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Despite starting my career in energy efficiency and demand management, albeit in the residential sector, I've spent the last decade seeking refuge in the finance sector. But I'm back. And ready to share my insights from the other side and put those to use for driving this transition, at a scale and pace and in a way that leaves no one behind.

I will seek to cover three key questions:

1. How to get buy-in and action.
2. Do we have the regulation needed for decarbonisation to meet targets? If not, what is needed?
3. Beyond targets, what do Australian companies and other organisations need to decarbonise?

1. So how do we get buy in and action?

Push and pull for all things.

The global push that achieves buy-in and action (whilst climate laws in Australia are still nascent) includes border tariffs, competitor behaviours and other stakeholder pressure.

Border tariffs with international competitors –

- The EU is one of the first to move on a border tariff, which has significance particularly for precious metals such as gold and agricultural products.
- Others may not yet have border tariffs, but over 75% of bilateral trading partners now have net zero emissions reductions targets by mid-century (China 2060), so as they invest domestically to decarbonise, you can bet they are going to protect their own industries against unfair competition from dirty imports via border adjustments, much like the EU, and especially now the US with its Inflation Reduction Act and supply chain security focus.
- That's why there is going to be a push for Australian industry to decarbonise to stay internationally competitive in a global marketplace.
- Our competitors for agriculture, including countries like New Zealand who have a very comprehensive suite of policy measures to address climate, may soon have a competitive advantage given pricing mechanisms that drive industrial efficiencies in dairies and abattoirs.

Pressure is building with many stakeholders, all gunning for net zero by 2050: other stakeholders creating a market push here in Australia include employees, customers and particularly investors – driven in part by APRA's guidance on climate risk disclosures, aligned with the Task Force for Climate-related Financial Disclosures (TCFD) and Science Based Targets initiative (SBTi), plus the International Sustainability Standards Board.

On the pull side, there's the obvious: hyperinflation of fossil fuel energy prices spilling into inflationary pressures and hence higher mortgage costs, and the vibe (how people voted in the last federal election tells us that people want action on climate).

There is an opportunity for efficiency and cost savings, but there is also the opportunity to put the manufacturing, industrial, agricultural and freight transport sectors to work for and have them benefit strategically from the energy transition.

Let's take the Australian energy export market – which needs to transition from its global leading position on coal and LNG exports to 100% renewables and critical minerals like lithium over the next few investment cycles.

So if we are going to continue to become an energy exporter, but a renewable energy one – we have three ways of doing this:

- Directly by generating RE electrons and sending them across on projects like the SunCable to Singapore
- We can do it by making green hydrogen and ammonia using 100% certified renewable energy sources and exporting it on ships, as we do with LNG now
- Or more easily we can use 100% renewable energy in mining, refining and to make all the goods and services that we already manufacture, grow or transport and then export these as ALREADY net-zero. Let's do that as efficiently as possible.

And it's the last of these that excites me the most about the pull, or upside opportunities presented by this once in a century energy transition.

Beyond Zero Emissions agrees, showing processing our raw materials into usable goods, such as green steel and aluminium or productive inputs such as green hydrogen and ammonia, could give Australia a \$333 billion energy export opportunity – far exceeding our current export earnings from coal, oil, gas and steel.

But as someone who has worked for a few decades in climate policy and energy finance, I know that just because it makes complete sense to do, it doesn't necessarily mean it shall be done... particularly where energy efficiency or energy productivity is concerned. So before I go to the solutions that I think we need, let me address the second question.

2. Do we have the momentum / regulation needed for decarbonisation to meet targets? - If not, what is needed?

Climate Action Tracker has Australia's overall rating as INSUFFICIENT (to deliver its share of a less than 2-degree world).

Particularly: its net zero target by 2050 is comprehensively rated as poor; Its fair share of its global target is insufficient and its investment in climate finance (no surprise) is CRITICALLY insufficient.

So let's look at the three areas that define momentum:

- Direction: Is it headed the right way? At the highest level, laws like the Climate Act, yes, but enabling legislation, regulations and institutions, not quite.
- Velocity: Does it address the challenge with the velocity required? No.
- Acceleration: Does it speed up the good change already underway? Not enough.

It would be a shame to squander a crisis like inflationary pressures, rising domestic gas prices and Australia slipping to 18th place out of 25 industrialised countries on economic productivity.

We can't afford to have any unhelpful "transition" measures such as 'mainlining gas' as a bridge between coal and renewables.

We must electrify everything we possibly can, as soon as practicably possible. That doesn't mean having new fuel efficiency standards for light vehicles that gives a taxpayer tick to hybrids. They may help reduce today's greenhouse gas emissions from passenger fleets, but they don't serve the function of firming the grid – we need as much storage plugged into industrial processes and the larger grid as practicable, and fast.

So many of the necessary solutions are set in SYSTEMS, but the policy responses generally don't reflect that reality.

Groups such as Circularity NSW are onto it, but it's not happening in many other places in terms of policy.

Why is this important?

Just one example:

Policies such as the small-scale technology target encourage the installation of technologies such as PVs, ground heat pumps, induction cooking and solar thermal water heating, because they are on the approved technology list. But we now need an approved SYSTEMS list. One for demand side response. And one that assesses the overall efficacy of the system to deliver least cost, capacity and maximum reliability for energy use and supply.

To the third question.

3. Beyond targets, what do Australian companies and other organisations need to decarbonise?

I have every confidence in engineers and systems architects to sort commercial and industrial process improvements. However the REAL PROBLEMS remain and are not being address by their stewards – public policy by government policy makers, certification and the necessary financial decisions by the commercial or industrial facility CFO.

What obstacles need to be removed? I have seven favourites to share.

- I. Asymmetry of information and resources – particularly how decisions are made and money spent across business units and different levels of government
- II. Workforce capacity issue – need more skilled people from trades to IoT, and accounting for counterfactual aspects of investments
- III. Absence of local manufacturing to protect us from, and leverage global supply chain challenges, especially given EVERYONE else in the world is running hard to decarbonise. We are a technology and price taker. We must build in autonomy of supply and be brave enough to do so.
- IV. Plant retrofits. These can't happen in crisis, they must be proactive, hence some allowances on writing down assets sooner in tax treatments of machinery and plant would also be useful to enable an orderly transition and support business continuity.
- V. Solve the capex versus opex issue. So many are talking about the COST of transition and passing onto the consumers. But after 5-10 years the costs of operations is nominal. Price of the sun today is \$0; price in 2032 still \$0, irrespective of who is fighting who on the other side of the world.

We need regulators like the ACCC to look through a different lens at some of the pre-competitive measures that may ordinarily look anticompetitive. I am referring to competitors teaming up (say two leading Supermarket chains or mining giants) to do a bulk buy on right hand drive light trucks from China or India. That doubling of scale could accelerate the delivery of that tech into our market.

Another example may be helping organisations in each other's value chain in the same geographic region, collaborating on RE power station and grid connection, or even just a PP. Often vertical integration of these can be construed as anticompetitive, but this is the sort of creative commercial thinking we need to get the job done for the benefit of the whole system.

And we also could do with a government endorsed and supported framework for action for individual sectors – despite great work from organisations like Beyond Zero Emissions, Climate Works, RE100, Institute for Sustainable Futures, RACE for 2030 and others on industry specific pathways.

Government, the Commonwealth in particular, has a role to play in coordinating state and territory efforts, harmonising as much as possible (but as a race to the top) and stepping in to de-risk investments.

I am a big fan of investment vehicles such as the CEFC, EFA and NAIF which are off budget and can coinvest with other financiers to reduce the cost of capital by taking a position in a structured deal.

The Climate Change Authority now has this in its remit, but it will take many of us stepping into the process to steer that in the right direction and at the required pace.

Questions:

1 – There are so many options for decarbonising from energy efficiency technologies to electrification of as many processes as possible, to alternative fuels like H2, as well as lots of different storage options and technologies. How can the C & I sector make smart investment choices in such a complex and rapidly changing environment?

We are creating the path by walking it. At times we will make decisions that result in less optimal outcomes than other decisions, but it's important that we make them. Doing nothing is making a decision – one of inaction, and that is the least optimal of all.

1. You need a plan – a McKinsey cost curve for your buildings or plant, which of course builds asset life and business continuity plans to make any interventions – but also be mindful of supply chain delays. Remember, we don't make much of the stuff here and almost every nation is scrambling to get this done. And local workforce constraints – the equipment may land on the ports, or even at the shopping centre, but do you have the technically trained person available to get it installed?
2. If you can be involved in any precompetitive exercises such as those that happen in places such as RACE for 2030, then get involved.
3. We need as much aggressive collaboration as possible particularly to address systemic issues in value chains (which can be done pre-competitively) or with workforce constraints (again, impacting all competitors in a sector) or even data (which may need to be amended to help customers share data for the purposes of optimisation).
4. Look for third party quality marks, such as the Smart Energy Council's accreditation for Green Hydrogen, which will play an important role for freight transport and storage.
5. Invest in an expert. Consultants aren't always cheap, but perhaps you can get them on a performance-based contract?
6. Join up to groups like A2EP, Smart Energy Council and others where information sharing happens, particularly at events they host where international speakers share their wares, and where you meet potential new partners.

2 – The US recently passed its landmark \$369bn [Inflation Reduction Act of 2022 \(IRA\)](#) which has been hailed as the single largest investment in climate and energy in American history. It unleashes a flood of incentives for the repurposing of existing energy infrastructure, the establishment of local production capabilities in critical minerals and battery technologies, investment in advanced technology vehicles, especially in the heavy-vehicle sector, recycling, carbon capture and more. Can Australia do something similar, or is the scale just not manageable here? Yes – BUT...

Firstly, \$369bn is a good start, but not likely enough for the US.

Secondly, we have SOME of the measures in the IRA, but many of them are the brainchildren of the Australia's states and territories. We need the Commonwealth to play a national co-ordination, leadership, financing and framework-making/guiding role.

We need a fuller look at how we raise and spend money, we have since before Ken Henry dropped his report on the Resources Super Profits Tax in 2010. So we need to be mindful about how some of these measures interact with other taxes and tariffs, like how we pay for infrastructure when we no

longer have people paying fuel excise, or replicating the US US\$1,500/t price on methane, or when we hit the spiral of death for gas connected homes.

Thirdly, yes, it is manageable here (workforce constraints aside) and it's one of the few times that borrowing from future generations – done well – makes everyone a winner.

This transition truly risks increasing inequality, with those with financial wherewithal winning soonest and biggest, those who can access finance on commercial terms next in the queue and those renting, or living in public or community housing, coming dead last.

The US package is a historic down payment on environmental justice. Any measures in Australia should apply the same lens to this opportunity. Our major trade partners have committed to decarbonisation, let's look to the investment opportunities onshore to help them leverage that important goal.

Finally, and linking back to my first point, although the US IRA tilts much of its money to assisting those impacted by the transition rather than the industry which needs to do the heavy lifting to deliver the transition, its scope is national and it's broad – we need something like this too.