

# Backcasting, net-zero and the resource efficient future

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## COMMENT



While putting together this issue of MCA, I received a fascinating opinion piece called “*Backcasting to the future*” by Johan Potgieter of Schneider Electric. Potgieter begins with the Grandfather Paradox hypothesis, where a time traveller goes back to change the past, and therefore changes the future. If the traveller killed his still-young grandfather, for example, the traveller himself may never have existed, which means he couldn’t have gone back to kill his grandfather. Hence the paradox.

Backcasting, Potgieter explains, turns this scenario on its head by defining a future vision and then reverse engineering the “requisite actions to achieve this future” – and unlike the Grandfather Paradox, backcasting is completely possible. “In essence, backcasting begins with the end goal and then works backwards. This is counterintuitive to traditional forecasting, which extrapolates from the past to predict the future,” he adds.

He cites a 2014 talk by the futurist speaker, Thomas Frey, who described several backcasting scenarios: controlling a hurricane; people living past the age of 200; self-care healthcare; invisible wireless lightbulbs; gravity-reducing technology; and human controlled hurricanes. And already much closer to realisation, he cites flying drones that move like a flock of birds – now realised in spectacular drone light shows; 3D printing becoming the industry standard – certainly the case in some niche applications; and driverless car highways. In each case, the ‘fanciful/visionary’ idea is mooted and, by working backwards, the technologies, policies and operational plans needed to bring the idea to reality are systematically identified and sequenced.

I think the climate crisis brings this backcasting approach into sharp focus, with survival of the planet as the key future goal. Arresting global warming and associated climate change by legislating a pathway towards net-zero by 2050 is the more specific target.

But this has been in place for decades now and we continue to struggle to come anywhere near the reduction targets required to prevent a climate crisis. Perhaps because our economies are so totally dependent on the fossil-based energy and fuel technologies of the past, any transition pathway is seen to result in unaffordable expenses and economic sacrifices. This along with the incessant bickering about who is most responsible and who should pay.

Also though, I believe, net-zero, while necessary, is hardly an exciting future vision. Who is inspired by legislation? Our green and sustainable 2050

targets need to capture our imaginations in some way, so that any sacrifices we make now will seem worthwhile.

In our innovative feature in this issue Julie Wells, of the National Cleaner Production Centre SA (NCPC-SA), previews the 2024 NCPC-SA Conference to be held at the CSIR on September 11 and 12. In term of a holistic and visionary approach to climate change, I think the NCPC-SA and the UN’s Global Network for Resource Efficient and Cleaner Production (RECPnet) have created an excellent platform for navigating a future that goes way beyond minimising carbon emissions.

This is epitomised by the work already being done via the Global Eco Industrial Parks programme, which was launched in South African back in 2010. “An industrial park is like a microcosm economy. It has an energy and a water supply, roads and street lights. Tenants working in different industries share the space and the idea is to get them to share resources as well. No one should be sending a waste material out of one gate while someone else is bringing in the same new material via another. And why have six different delivery vehicles employed by six different companies that are idle for most of a day?” asks Wells.

Working better together can massively reduce everyone’s environmental footprint, while also making each business more efficient and more economically sustainable. And from a community perspective, more jobs can be created and the surrounding community can be better integrated into the local economy.

This is a comprehensive vision of a new way of handling global production needs. An efficient, sustainable, equitable and environmentally friendly way and a win-win solution to global warming. Achieved by simply ‘feeding off each other’ to make much better use of the Earth’s available resources.

Energy efficiency, the renewable energy transition, the vehicle and fuel technology changes, the circular economy, smart solutions and every aspect of the changes required to meet the 2050 emissions reduction targets can be encapsulated into this multifaceted approach. In addition, though, it offers a view of a more exciting and better world.

We are living with crises that often seem completely beyond our control. Putting backcasting to widespread use to re-imagine our futures – as the NCPC-SA and RECPnet seems to be doing – might be a better way to steer out of our current difficulties.

Let’s all get behind this future vision and stop trying to fix the past.



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