or that they're exposed to does not value the externalities that they are seeing in the market in terms of the damage that it's actually doing to the climate.

Fundamentally, the energy system's undergoing quite significant transformation with a lot of the drivers of energy price being impacted as we transition from an electricity system previously dominated by flexible coal and gas assets to dominated more by renewables and primarily wind energy, which does change a lot, the drivers of the energy price going forward. So it's really important that businesses understand that when they're trying to look at these kind of energy to service deals.

Ellen:

Yeah, super. Thank you. That was a very sophisticated answer, which is amazing. What I took away from that is, it's all about reduction of risk and it's all about certainty for consumers who are effectively looking into this kind of product going forward, given energy price volatility, carbon price volatility and uncertainty, etc.

Dan:

Exactly. As a business, that will be signing up to these sorts of deals, you might look at it like you're swapping a large capital expense upfront for a long-term, OpEx fix. And businesses have different governance structures and approaches that are specific to them, and they just have to make sure that they're kind of meeting their investment requirements there in that sense. And pricing these deals using informed assumptions and sort of allocating risks across the value chain to those best place to manage them is fundamental to coming up with an attractive solution for everyone.

Ellen:

Coming back to you from a Tallarna standpoint, managing risk for energy as a service project's clearly really tricky managing that price risk, managing the volatility. How do you do that for your customers?

Tim:

The forward power and carbon pricing is fundamental to that. If there is a third party that's absorbing all of that risk, they need to understand that very accurately or as accurately as possible upfront. That same projection when you overlay onto all this of geopolitical changes can actually be a major incentive for a customer to come into it because they want to build in that long-term hedge. But on the other side of the fence, there are a number of risks that are more easily managed than others. So when you unpack them, the significant ones are always the underlying technical risk and the performance risk of the technologies, the demand risk, the merchant risk, and always from a bloodless finance perspective is around the credit risk. All of those can be accurately understood and that's why we work with Baringa. But also once they are priced or the actual impact on the risk absorber is understood, that's where we take it to the insurance market.

And what we found is that versus an infrastructure fund as an example, even a very experienced one that would look at this and self-insure the insurance industry just looking at very discrete risks can price it tighter. Once those are transferred, it presents a really nice place for a funder to fund over the long term, but it isn't the only risk management solution. There's structuring fixed and variable payments to the customer. But that in the commercial space, that's much more available and understood. And this is an ever-evolving, more sophisticated route. But yeah, insurance and structuring is key.

Ellen:

Yeah, interesting. And presumably your partnership in coming back to the ecosystem that talked about earlier, you're presumably dealing with some quite specialist firms who really understand exactly what you're taking to market and work with you to develop customised products for each individual customer.

Tim:

We have a team and software that can model out and understand the risks associated with deploying technology, either in isolation or with others, so batteries and solar, and then modelling that out and creating a risk metric which an insurance company can consume and price. And so what we do is progressively through smaller and larger and more complex technologies, take them through an underwriting process, and then we can price a standardised insurance policy to create a standard risk profile for a funder.

Ellen:

Yeah, super helpful, really clear. The model I'd like to learn, I'm sure there are other players in the market as well, but how would you articulate to a new customer, how that product helps them manage risk?

Tim:

Well, if the outcome for the customer is either a flat or a reduced cost for the benefits of electrified heating or onsite generation, it depends on the customer's terms of what floats their boat and what

they're looking for. But where we've seen the driver's most significant and value is where the energy assets are deemed really complex. And if they don't put them in, they're subject to fines or an unhedged energy bill. And importantly, it's got to be 'and', it enhances their business as usual. So we work in the commercial sector with a limited number of typologies, which is growing all the time. So to take an example for a real estate owner on a business park, they want to try to create the lowest possible power pricing for their tenants, and they want to install EV charging and they haven't got enough grid capacity. So that's a perfect opportunity to introduce batteries, solar and to manage the grid constraint and still provide the outcome. Those are the types of benefits that they understand, happy tenants and higher property value.

Ellen:

And it's almost a service plus as well, isn't it? Because you're building in extra capabilities into that model as well.

Tim:

Yeah. And often starting with the most complex piece, a big battery, but then overlaying solar and EV charging is more understood.

Ellen:

Composite solutions, ecosystem solutions.

Tim:

Exactly.

Ellen:

Yeah. Wonderful. And then almost in conclusion, and it's a question for both of you, I guess, what advice would you give to a business looking to decarbonise their operations? Maybe if I come to you first, Dan.

Dan:

Yeah, sure, thanks. I'd say businesses should be setting clear and ambitious decarbonisation targets, and I guess they go through a process of baselining their current emissions and then setting credible carbon reduction targets with regular intervals as we are seeing a lot of businesses doing the markets. Especially listed firms that are subject to changing shareholder and investor pressure, as well as changing pressure for consumers and customers of their services too. So many businesses are looking to have climate change targets that are Paris aligned with the 2°C target and setting targets to achieve net-zero in their operations by the 2040s or by 2050.

And that kind of drilling down into a deeper level, we're helping organisations go through the journey of baselining their initial emissions, and then assessing credible decarbonisation pathways by looking at the technology options and the economics around those options. So for example, onsite solar, EV charging and fleet decarbonisation and switching from gas to electric heating, for example as well. And then they kind of come down into the level of commercial execution and looking at the options for investment and the commercial model that enables them to actually invest or enter into energy to service models as well. So I'd say that's probably the process that the businesses need to go down and the more kind of energy specific information that they can get their hands on and understand,

given the fundamental shift that's happening in the energy system in terms of the energy transition and the drive to net-zero, the better, I would say.

Ellen:

And again, just to help me understand that, that's around understanding your baseline, understanding a credible path to decarbonisation, and then to some extent, almost doing that as cost effectively and as timely as you can.

Dan:

Yes. Yeah, exactly.

Ellen:

Perfect. Super. Thank you. Dan, anything to build on that?

Tim:

Business owners, multi-site operators that need to act quickly and someone's got a foot in an enormous capital cost. I think there are models out there where these counterparties can be really demanding and say, how do I make this work for me both from an environmental climate, carbon and a cost perspective? I need it to at least be cost neutral if not profitable. And I think often people are surprised that there are now these proven big or smaller branded solutions that they can pull down on that have all of these different bits and pieces packaged. And once all of those friction points and interfaces have been dealt with in terms of the creation of the as a service solution, it can be deployed very quickly and effectively.

Ellen:

Yeah, really helpful. Thank you. And I'm just wondering whether you've got any expansion plans beyond businesses, because my head is now going into some of our other clients and all the decarbonisation challenges that we hear across that other sectors as well. So have you got plans to expand beyond that environment or is it really anchored in the built environment for now?

Tim:

It's a very good question. I mean, it does have parallels that we're beginning to encroach on within transport and to pure play single sites or single purpose sites for EV charging as an example. But yeah, the mind boggles as to where this can be taken next. We've taken a couple of years to formulate in particular the legal structures. Once those are understood, once you present something that one would always hope that the answer should always be yes, they then want to pour through the legal documents. And unless you can produce that quickly and with decent backing, then things stall, that's now moving very quickly. So we're hopeful.

Ellen:

Yeah, that's really exciting. Really exciting. And the need and the opportunity, both are there, well beyond the built environment as well. So thank you so much both for that. Really, really insightful, really helpful to talk through that. And more broadly, if you've enjoyed this episode, why not subscribe and you'll be notified for future episodes as soon as they're available. We'd love to hear from you too. So if you'd like to discuss today's topic further, please do get in touch with us. Thank you so much both.

Tim:

Thanks a lot.

Dan:

Thank you.