

## AWARDS, HONOURS AND ACHIEVEMENTS

"I have loved seeing those who have attended our courses, or who used to work with me, now making a significant contribution to the energy sector both here in South Africa and across the African continent."

## DEFINING MOMENT

His energy sector advisory work for the African National Congress (ANC) at the birth of democracy and, more recently, his advisory work for President Cyril Ramaphosa.

## WHAT PEOPLE MIGHT NOT KNOW

He drives only 1960s cars, maintaining them himself and keeping them wholly original. However, after seeing Prince Harry drive his bride away in an E-type Jaguar that had been converted to electric, he is contemplating a similar conversion. In the meantime, he glides around town silently on his electric scooter.

## ENERGY FOR A BETTER SOUTH AFRICA

The energy sector has gone full circle in the 40-odd years that Anton Eberhard has been involved in the field. For his PhD in the early 1980s, he investigated how small-scale solar applications had the potential to revolutionise energy access for rural communities in the mountainous kingdom of Lesotho, with no access to electricity and relying on fuelwood and animal dung for heating and cooking. That was in the wake of the 1970s energy crises, when soaring oil prices sent energy-thirsty nations scrambling for alternative sources of power.

In the decades that followed, investments in renewable energy ebbed as the oil price recovered. However, the global interest in renewables has recently bounced back. Eberhard, who since 1999 has directed the University of Cape Town (UCT) Business School's Management Programme in Infrastructure Investment, Reform and Regulation, says change in energy technology is happening more rapidly now than at any point in his career. "It is an incredibly exciting time," he says.

Solar and wind energy are now, in most countries, the cheapest grid-connected sources of electricity. And as storage prices plummet, off-grid power solutions

are more competitive on cost. The electricity system is becoming decentralised as a multitude of smaller, incremental investments are made by utilities, industries and households. The last are becoming producers as well as consumers of power, he says, while networks and mini grids combined with innovations like blockchain and the Internet of Things will democratise energy services, resulting in services that are better matched to individual and community needs.

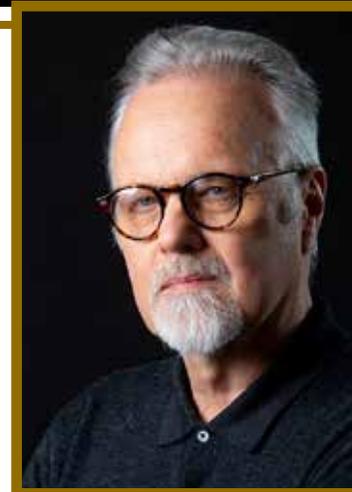
But energy policy is also a highly contested space, with power tussles in South Africa between proponents of new nuclear builds, coal power and renewables. "When I started work on solar and rural development, I did not foresee that the energy transition would be so fundamental and so contested," he discloses. But the ferocity of the tussles makes sense, he adds. "There will be winners and losers. Those who have links to old utilities will resist these changes and question the reliability of the new ones."

## FROM POLITICS TO PHD

Eberhard grew up in Port Elizabeth and started his working life as an engineer with a first degree in chemical engineering from UCT. After a few years in the industry, and using his free time to read widely, he realised he wanted to explore ways in which science and technology could contribute more directly to improving people's lives and to building a more just world.

This being in the late 1970s, Eberhard's emerging personal philosophy and politics was a poor match with that of the apartheid government. In fact, he received a 12-month sentence, subsequently spending two months in military detention barracks, for refusing to do military service prior to leaving the country to study for his PhD. In a way, he was lucky: He was one of the first conscientious objectors in the country. Later ones earned up to six years in jail for the same act of resistance.

Eberhard pursued his PhD at a multidisciplinary research unit that linked science and engineering with social and developmental issues at the University of Edinburgh in Scotland. Those years abroad presented him with a melting pot of ideas and cultures. "There we were, 12 PhDs coming in from all over the world,



looking at different aspects of science, technology and society." Eberhard enjoyed the study immensely, especially the time he got to spend in the rural villages of Lesotho doing his field work. But he always planned to return and work for a better South Africa. Eberhard came back to South Africa in 1983 and joined UCT's Energy Research Institute as a senior researcher. He championed renewable energy and alternative energy technologies, which became a key component of a new master's programme offered by the institute linking energy and development.

In the 1980s it was difficult for academics like Eberhard to gain traction with South Africa's policymakers on innovative ways to broaden energy access in the country. As a result, Eberhard and his students focused on small-scale local innovation. He set up a field station in the Transkei where his students were able to experience the context of under-development – a rarity for them in the tumultuous last decade of apartheid. "We were trying to have an impact on a micro-level, exploring models of good practice at a local and regional level."

## **MORE INCLUSIVE POLICIES**

Everything changed in the 1990s with the arrival of a new political dispensation that focused on social redress. Eberhard was one of the experts who worked with the new African National Congress (ANC) government to formulate more inclusive policies for the new democracy. As his team grew, he established the Energy and Development Research Centre at UCT. This group helped design the country's new electrification programmes and contributed to the 1998 White Paper on Energy Policy. "It was an exhilarating time, we had a very direct impact on policy," he recalls.

In 2001, driven by a desire to focus more on his own research, Eberhard moved across to the UCT Business School. Here, he created a smaller and more specialist research group which he leads to this day as a Professor Emeritus and senior scholar, despite reaching retirement age at the end of 2017. The

group leads international research projects and has worked in 25 different African countries to date. It also works with global organisations like the World Bank and the African Development Bank on power sector reform. With the breakthrough in renewable energy, he and his colleagues have also been working on the design of solar and wind energy auctions across Africa.

His unit runs executive education courses for senior leaders and professionals from public and private sectors globally, helping them to understand energy transitions, power sector reform and investment issues. His short courses typically each attract about 80 participants from more than 20 different countries.

He maintains a high public profile and keeps advising governments on energy and infrastructure policy. Recently, his group assisted with a Parliamentary enquiry into Eskom state capture and corruption, and he has also chaired an electricity sector advisory panel for President Cyril Ramaphosa. He values his university base which helps him to maintain a high level of integrity and independence in the contested energy policy space. "Being in the university, one is committed to having open and rigorous inquiry, as opposed to working for a specific energy sub-sector, sector or interest group." His group's research helps inform evidence-based policy. And its involvement in real-world challenges in turn informs the group's research and teaching. "I love the combination of activities and the feedback loops."

Eberhard has no plans to slow down. In fact, since retiring he has been publishing more than ever. "It feels like a very productive time." His unit remains exceptionally popular with young researchers: the last time his group advertised a PhD fellowship, it received 140 applications competing for that one post. Working with talented young people is "one of the biggest joys of my life at this stage," he remarks. "I love my work, because we can make a difference."

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# Legends of South African Science II

**Academy of Science of South Africa (ASSAf)**

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