EN26

Speech by Andrew Bills

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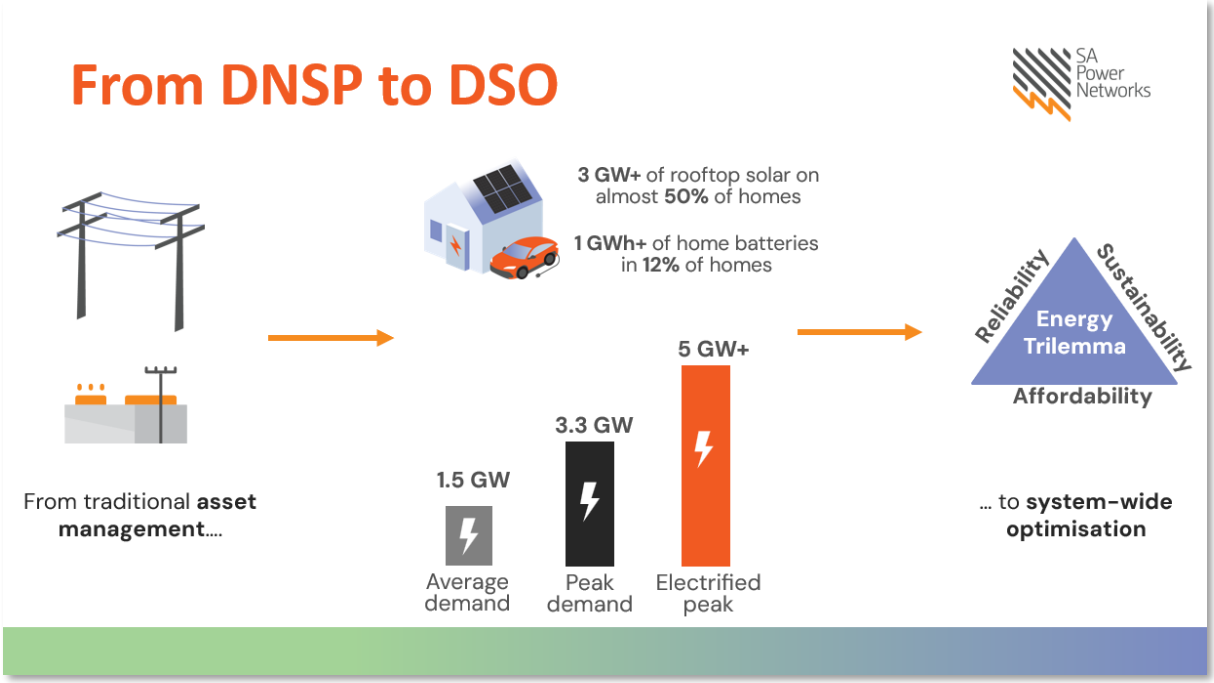
Topic: *Progressing the DSO Journey*

If there's one thing that we love in the energy industry, it's acronyms. Every new starter needs a dictionary just to follow a conversation. I've been speaking a lot about one of the industry's newer acronyms – DSO. It stands for Distribution System Operator. And while it might sound like just another acronym, we think it represents something genuinely important.



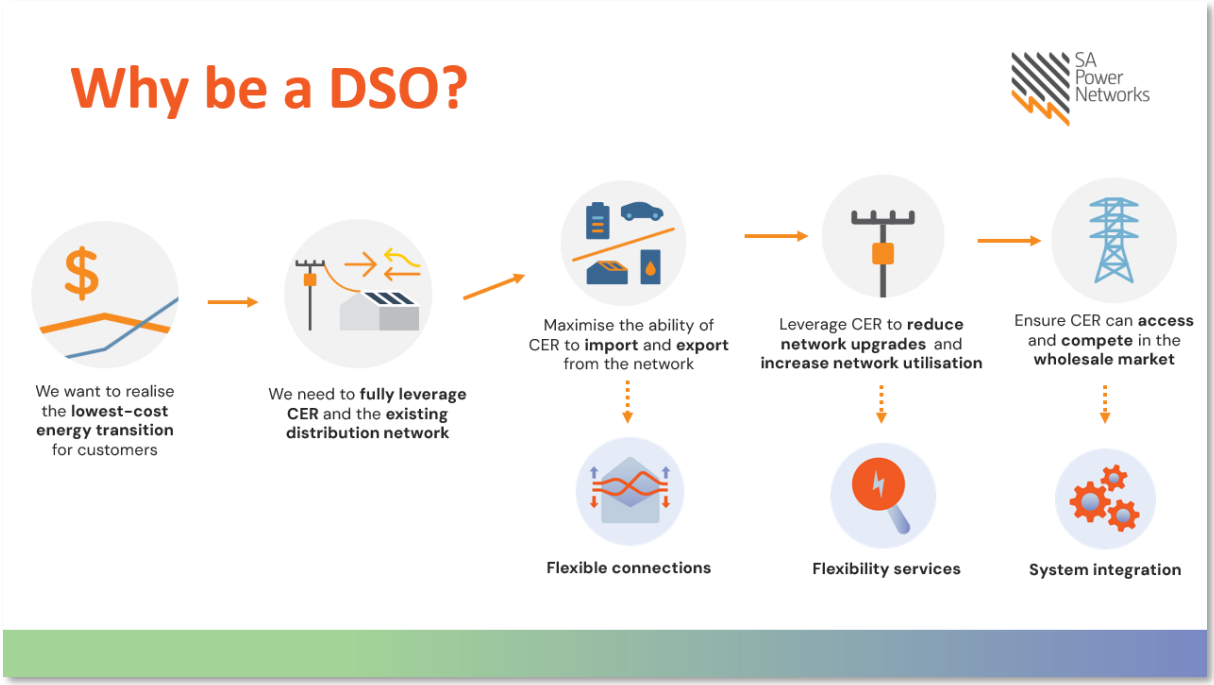
What's a DSO? Put simply, it's the evolution of a DNSP. Traditionally, DNSPs manage poles, wires and substations. We forecast demand, build out the network, and we keep the lights on. But the job is getting bigger, with our network now home to the largest sources of generation and storage that South Australia has ever seen – rooftop solar and home batteries.

We have more than 3 GW of rooftop solar and more than 1 GWh of home batteries, all on a network with an average demand of 1.5 GW and a peak demand of 3.3 GW. Electrification will push this further, increasing demand by more than 50% and more than doubling the energy through our network.

This shift brings challenges – but more importantly, it brings opportunities. Opportunities for us to work with our customers, to support them as they adopt new technology, and to use that technology to deliver a more efficient energy transition.

We have three goals in doing this. Supply electricity to our customers at the lowest cost possible, keep that supply reliable and decarbonise as fast as we can.

This is what being a DSO is all about – working *with* our customers to unlock the full system-wide value of what they've already invested in.



So – what are we doing and why are we doing it?

Our goal is simple – we want to realise the lowest cost version of the energy transition.

We know that the lowest cost source of electricity comes from customer energy resources – CER – like rooftop solar and home batteries. We want our customers to treat their energy like their fruit & veg - grow their own if they can, buy local if they can't. The resources are there, on roofs and in backyards – our job is to make sure that they're working as hard as they can, and that customers are getting the benefit.

There are a few things we need to do to make this happen. Step 1, we need to make sure that customers can import and export as much as possible from our network. The distribution network is the gateway to the energy system, and we want to make sure that gate is wide open. We're doing this by implementing *flexible connections*.

We can now calculate network constraints in real time and communicate these down to CER. This lets us run the network right to its limits, squeezing every drop out of existing infrastructure.

Once a flexible connection is in place, we have a way to communicate with a customer's devices, and the customer discovers flexibility in their energy use. This gives us an opportunity to leverage CER to further support the network, by procuring *flexibility services* from customers.

In practice, this means that we pay customers to respond to network constraints. This lets us avoid network upgrades, meaning that costs stay low and that customers get rewarded for helping the network. If you're a retailer or an aggregator, it's another market to play in – another layer to add to the virtual power plant value stack.

So we've got the network being fully utilised, but what about the market? We think that the most efficient energy market is one dominated by CER and firmed by large scale resources. So how do we make sure that CER can access the wholesale market and compete on an equal basis?

We think that's another thing that DSOs can help out with. We can play the role of system integrator, working with retailers and aggregators to form a middle layer between CER and the broader energy market. We recognise that every decision that we make has ripples across the system – it impacts the need to build new transmission and the need to build new generation, and we want to make sure that we're bringing that whole-of-system lens to the table.

So – 3 simple steps to being a DSO.

Step 1, flexible connections – ensuring customers get the most out of their resources. We've pioneered this in SA through our Flexible Exports program, beginning in 2017. Flexible Exports is now business-as-usual for us, offered to every new solar system and with more than 90% of customers taking it up. We think that over the next decade we'll be able to transition all 3 GW of our rooftop solar to being flexible.

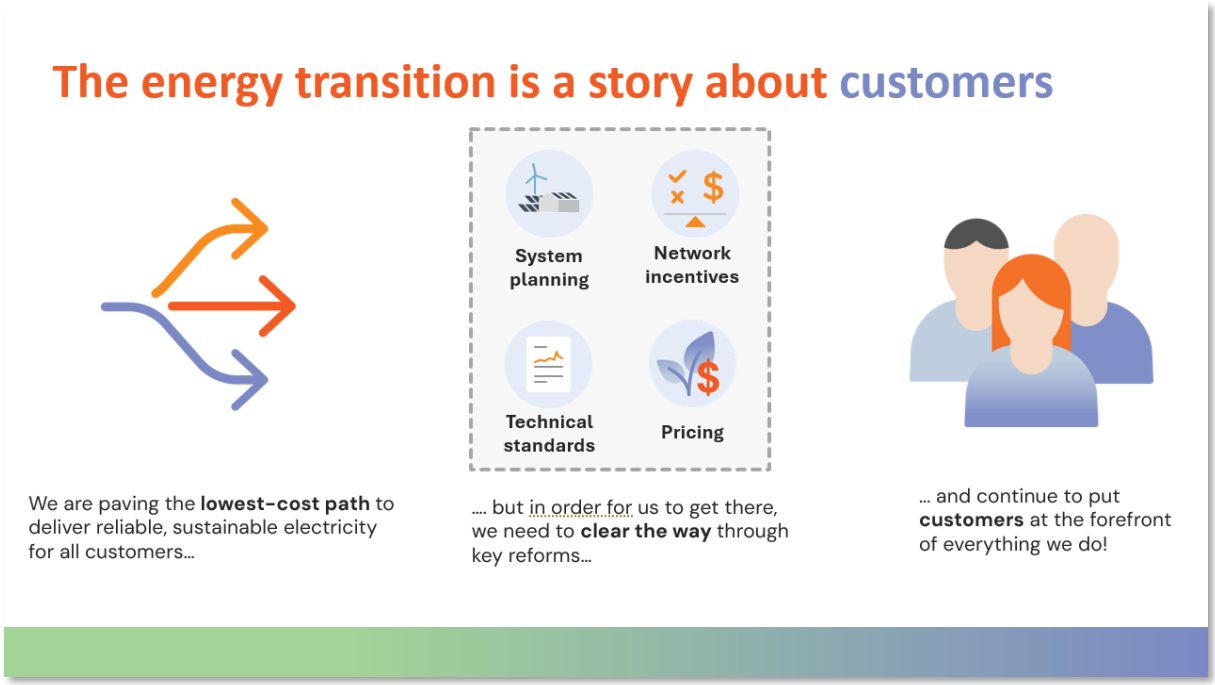
Flexible imports is here too – our Energy Masters program is being rolled out to 500 homes across South Australia, pioneering the development of home energy management systems, exploring the customer value enabled by demand flexibility and demonstrating a nationally scalable, customer-first model.

Step 2, flexibility services – leveraging customer flexibility to maximise network utilisation. We're deep in design for this phase right now, spinning up a marketplace where participants can bid for response to network constraints right across our

network. We're leveraging the models already in place in the UK and building upon them to suit our world-leading levels of CER.

Step 3, system integration – making sure everything works together smoothly across distribution, transmission and the market. We're working on a few projects in this space, from optimising CER market dispatch with network constraints, integrating flexible connections into AEMO's forecasting and working with retailers to make it easier to run a virtual power plant.

If you want to learn more, come and visit our DSO booth at the front of the exhibition hall. It's a one-stop-shop for everything you want to know about being a DSO! We even have a simulator that we've built to show how this all works in practice.



The energy transition is fundamentally a story about customers, and we're here to write that story - to realise the vision of a transition driven by customers, for customers.

We're making real progress. But there are a few things that risk derailing us, things that we really think need addressing.

Number 1, we need to make sure that CER is an *output* of long-term system planning, not just an input. We want to design *for* customers, not *around* them. We're calling for the AEMC to look at the co-optimisation of CER with large-scale resources through the ISP Review this year.

Number 2, we need to make sure that DNSPs are properly equipped to become DSOs. Today's regulatory framework doesn't lend itself to this future, and we think that needs a look at. We're calling for the AEMC's Network Regulation Review to explore new incentives for DNSPs to maximise network utilisation this year.

Number 3, we need CER to be plug & play – devices need to seamlessly speak to one another. We now have a standard for inverter interoperability, but there's more to do. We're calling for that standard to be nationally legislated this year, and for work to begin on interoperability standards covering all CER.

Number 4, we need customer-facing pricing models that genuinely encourage and reward flexibility – we want customers to jump at the chance of being in a virtual power plant because they'll be saving so much! We're calling for the AEMC's Pricing Review to look at more carrots and less sticks - reward customer flexibility for helping to deliver to a lower-cost system for everyone.

This is a story about customers, but they can't write it alone. We need the whole industry to come together and back the true leaders of this transition – the customer. We're showing how it can be done – and we're asking everyone to come along with us.