

## Mr Michael H. Smith

### Research Co-ordinator, The Natural Edge Project

The Natural Edge Project (TNEP) is an independent Sustainability Think-Tank based in Australia. TNEP operates as a partnership for education, research and policy development on innovation for sustainable development. TNEP's mission is to contribute to and succinctly communicate leading research, case studies, tools and strategies for achieving sustainable development across government, business and civil society.

Driven by a team of early career Australians, the non-profit Project receives mentoring and support from a range of experts and leading organisations in Australia and internationally, through a generational exchange model. TNEP is administratively hosted in-kind by Griffith University and Australian National University. The project is led by a Secretariat team of Charlie Hargroves, Michael Smith, Cheryl Desha, Peter Stasinopoulos and Stacey Hargroves.

### Qualifications

BSc University of Melbourne, Melbourne 1997

BSc (Hons) (First Class), University of Sydney, Sydney, 1998

Ph.D submitted, Australian National University, Canberra. 2006

### Short Biographical Information

Michael H. Smith is a co-author and co-editor of *The Natural Advantage of Nations* (Earthscan 2005) and is the content coordinator for The Natural Edge Project (TNEP). Michael completed a double major Science degree in Chemistry and Mathematics from the University of Melbourne. In his honours year at the University of Sydney, he conducted research into alternatives to ozone layer destroying chemicals. He then moved to Canberra to research atmospheric chemistry with Professor Michael Collins at the Australian National University. After co-founding TNEP, Michael changed Ph.D topic and recently submitted to ANU on "Advancing and Resolving the Great Sustainability Debates" co supervised by ANU's Professor Steve Dovers.

Michael and the team from TNEP have developed a range of projects focused on education and training for sustainable development, including working with Universities, Professional Bodies, Industry Groups, Government Agencies, Companies, Schools and touring international keynote speakers. In 2005, TNEP was announced the winner of the prestigious Banksia Award for Environmental Leadership, Education and Training for The Natural Advantage of Nations, and the training program, Engineering Sustainable Solutions Program. In 2006, Michael was accepted as a Departmental Visitor to ANU's Centre for Resource and Environmental Studies as a representative of TNEP to work on capacity building material, under funding from the CSIRO Energy Transformed Flagship in collaboration with Griffith University, and other TNEP partners. Michael represents TNEP on the editorial board for CSIRO ECOS magazine and Engineers Australia's Sustainability Committee.



### Contact Details

Unit 20, 124 DeBurgh St  
Lyneham, Canberra  
ACT 2602

+61 400 154 449

www.tnep.net



### Employment History

Departmental Visitor,  
Centre for Resource and  
Environmental Studies,  
ANU.

PhD Scholarship:  
Research School of  
Chemistry ANU, Canberra

Laboratory Demonstrator  
2<sup>nd</sup> Year Physical  
Chemistry and 1<sup>st</sup> Year  
Chemistry, Department  
of Chemistry, ANU.

Summer Research  
Scholarship: Department  
of Chemistry, Sydney  
University.

Summer Research  
Scholarship, Department  
of Chemistry, Melbourne  
University

---

## Academic Achievements

---

### Books:

- Smith, M., Hargroves, K., Stasinopoulos, P., Desha, C., and Reeves, A. (2011) *Water Transformed: Sustainable Water Solutions for Climate Change Adaptation*, TNEP, (In Development)
- Smith, M., and Hargroves, K. (2010) *Cents and Sustainability: Decoupling Economic Growth from Environmental Pressures*, TNEP, Earthscan, London (In Development)
- Von Weizsäcker, E., Hargroves, K., and Smith, M (2009) *Factor Five: A Convenient Truth: Increasing Wealth and Reducing Resource Use*, TNEP, Earthscan, London. (An update of 'Factor Four')
- Stasinopoulos, P., Smith, M., Hargroves, K. and Desha, C. (2008) *Whole System Design - An Integrated Approach to Sustainable Engineering*, TNEP, Earthscan, London. (Published in partnership with UNESCO and the World Federation of Engineering Organisations)
- Smith, M., Hargroves, K., Stasinopoulos, P., Stephens, R., Desha, C. and Hargroves, S. (2007) *Energy Transformed: Sustainable Energy Solutions for Climate Change Mitigation*, The Natural Edge Project (TNEP), Australia. (Available Online)
- Hargroves, K. and Smith, M. (eds) (2006) *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*, Earthscan, London. (9 Chapters available Online)

### Book Chapters:

- Hargroves, K. and Smith, M. (eds) (2006) 'Waste streams to value streams', in: Marinova, D., Annandale, D., and Phillimore, J. (eds) (2006) *The International Handbook on Environmental Technology Management*, Edward Elgar, Northampton, MA, USA.
- Palousis, N., Hargroves, K., Smith, M. and Paten, C. (2005) 'Tomorrow's Technologies' in Tate, A. (2005) *Towards a Sustainable Future*, Focus Publications, Sydney, pp 88 - 107.

### Other publications:

- Prosser, M., Smith, M., Hargroves, K., and Toyne, P (2006) *Australian Plantation, Products and Paper Industry Council's (A3P) Sustainability Action Plan - Performance, People and Prosperity*, A3P.
- Hargroves, K., Smith, M., and Lovins, H (2005) *Prospering in a Carbon Constrained World: Profitable Opportunities for Greenhouse Gas Emissions Reduction*, CCX/EUX Opportunities Report.
- Toyne, P., Tate, A., Hargroves, K., and Smith, M. (2003) *Sustainability Framework for the Future of Australia's Infrastructure Handbook – Australian Council for Infrastructure and Development*, AusCID.
- Smith, M. and Hargroves, K. (2006) 'Sustainable Development: How Does Australian business Reconcile Environmental Obligations with Competitive Advantage-Improving Competitiveness Through Effective Environmental Management.' Australian Industry Group's Environmental Management Handbook.
- Smith, M., and Hargroves, K. (2007) *Executive Summary: Action on climate change can help business competitiveness and economic growth*, (Submitted as a call for leadership from the participants of the '8th National Business Leaders Forum on Sustainable Development'), The Natural Edge Project (TNEP).
- Hargroves, K., Stasinopoulos, P. and Smith, M. (2007) 'Sustainable IT' through 'Sustainable Product Service Systems', a case study of Hewlett Packard, The Natural Edge Project (TNEP), Australia.

**Papers:**

- Smith, M., Hargroves, K., Palousis, P., and Paten, C. (2006) *Pros and Cons of the Nuclear Energy Debate*, The Natural Edge Project online article.
- Palousis, N. Hargroves, K. Smith, M.H. Paten, C.J.K. (2006) 'Re-thinking Sustainable Solutions – Innovation Inspired by Nature'. Submitted to the Australian Rangelands Society: 14<sup>th</sup> Biennial Conference (Renmark, Australia), 5–7 September 2006.
- Smith, M. Hargroves, K (2006) *The First Cuts Must be the Deepest*. CSIRO ECOS: Towards A Sustainable Future.
- Palousis, N. Hargroves, K. Smith, M and Paten, C (2005) '*Tomorrow's Technologies*' in: Tate, A (2005) *Towards a Sustainable Future*. pp 88 - 107, Focus Publications, Sydney.
- Palousis, N. Hargroves, K. Paten, C.J.K. Smith, M.H. (2005) 'Making the Profitable Transition Towards Sustainable Business Practice.' Submitted to the ASEE/AAEE 4<sup>th</sup> Global Colloquium on Engineering Education (Sydney, Australia), 26-29 September 2005.
- Smith, M.H. Hargroves, K. Palousis, N. Paten, C.J.K. (2005) 'A Taste of Best Practice in Engineering Sustainable Solutions'. Submitted to the 2005 Environmental Engineering Society National Conference, 18-19 July 2005.
- Paten, C.J.K. Palousis, N. Hargroves, K. Smith, M.H. (2005) 'How Do You 'Teach' Sustainability to Engineers? Introducing the Engineering Sustainable Solutions Program'. Submitted to the 2005 Environmental Engineering Society National Conference, 18-19 July 2005.
- Paten, C., Palousis, N., Hargroves, K., and Smith, M. (2004) '*Engineering Sustainable Solutions Program - Critical Literacies for Engineers Portfolio: Putting Sustainability as a 'Critical Literacy' into Mainstream Engineering Curricula*', International Journal of Sustainability in Higher Education, in press.
- Paten, C., Vance, P., Hargroves, K., Smith, M., and Palousis, N. (2004) *Queensland Environmental Protection Agency. Inventory of Resource and Energy Usage Efficiency for Priority Industry Sectors in Queensland*, report to government.
- Smith, M. Hargroves, K, Toyne, P (2004) '*The Role of Infrastructure in Sustainability*'. Published in Engineering World October Edition.
- Smith, M. Hargroves, K. (2004) *Encouraging More Sustainable Practices – The Easy Way*. Published in CSIRO ECOS: Towards A Sustainable Future.
- Smith. M. & Hargroves, K. (2002) *Harnessing External and Internal Drivers for Change, Partnerships for Sustainability to Facilitate Permanent, Change in the University Sector*.
- Smith, M (2001) '*ANU's Whole System Approach to Water Management. From Science Buildings to Stormwater to Sullivan's Creek*.' Australian Campuses Towards Sustainability inaugural conference.
- Smith, M. Waldren, L (2001) *The Research School of Chemistry: Significant Cost Savings Through Environmental Initiatives*. ATEM- AAPPA 2001 Conference.
- Haworth, N. L. Smith, M. H. Bacskay, G. B. Mackie, J. C. (2000) *Heats of Formation of Hydrofluorocarbons Obtained by Gaussian-3 and Related Quantum Chemical Computations* Journal of Physical Chemistry. A.; 104(32); 7600-7611.

**Conference Presentations:**

- 24 July 2006 Victorian Department of Primary Industries– '*Achieving Greater Competitiveness and Environmental Sustainability in Victoria's Beef and Dairy Industries*.'
- 22 June 2006. Australian National University's Global Change Symposium –'*The Natural Edge Project- A Boundary Organisation's Response to the Threat of Climate Change*.'

- 16 May 2006. National Business Leaders Forum for Sustainable Development – ‘A3P Sustainability Action Plan: Overview of Opportunities.’
- 14 Oct 2005. CSIRO Greenhouse 2005 International Conference ‘Key insights to help achieve Deep Cuts in Greenhouse Gas Emissions, whilst Creating Jobs and a Stronger Economy’ with Adjunct Professor Alan Pears.
- 18-19 July 2005 EES 2005 – Creating Sustainable Engineering Solutions Conference – ‘A Taste of Best Practice in Engineering Sustainable Solutions Books, Resources, Examples, and Facts to Help Engineers Achieve Sustainability in our Lifetimes.’
- 4-5 April 2005. National Business Leaders Forum on Sustainable Development (Melbourne, Australia) Launch of The Natural Advantage of Nations by the Rt. Hon Sir Ninian Stephen, Former Governor-General 1982-89 (View Speech) with the team from TNEP, Nick Palousis, Michael Smith, Karlson ‘Charlie’ Hargroves and Cheryl Paten.
- 16–19 November 2003, International Conference of the Network of Regional Governments For Sustainable Development (Perth, Western Australia). Session presentation by Charlie Hargroves and Michael Smith, ‘Natural Competitive Advantage of Regions: Achieving Regional Competitive Advantage, Attracting Investment, and Encouraging Eco-Innovation through Collaborative Approaches for Sustainable Development’.
- July 2003. Students & Sustainability 2003, (Adelaide, Australia). Plenary Speaker: ‘A Whole of Society Approach to Sustainable Development. Workshop: Universities and Sustainability.’
- 2–4 December 2002. Australian New Zealand Society of Ecological Economics, ANZSEE, (Sydney, Australia). ‘The Natural Edge Project: A Whole of Society Approach to Sustainable Development’.

#### Seminars and Guest Lectures:

- 5, June, 2006 World Environment Day. Radford College – “How can Individuals Make a Difference and Help the Environment?”
- 3rd, May, 2006 ‘The Art and Science of Natural Sequence Farming Forum’ – (ANU Manning Clark Lecture Theatre, Canberra) Facilitated this forum with Natural Sequence Farming pioneer Peter Andrews, and some of Australia’s leading NRM scientists such as Dr John Williams, Professor David Mitchell, Tony Coote, for the 2005 National Innovation Festival.
- 2 April, 2006. Australian Conservation Foundation Council Meeting– ‘Prospects for an Economic Growth that is Environmentally and Socially Sustainable’
- 17<sup>th</sup>, March, 2006. Hatch Engineering. *Context and Overview of issues in the Nuclear Energy Debate.*
- 8, Feb, 2006. Dept of Environment and Heritage – ‘Innovation For Sustainable Prosperity – Achieving A Natural Advantage of Nations.’ (Canberra, Australia) Michael Smith, on behalf of TNEP, was invited by the Secretary of the Department of Environment and Heritage to present TNEP’s 5 point action plan based on the publication The Natural Advantage of Nations.
- 17, August, 2004 - Nature and Society Forum, ‘Turning Barriers into Drivers for Sustainability’ (Canberra)
- 20 Nov 2003 Murdoch University – Institute for Sustainability and Technology Policy (ISTP). ‘Overview of The Natural Edge Project – History, Achievements and Goals.’ with Karlson Hargroves.
- 16, August, 2002 National Science Festival – ‘A Whole of Society Approach to Sustainable Development.’ Speakers TNEP’s Michael Smith and Karlson Hargroves, TNEP working group member Mia Kelly, Christal George, Dan McKinley and James Moody. At this event TNEP introduced its original whole of society approach to sustainable development concept and strategy.

**Boards and Committees:**

2006: Australian Council of Building Design Professions, BDP Environment Design Guide, Editorial Board TNEP Lead representative.

2006: Engineers Australia's Sustainability Committee, TNEP Lead representative.

2005/06: CSIRO ECOS: Towards A Sustainable Future Editorial Board, TNEP Lead representative.

2001-2: Australian Youth Representative of the National Steering Committee to form a National Council For Sustainable Development. Seventy countries have such an organisation,

2000 - 2002: National co-ordinator of the National Union of Students Sustainable Universities Campaign.

2000 - 2001: ANU Environmental Management and Planning Committee, ANU Green.

**Awards and Prizes:**

- (2005) Member of TNEP team awarded the Banksia Award for Environmental Leadership, Education and Training.
- (2005) Member of TNEP team awarded the 2005 Year of the Young Engineer Award, South Australian Division of The Institution of Engineers Australia.
- (2005) Member of TNEP team awarded a South Australian Engineering Excellence Award - Engineering Education & Skill Formation.
- (2005) Member of TNEP team that was one of three national finalists in the Australian Museum Eureka Awards in the Allen Strom Prize for Education in Sustainability
- (2001): Winner of the individual ANU Green Award
- (2001): Member of the teams who were recipients of the ANU Green awards for the "ACT Green Guide", and the greening of the "ANU Research School of Chemistry"

---

**Professional Services**

---

**Workshops, Events and Training:**

- 14, Dec, 2005. Professor Ian Lowe The Natural Edge Project secretariat and Australian Conservation Foundation co-organized Ian Lowe's 2005 televised National Australia Bank National Press Club Address on "*Is nuclear power part of Australia's global warming solutions?*"
- 18, March, 2006 Oxford University Emeritus Professor Norman Myers *Biodiversity Conservation Forum and Policy MasterClass*, Canberra. TNEP co-organised this event with CSIRO, Department of Environment and Heritage and Humane Society International.
- 7th, July, 2004 Students & Sustainability Conference, Melbourne. Workshop facilitated on *The Natural Advantage of Nations: From Pioneers to Systemic Change*.

**Facilitating International Keynote Tours:**

- 15 – 26<sup>th</sup> May, 2006. TNEP co-ordinated the *2006 Innovation Inspired by Nature Australian Tour* with Janine Benyus and Catherine Bragdon from the Biomimicry Guild. The Tour engaged 36 Tour Partners from business, government and the university sector throughout Brisbane, Townsville, Adelaide, Melbourne, Canberra and Sydney.
- 5-18 March 2006. Assisted with the Australian tour by Oxford Professor Norman Myers.
- 21 March – 6 April, 2005. TNEP co-ordinated the *2005 Sustainable Business Practice Australian Tour* with Hunter Lovins. The Tour was supported by 23 Tour Partners from business, government, professional bodies and university sector throughout Sydney, Brisbane, Byron-Ballina, Townsville, Alice Springs, Melbourne and Canberra.
- 27 March – 25 April, 2004. TNEP co-ordinated the *2004 Natural Advantage of Nations Tour* with Hunter Lovins. The Tour was supported by over 35 Tour Partners from business, government, professional bodies and university sector throughout New Zealand, Sydney, Brisbane, Adelaide, Melbourne, Perth and Canberra.
- 2004, 2005. Assisted in the 2004 and 2005 Australian tours by Hunter Lovins through helping with research and content for presentations and through the organizing of the Canberra based events including Hunter Lovins National Australia Bank National Press Club appearance in 2005.

**Work with Key Partners:****Education Partners**

- CSIRO Transformed Flagship Program. TNEP is partnering with Griffith University (Centre for Environmental Systems Research) and the Australian National University (Institute for Environment) to develop education and training material as part of the CSIRO Energy Transformed Flagship in 2006/07. The project will seek to deliver an effective toolkit for capacity-building engineers and other key technical professions, in the skill of finding cost-effective low-carbon energy approaches and energy efficiency options.
- Queensland University of Technology (QUT). TNEP has just completed a collaboration with the Faculty of Built Environment and Engineering at QUT to develop a Faculty-wide 'Introducing Sustainability' unit. TNEP assisted by facilitating preparatory workshops, delivering base lecture material and assisting in tutor training and support. The base unit material for the unit is based on the Introductory Module of the ESSP and the textbook for the unit is 'The Natural Advantage of Nations'.
- University of South Australia - Louis Laybourne Smith School of Architecture and Design. TNEP is working with UniSA on the development of coursework units for the Master of Sustainable Design drawing from and building on from the ESSP. The first two courses proposed are 'Sustainable Design Theory - Sustainability and Society' and 'Sustainable Design Theory - Sustainable Design Principles'.

- RMIT Master of Sustainable Practice. TNEP is working with RMIT on the development of coursework units for the Master of Sustainable Practice. Currently two units from the Introductory Module of the ESSP have been approved under the supervision of Assoc. Prof. Roger Hadgraft, School of Civil and Chemical Engineering. TNEP will be both offering these units in partnership with RMIT to private clients and groups and also to Students of RMIT as shortcourses.
- Sudanese Virtual Engineering Library. The objective of this project was to prepare and establish a website on 'Virtual Library on Engineering for Sustainable Development' as a pilot project. SudVEL now contains 1000 records in full text and 700 records in bibliographic databases. It provides access to engineering information in the industrial field, students, researchers and academic staff in all the Sudanese universities.
- Adelaide University. TNEP members Charlie Hargroves and Nick Palousis, both graduates of AU, have been accepted in 2006 as Senior Adjunct Lecturers in the Department of Civil Engineering.

### ***Practice Partners***

- Santos (Oil and Gas) TNEP is supporting our consulting associate, Dan Atkins of Sustainable Business Practices, to provide a range of services to Santos including; sustainability indicators selection, prioritisation and data collection; development of the 2005 Santos Sustainability Report and research to enhance the sustainability content of the Santos website.
- VicUrban (Urban Development) TNEP is working with VicUrban to assist in the development of a suite of Environmental and Urban Design Performance Measures and Indicators for Industrial and Business Park Developments. TNEP is collaborating with our partners Janis Birkeland (research) and Hatch (review) to develop the Indicators.
- HATCH (Minerals Processing) TNEP is working with Hatch to assist in the development of training material focused on sustainability critical literacy skills, relevant to the minerals processing industry. The training materials strongly align with the leading sustainability tools within Hatch.
- Queensland Government Environment Protection Agency – Sustainable Industries Division - ecoBiz Program. TNEP is working with the Sustainable Industries Division of the Queensland EPA to assist the division to further develop their capacity building programs and assist the division to embed sustainability thinking, methodologies and tools into the organisations behaviour and practice.
- Townsville City Council. TNEP has an ongoing relationship with TCC ranging from assisting with training and conferences to organising international keynote visits.
- Environs Australia. Environs Australia was formed in 1989 and is a network of members interested in promoting sustainable development through local action, primarily in the local government sector. TNEP worked with Environs for over 2 years to assist them to develop a database of best practice in local government sustainability.
- Griffith – Dell E-Waste Research and Education Grant. TNEP is contributing to research content on emerging trends and activities relating to E-Waste, then to develop educational material for university students in the form of an education module, in collaboration with the Griffith Sustainable Living Challenge team who are developing a high school education module.
- Sustainable Living Challenge. The Natural Edge Project is assisting in the development of teacher capacity building material and the provision of base teaching resources to expand teacher's curriculum toolkit on sustainability issues aligned with the Sustainable Living Challenge (hosted by the University of New South Wales).

**Referees:**

---

**TNEP Colleague:** Mr Charlie Hargroves

Project Coordinator, The Natural Edge Project, hosted by the Institution of Engineers Australia.

P: 0407 071 729 E: [charlie@naturaledgeproject.net](mailto:charlie@naturaledgeproject.net)**Australian National University:** Professor Stephen Dovers

Senior Fellow Centre for Resource and Environmental Studies, ANU

P: +61 2 61250669 E: [dovers@cres.anu.edu.au](mailto:dovers@cres.anu.edu.au)**Professional:** Mr Martin Dwyer

Engineering Practice Director Institution of Engineers Australia.

P: Tel: +61 2 6270 6555 E: [mdwyer@ieaust.org.au](mailto:mdwyer@ieaust.org.au)**Partnership Colleague:** Philip Toyne

Director EcoFutures

P: +61 2 6236 8437