

How will the energy developments of today impact the future your children inherit?

THE energy choices we make over the next few decades will shape the future, writes Christopher Dean. There is a 35-year gap between my daughter and me. Thirty-five years in retrospect saw a huge change for Australia, as the internet age thrust the energy industry into a range of new challenges.

Thirty-five years ago, Australian governments owned most of our infrastructure. Now, most of it is foreign owned.

Thirty-five years ago, for a home to be able to create its own renewable energy was in the realm of science fiction.

Thirty-five years ago, electricity was as cheap as chips, due to our large reserves of coal-powered stations and our lack of appreciation of the negative effects the fuel has on our environment.

But what about 35 years from now, in the far-off and futuristic 2055? Working intimately with the energy and renewables industries I know there's much to hope for, but plenty to be concerned about, too.

The neighbourhood grid

With most of Australia's coal power stations due for closure by 2050, we could see an Australia powered mainly by renewable energy coupled with batteries. Be it wind, water or solar, our lucky country has great feasibility for all aspects of



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renewable energy across the board, thanks to our diverse range of landscapes and natural resources. The numbers are there, showing renewables to be more cost effective than coal power stations to build and run.

Already, we are seeing states like Tasmania put into place pledges to create up to 200 per cent renewable energy. With goals looking to meet and exceed the demand for power, it is safe to assume renewable energy will be accommodated through revolutionary grids designed for this development, accompanied with increasingly affordable battery storage.

And on the note of grids: could we anticipate the dominance of the neighbourhood microgrid? As we forecast more severe weather and climate events for Australia, a system where homes can share their excess onsite generation with neighbours, rather than having to transmit power from rural power stations into metro areas, may see not only more effective efficiency but also an energy strategy designed to reduce risk.

Pushed by population

For the people of 2055, household and manufacturing equipment will be far more energy efficient, using less power per device. With more consumers focusing on ethical purchasing, from buying Australian made to learning about the origins of their products, perhaps 2055 will see efficiency ratings not only focus on energy use but also take into account the lifecycle of the product itself. With a lessened demand on the grid through efficient tools, machinery and appliances, we may even see a shift in the market itself.

And less demand is exactly what will be needed. With our population expected to jump 60 per cent from 23.3 million today to 37.6 million by 2050, and Sydney's and Melbourne's populations projected to rise between 60 and 80 per cent to reach almost 8 million inhabitants each, we will need to see energy efficiency as a standard of quality.

This population growth means new challenges for 2055 well beyond the energy industry. For example, while I can see the remaining cars left on the road (autonomous vehicles are already showing their strengths and feasibility) being electric or hydrogen fuelled, the 60 per cent growth of people means a power grid ready to evolve and charge these cars comfortably at peak hour.

Likewise, we may see retailers evolving to charge more for power during 4 and 7 pm to encourage people to use power over night when there is less demand. Just as Australia is exploring the "double-sided market" to reduce blackout risk, can we expect more from retailers to drive the market and usage?

While 2055 seems so far away, knowing it will be the reality for my adult daughter brings the year so much closer. Nobody can predict the future in this volatile market but the way we show our values and optimise our energy usage today can influence tomorrow's energy mix and move the needle.

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Shining a light on the energy future for our children.