



CURRICULUM VITAE: ALAN COLIN BRENT

Institution	:	Stellenbosch University
Profession	:	Engineer
Specialization	:	Sustainable development and technology management practices
Position in Institution	:	Professor (IE) and Associate Director (CRSES)
Year appointed	:	2009
Nationality	:	South African
Language Proficiency	:	English, Afrikaans

EDUCATION AND PROFESSIONAL STATUS

Qualification	Institution	Year
BEng (chemical)	Stellenbosch University, South Africa	1994
MSc (environmental engineering)	Chalmers University of Technology, Sweden	1999
PhD (engineering management)	University of Pretoria, South Africa	2004
MEng (technology management)	University of Pretoria, South Africa	2009
BPhil (sustainable development)	Stellenbosch University, South Africa	2010
MPhil (sustainable development)	Stellenbosch University, South Africa	2012

Memberships: PrEng (Engineering Council of South Africa)	2000
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EMPLOYMENT AND EXPERIENCE OVERVIEW

Alan Brent has bachelor degrees in engineering (chemical) and philosophy (sustainable development); master's degrees in science (environmental engineering), engineering (technology management), and philosophy (sustainable development); and a doctorate in engineering management. Since 1995 he consulted to a variety of industrial and public sectors in South Africa and other developing countries in the fields of environmental engineering and management, and as a project manager, in the Material Science and Manufacturing unit of the South African Council for Scientific and Industrial Research (CSIR). In 2002 he was tasked with the establishment of the Chair of Life Cycle Engineering at the Graduate School of Technology Management (GSTM) of the University of Pretoria. Through his appointment as part-time professor the GSTM continues to conduct research on sustainable life cycle management practices in the private and public sectors, which is also a focus area of the postgraduate academic programmes of the GSTM. In 2006 he returned to the CSIR to initiate and lead research in the Natural Resources and the Environment unit, which promotes sustainable development in management and planning practices, with an emphasis on the energy sector. In 2009 he was appointed as a professor in the Sustainable Development programme of the School of Public Leadership (SPL) in the Faculty of Economic and Management Sciences of Stellenbosch University, where he is also the associate director of the Centre for Renewable and Sustainable Energy Studies (CRSES) in the Faculty of Engineering. From 2014 he is appointed as a professor of Engineering Management and Sustainable Systems in the Department of Industrial Engineering (IE).

Recent, Selected Project Experience:

Year	Description, client
2014	Green economy investigations for the KwaZulu-Natal Province, DEDT
2013	Development of the South African Green Economy Model (SAGEM), DEA and UNEP
2012	Impacts analyses to replace coal with biomass at Eskom power stations, CSIR
2011	Feasibility studies to integrate solar PV at commercial and industrial facilities, Distell
2010	Development of a Solar Energy Technology Roadmap (SETRM) for South Africa, DST
2009	Development of a Bioenergy Systems Sustainability Assessment and Management (BIOSAM) portal, CSIR
2008	Development of environmental indicators to assess scenarios in the energy sector of South Africa, SANERI
2007	Development of an energy R&D framework for NEPAD, DST



PUBLICATIONS

Author and co-author of over 50 articles in scientific journals, chapters in books and conference proceedings.
Author and co-author of over 20 technical reports for external contract clients.
Presented over 30 papers at local and international conferences.

A full publications list is available on request, but those key to the energy sector are as follows:

- Musango JK, Brent AC, Bassi A, 2014. Modelling the transition towards a green economy in South Africa. Technology Forecasting and Social Change, in press.
- Gauché P, Brent AC, von Backström TW, 2014. Concentrating Solar Power: Improving electricity cost and security of supply, and other economic benefits. Development Southern Africa, in press.
- Musango JK, Brent AC, Tshangela M, 2014. Green economy transitioning of the South African power sector: A system dynamics analysis approach. Development Southern Africa, in press.
- Gauché P, von Backström TW, Brent AC, 2013. A concentrating solar power value proposition for South Africa. Journal of Energy in Southern Africa 24 (1), 66-76.
- Brent AC, 2012. Technology assessment in developing countries: Sustainable energy systems in the African context. International Journal of Innovation and Technology Management 9 (5), 1250035.
- Musango JK, Brent AC, Amigun B, Pretorius L, Müller H, 2012. A system dynamics approach to technology sustainability assessment: The case of biodiesel developments in South Africa. Technovation 32, 639-651.
- Broughton EK, Brent AC, Haywood L, 2012. Application of a multi-criteria analysis approach for decision-making: The case of concentrating solar power in South Africa. Energy & Environment 23 (8), 1221-1231.
- Pienaar J, Brent AC, 2012. A model for evaluating the economic feasibility of small-scale biodiesel production systems for on-farm fuel usage. Renewable Energy 39 (1), 483-489.
- Brent AC, Pretorius MW, 2011. Industrial and commercial opportunities to utilise concentrated solar thermal systems in South Africa. Journal of Energy in Southern Africa 22 (4), 15-30.
- Musango JK, Brent AC, Amigun B, 2011. Sustainable electricity generation technologies in South Africa: Initiatives, challenges and policy implications. Energy and Environment Research 1 (1), 124-138.
- Musango JK, Brent AC, Amigun B, Pretorius L, Müller H, 2011. Technology sustainability assessment of biodiesel development in South Africa: A system dynamics approach. Energy 36, 6922-6940.
- Stafford WHL, Brent AC, 2011. Bioenergy Systems Sustainability Assessment and Management. Renewable Energy Law and Policy 2 (3), 205-222.
- Musango JK, Brent AC, 2011. Assessing the sustainability of energy technological systems in Southern Africa: A review and way forward. Technology in Society 33, 145-155.
- Amigun B, Musango JK, Brent AC, 2011. Community perspectives on the introduction of biodiesel production in the Eastern Cape Province of South Africa: Questionnaire survey results. Energy 36 (5), 2502-2508.
- Musango JK, Brent AC, 2011. A conceptual framework for energy technology sustainability assessment. Energy for Sustainable Development 15, 84-91.
- Adeyemo O, Wise RM, Brent AC, 2011. The impacts of biodiesel feedstock production systems in South Africa: An application of a partial equilibrium model to the Eastern Cape social accounting matrix. Journal of Energy in Southern Africa 22 (1), 2-11.
- Musango JK, Brent AC, 2011. A conceptual framework for energy technology sustainability assessment. Energy for Sustainable Development 15, 84-91.
- Stephenson AL, von Blottnitz H, Brent AC, Dennis JS, Scott SA, 2010. The global warming potential and fossil energy requirements of biodiesel production scenarios in South Africa. Energy & Fuels 24, 2489-2499.
- Brent AC, Rogers DEC, 2010. Renewable rural electrification: Sustainability assessment of mini-hybrid off-grid technological systems in the African context. Renewable Energy 35, 257-265.
- Brent AC, Hietkamp S, Wise RM, O'Kennedy K, 2009. Estimating the carbon emissions balance for South Africa. South African Journal of Economic and Management Sciences 12 (3), 263-279.
- Barry M-L, Steyn H, Brent AC, 2009. Determining the most important factors for sustainable energy technology section in Africa. South African Journal of Industrial Engineering 20 (2), 33-51.
- Taviv R, Brent AC, Fortuin H, 2009. An environmental impact tool to assess national energy scenarios. International Journal of Environmental Science and Engineering 1 (4), 183-188.
- Brent AC, Wise R, Fortuin H, 2009. The viability of the South African biofuels industrial strategy. International Journal of Environment and Pollution 39 (1/2), 74-91.
- Bubou GM, Brent AC, Tredoux C, 2009. Towards addressing the social sustainability performance of the petroleum industry in the Niger delta region of Nigeria. South African Journal of Industrial Engineering 20 (1), 119-131.
- Brent AC, Kruger JL, 2009. Systems analyses and the sustainable transfer of renewable energy technologies: A focus on remote areas of Africa. Renewable Energy 34, 1774-1781.