



# THE NATURAL EDGE PROJECT

## UPDATE 13

24th of June, 2005



### Greetings to the supporters and teams of The Natural Edge Project

The six months since our last update have been an amazing and very busy time for The Natural Edge Project secretariat. Taking the opportunity afforded by the fact that the book was in press our team focused on developing training modules, building the book's online companion, working to assist partners such as Natural Capitalism Inc on projects such as the Opportunities Report for the Chicago Climate Exchange and developing the ideas and content for the next round of TNEP initiatives. The team has already started on developing ideas and content for the next book *The Natural Advantage of Nations Volume II* and the *Sustainable Business Practice Program*. Significant progress has been made developing content as part of the exciting Level 1 and 2 modules for the *Engineering Sustainable Solutions Program – Critical Literacies Portfolio*. The team is also undertaking the national and international review of the introductory module, the one that recently won the Banksia Award along with the book.

The TNEP secretariat is now making a determined transition into training and education in partnership with our teams and especially our co-authors. We feel that if we are to genuinely make a contribution we need to go out into the world and offer trainings in order to provide the opportunity for us to again learn from those who we interact with and really hear all sides of the story, and share what we have learned. This has been a time of expansion for the project. At the invitation of Hunter Lovins and Bernard Amadei, Charlie headed to Boulder Colorado to work with them as a visiting scholar to the University of Colorado, Boulder. In the last year much has been accomplished with them. This is covered in the update. The secretariat members in Australia have enjoyed managing communications with all Australian partners and hearing your ideas for the project. Keep them coming.

Thank you all for your ongoing support of us and our team. We are truly honoured by your support and take the responsibility to deliver tangible and rigorous results to you very seriously. A special thank you must go the Institution of Engineers Australia and in particular Martin Dwyer and Julie Armstrong, whose ongoing faith in our team has provided crucial administrative support, mentoring and guidance to our team.

In Partnership

Karlson 'Charlie' Hargroves  
Project Coordinator

Michael Smith  
Content Coordinator

Cheryl Paten  
Education Coordinator

Nick Palousis  
Operations Coordinator

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- *Media: 2005 Banksia Award for Environmental Leadership, Education and Training*
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Secretariat Member and Working Group Updates

The Nuclear Energy Debate – TNEP Article

Co-Authors and Supporters Publications Update

Publication Briefing, Reviews and Endorsements for The Natural Advantage of Nations (Vol. I)

## Summary of new material on [www.naturaledgeproject.net](http://www.naturaledgeproject.net)

### The Natural Advantage of Nations

- Second Volume of The Natural Advantage of Nations: Exceeding the Millennium Goals

### Engineering Sustainable Solutions Program (ESSP)

- DEH to support first module in the ESSP – Whole Systems Portfolio

### TNEP Keynote Series

- An Evening with Alan AtKisson (London), An Evening with Mick Pearce (Brisbane)

### Events and Workshops

- Sustainability Intensive with Alan AtKisson (November 2004, London) TNEP accepted as a Australian/New Zealand Associate for AtKisson Inc.
- Chicago Manufacturing Centre (November 2004, Chicago)

### Conferences and Papers

- International Dialogue on 'Providing Leadership for Sustainable Development', (April 2005, Beijing)
- National Business Leaders Forum on Sustainable Development (April 2005, Melbourne)
- Future Summit 2005. Creating a Better World, (Sydney)

### TNEP Training Sessions

- Business and Ethics, Charlie Hargroves guest lecturer (June 2005, University of Colorado)
- Natural Capitalism for Engineers: Critical Literacies for Engineers in Sustainability, Charlie Hargroves co-instructor with Hunter Lovins (May 2005, University of Colorado)

### Public Profile

- Hunter Lovins at the National Press Club.

### Press Releases

- Young Australians recognised as Environmental Leaders

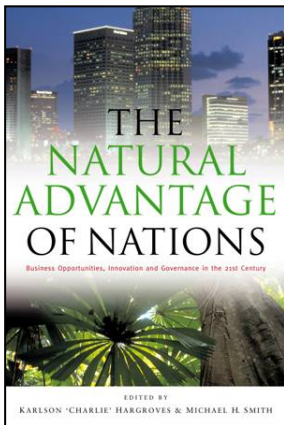
### TNEP In Print (and on Radio)

- The Independent Weekly - South Australia (5 June 2005)
- ABC Radio National (18<sup>th</sup> of June)

Past updates can be downloaded from the TNEP web site: [www.naturaledgeproject.net/ProjectUpdates.aspx](http://www.naturaledgeproject.net/ProjectUpdates.aspx)

## The Natural Advantage of Nations – Update and Thankyou

TNEP is proud to report that on 4 April, former Governor General Sir Ninian Stephen launched *The Natural Advantage of Nations* (NAON) to a full house of business, government and civil society leaders at the 'National Business Leader's Forum for Sustainable Development' in Melbourne. We wish to thank Sir Ninian Stephen for his kind words and Molly Harris Olson (pictured with Alan Tate and our team at the event) and the board of the National Business Leaders Forum for their support of the book. We wish to thank them for including a copy of the book as part of registration and thus ensure that the book has reached key decision makers in Australia. The Business Leaders Forum was held in Melbourne and it was a great honour to share the book's official national launch with Sir Ninian Stephen and Lady Val Stephen, Engineers Australia Director Martin Dwyer and TNEP's Melbourne based partners, co-authors, and working group member such as Caroline Bayliss, Professor Chris Ryan, Adjunct Professor Alan Pears and RMIT PhD Scholar Jenni Goricanec, along with our family.



Despite being out globally in hardback for only a few months, the first print run of *The Natural Advantage of Nations* has already sold out and the second print run is on its way. Currently the book is just behind *Factor 4* and *Natural Capitalism* as the 6<sup>th</sup> bestseller of Earthscan / James & James publishing. (Earthscan / James & James publish roughly 4000 titles). This excellent result is partly due to the fact that the book has received very positive reviews from all who have seen it, even the Library at the Harvard Business School. It is also partly due to the tremendous support from our publishers Earthscan / James & James, who chose *The Natural Advantage of Nations* as one of three books to be featured inside the back cover of the new publication Limits to Growth-The 30 Year Update. Earthscan/James & James the largest publisher of sustainability books in the world, have marketed the book stating that "*coupled with a companion website, the book *The Natural**

*Advantage of Nations* is nothing less than the most authoritative and comprehensive guide to building the new sustainable economy." Since the last TNEP update, TNEP secretariat has significantly updated *The Natural Advantage of Nations* online companion. TNEP secretariat asked co-authors to send in any papers that they wished featured on the site, adding a further dimension to the book. The success of the book is also partly due to the generous support and mentoring of leading environmentalists like Hunter Lovins who promoted the book on her recent tour of Australia. TNEP wishes to thank Hunter Lovins and all the organisations involved with the tour for their generosity and support that made the 2005 tour such a success. For instance we wish to thank the National Press Club of Australia for making the recent ABC televised National Press Club Telstra Address '*The Natural Advantage of Nations: Australia's Opportunity for Sustainability*' by Hunter Lovins on 6 April such a success. We wish to thank all TNEP Canberra based partners and supporters who came out and supported this event in numbers when it looked like it might not happen. It was truly an inspiring occasion. At the National Press Club, Hunter spoke eloquently of how, from her two tours of Australia, she is so impressed by what she has seen that she has no doubt that Australia could be the world's "Sustainability Superpower".

Thanks also must go to all the other media outlets who have so generously reviewed the book. TNEP has set up a new "Media" web site collating this coverage. There are many highlights including the coverage in the Independent Weekly newspaper and the interview by Alexandra Da Blas on ABC's Radio National's Saturday morning breakfast program, June 18. This radio interview can be listened to off the ABC site for another 4 weeks. (Listen Real Media) Finally we wish to thank the book's Australian distributors Warren Broom at DA Information Services and TNEP's Distributor, Robert Barber at EA Books and, and US distributors Stylus Publishing for their great job. For further promotional and publicity material see the end of this update.

## Media: 2005 Banksia Award for Environmental Leadership, Education and Training

TNEP is proud to announce that the Banksia Environmental Foundation has awarded our flagship publication *'The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century'* and the supporting training program for engineers, the *'Engineering Sustainable Solutions Program: Critical Literacies for Engineers in Sustainable Development'* a Banksia Award (Category) for **Environmental Leadership, Education and Training** for 2005. TNEP has many Partners and Supporters to thank for making these initiatives a reality, in particular our Foundation Partners, Engineers Australia, CSIRO, RMIT Global Sustainability, Izilla (for our website), The Barton Group and Environment Business Australia. This award is for all our supporters for having the courage to mentor our team, provide both financial and in-kind support and most importantly to support a group of young engineers and scientists with big ideas. Thank you again to all our supporters (including family and friends) who have lived through this experience with us! We are looking forward to the next steps in the journey.



TNEP would like to especially thank The Institution of Engineers Australia's Environmental College for providing the grant to develop the *'Engineering Sustainable Solutions Program - Introductory Module'* and providing expert peer review and mentoring throughout the process. A special thank you to Martin Dwyer, Tim Macoun, Doug Jones, Terrence Jeyaretnam, Julie Armstrong and the review panel Trevor Daniell, Thomas Brinsmead and David Hood for their continued support in developing further material and training hereon.

TNEP is currently working with Engineers Australia (through the Environmental Engineering College and the Society for Sustainability and Environmental Engineers) and the Natural Sciences sector of UNESCO to deliver Level 1 and 2 of the program and has recently received a grant from the Department of Environment and Heritage to develop parts of Level 3. The next training program TNEP will develop will be the *'Sustainable Business Practice Program'* based on the Sustainability Helix as described in Chapter 10 of *'The Natural Advantage of Nations'*.

Those of you familiar with the development of the Engineering Sustainable Solutions – Critical Literacies Portfolio (ESSP-CLP) will remember that we have been trialling the introductory module with a number of higher education institutions around the country. The following universities are thanked for their current involvement in the trial of all or part of the module: Australian National University, Central TAFE WA, Central Queensland University, Griffith University, Murdoch University, Queensland University of Technology, University of Adelaide, University of Ballarat, University of Melbourne, University of New South Wales, University of Queensland, University of South Australia, University of Southern Queensland, University of Western Australia, and Swinbourne University. The School of Environmental Engineering within Griffith University is thanked for its support in also undertaking the pilot trial of the module with its first year engineering students in 2004. In addition the full module was delivered to a Masters Class at the University of Colorado, Boulder recently in a 3 week intensive by Charlie Hargroves and Hunter Lovins. Findings of the Semester 1 trial will be presented at the EES 2005 Conference in Sydney (18-19 July). In brief, the ESSP Introductory Module comprises 6 one-hour lecture equivalent units and a trainers guide. All 6 units may be taught as the full module, or 1 or more of the units may be selected according to the needs of the students. If you or your faculty would like to be involved in this initiative, please contact Cheryl. All those participating in trials will be recognised in future work associated with the module. Once the trial is complete, TNEP will offer a 'License and Support' agreement through nominal purchase/licensing arrangements.



**TNEP Members Cheryl, Nick and Charlie explaining the ESSP to Earthscan in London.**

**Project Initiatives: [The Natural Advantage of Nations \(Volume II\)](#)**

Following on from our recent publication, 'The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century', TNEP proposes to develop an informative and practical second volume entitled 'The Natural Advantage of Nations (Volume II) – Exceeding the Millennium Goals' and an accompanying online companion database, to highlight pioneers and future directions for the Millennium Development Goals and sustainability globally.

The work will bring together leading work from a range of leaders in the field to examine key development and sustainability issues and ways to effectively move forward. The central goals will be to demonstrate how:

- (1) through the latest sustainable development strategies it is possible to exceed the millennium development goals and ensure that they have a lasting legacy;
- (2) the major threats to the millennium goals namely conflict, world economic recession, corruption, lack of co-ordination and effectiveness of current aid programs can be overcome;
- (3) successful strategies are helping tsunami affected, post conflict states like Afghanistan, developing and emerging economies. The book aims to overview and learn from the latest best frameworks, outcomes and results from UN/Aid Sustainable Livelihood programs; and
- (4) such technologies and approaches in sustainable development are also key to unlocking new sources of economic growth in OECD countries.

Ending world poverty and reducing global inequality by definition requires a global effort. This work will have broad application because the way in which rapidly emerging economies like India and China approach poverty reduction, development and economic growth, will have significant global implications. China already imports more resources of every commodity than any country except the US in terms of oil.

The strength of the first book The Natural Advantage of Nations is that the rigorous frameworks can apply to any country. The Natural Advantage of Nations (Volume II) will build on the first publication, so that while the focus of the case studies will be developing and emerging economies, the frameworks, principles and strategies will still be relevant for OECD countries.

The publication will seek to;

- (1) develop an effective and simple publication to help businesses, government and civil society see their potential to assist to reduce poverty and create opportunity globally in post conflict states, developing and emerging economies globally, and
- (2) provide a complementary web site containing in-depth information to support the book and to link readers to the achievements of businesses, engineers, universities, in helping to achieve poverty reduction globally.

Australia is currently one of a handful of countries that has not formally committed to the Millennium Goals. There is a great need to raise awareness in Australia of this important global initiative and to demonstrate that supporting it is worth Australia's commitment and effort. Recently in Australia there has been a significant outpouring of support for victims of the Tsunami. Australia is a generous country however over the last couple of decades there has been a growing level of cynicism about:

- The level of corruption in the developing world and its perverse and insidious effect on poverty reduction efforts, and
- the amount of money that aid organisations use for their own operations reducing the amount of aid money actually reaching those who need it most, the poor.

This book will highlight where in the world these another other barriers to poverty reduction have succeeded, and the lessons learnt.

Forewords, Acknowledgements and Endorsements

Preface: Insurmountable Opportunities: Inspiring precedents of change

Introduction: Possible Scenario's for the Future: UN Millennium Assessment

#### SECTION 1: THE NEED FOR A NEW PARADIGM

Chapter 1: The Millennium Goals: It is possible to end poverty?

Chapter 2: Risks of Inaction: Possible Scenarios for the Future

Chapter 3: Asking The Right Questions

Chapter 4: New Framework for International Development

Chapter 5: Thinking Locally, Acting Globally

#### SECTION 2: SEIZING WINDOWS OF OPPORTUNITY THROUGH BUILDING A PRIVATE SECTOR

Chapter 6: How at the firm level real growth can be achieved

Chapter 7: Opportunities through technology transfer

Chapter 8: Rebuilding Tsunami Affected Countries

Chapter 9: Post Conflict States

Chapter 10: Discussion of tool

#### SECTION 3: ROLE OF GOVERNMENT

Chapter 11: How do we prevent the conflicts of the future today

Chapter 12: Sustaining quality economic growth

Chapter 13: Increasing Prosperity and Jobs whilst saving the environment

Chapter 14: Success stories of overcoming corruption.

Chapter 15: Opportunities for government to assist - technology transfer

#### SECTION 4: IMPORTANCE OF SUSTAINABLE CITIES AND REGIONS

Chapter 16: Rapid Urbanisation: New Challenges and Opportunities

Chapter 17: Ensuring national and local synergies

Chapter 18: Meeting global energy and water needs

Chapter 19: Meeting global resource needs: Closing the Loop

Chapter 20: Minerals and Metal

Chapter 21: Greening of Industry and Manufacturing

Chapter 22: Sustainable Agriculture (these relate to regions)

Chapter 23: Tragedy of the Commons Global Fisheries

Chapter 24: Education and Capacity Building

#### SECTION 5: A NEW THEORY OF GLOBAL GOVERNANCE IN A TRIPARTITE WORLD

Chapter 25: The importance of nations supporting international efforts

Chapter 26: Environment and Trade

Chapter 27: Models for Global Institutions to incorporate ESD

**Events and Training: [Sustainability Intensive in London with Alan AtKisson](#)**



The London Tour was an amazing success, a unique opportunity to bring together a collaboration of world renowned professionals in sustainability in a Workshop Environment - Hunter Lovins from Natural Capitalism Solutions, Alan AtKisson from AtKisson Inc., and Junko Edihiro from Japan for Sustainability and three of the TNEP team. The “London Intensive” Workshop kicked off with a well received presentation by Hunter Lovins to students, staff and professionals at London’s prestigious Imperial College, hosted by Andrew Blaza.

The following 2 day Workshop, facilitated under the leadership of Alan AtKisson, applied AtKisson Inc.’s ISIS (Indicators, Systems, Innovation, Strategy) and Pyramid processes with a hypothetical scenario – the initiation of an International Society of Sustainability Professionals (ISSP).

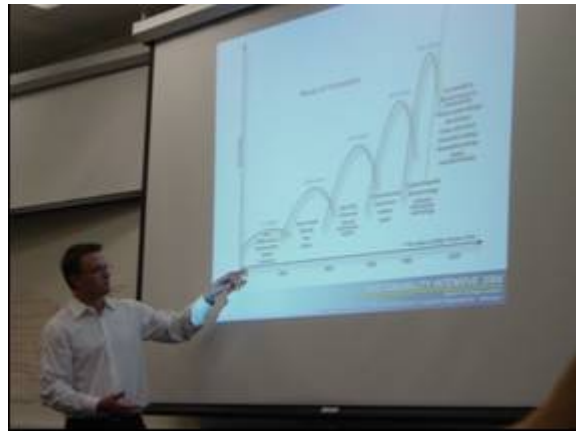
Throughout the workshop, key note presentations were given by Alan, Hunter, Junko and TNEP’s Charlie Hargroves, while Cheryl and Nick from TNEP provided operational support throughout the Workshop sessions. The Workshop attracted a diverse range of international participants – professionals from private, public and non-government organisations, academics and students from Australia, Canada, Germany, Greece, Japan, Mexico, Netherlands, Spain, Sweden, UK and the US. Participants were actively engaged throughout the workshop, learning a great deal from the sessions as well as from each other. Upon completion of the Workshop, the group unanimously agreed to initiate an ISSP to continue dialogue amongst each other and assist participants with professional development. The TNEP team would sincerely like to thank Alan AtKisson, Hunter Lovins, and Junko Edihiro for their leadership in making the event so successful. Specific mention should be made to Andrew Blaza from Imperial College, who significantly assisted Workshop preparations and facilitation throughout the event. Finally, the participants of the workshop were a sharp, fantastic, and cohesive group, and TNEP sincerely thanks them for their contribution.



The participants of the London Intensive at the closing ceremony.



Alan briefing the workshop participants following Hunter's keynote presentation to Imperial College.



Charlie presenting the 'waves of innovation' diagram as part of his presentation to the workshop on Strategy.



Charlie, Nick Junko, Alan, Hunter, Cheryl and Andrew



Alan working over the breakout groups worksheets.



The TNEP team hard at work in the background!

**Training Programs: [Sustainable Business Practice Program](#) (New Initiative)**

TNEP is preparing a training module to support Section 2 of 'The Natural Advantage of Nations' and provide a holistic operational framework for assisting organisations to make a profitable transition towards sustainable business practice, as described in Chapter 10. The training program book is to be developed as a social profit venture and all revenue raised as grants and donations or from sales will be used TNEP to invest in the development of further initiatives in wide collaboration.

The training programs central functions will be (1) to present an operational structure, The Sustainability Helix, for organisations to strategically make the transition towards sustainability (2) to inspire and show business that taking integrated approaches allow genuine progress and (3) to enable education and capacity building of business students, practitioners, managers, and professionals in order to help them make substantial progress toward sustainable business practice. TNEP will bring in a range of experts in many fields relevant to business practice to demonstrate new and innovative ways to develop products and services, build core business value and achieve a natural competitive advantage.

Although the focus of the training program will be on business development, it will also highlight potential policy implications and identify opportunities for government to underpin and assist business in moving towards sustainability. Hence this training program will be a primer for businesses, governments and individuals alike to implement the best sustainable business practices.

The focus of the publication is to present a consensus on how best to guide organisations through the challenge of actually implementing sustainable business practice and delivering results to both stakeholders and shareholders.

**Partners and Alliances: [TNEP awarded DEH Grant for Environmental Education](#)**

The Natural Edge Project was recently awarded a grant from the Federal Department of Environment and Heritage (DEH) under the [Environmental Education Grants Program](#) to begin development of the [Engineering Sustainable Solutions Program: Whole System Portfolio](#) (ESSP-WSP). The project will develop practical training material focused on sustainable engineering solutions through *Whole System Design* (WSD), which is defined in *Natural Capitalism* as "the process through which the inter-connections between sub-systems and systems are actively considered, and solutions are sought that addresses multiple problems via one and the same solution." This definition is guided by the principles further stated as: 1) The whole system should be optimised. 2) All measurable benefits should be counted. 3) The right steps should be taken at the right time and in the right sequence.

Whole Systems Design approaches for buildings, cars, cities, industry plants, motors, farming and agriculture, lighting systems, are increasingly being seen as the key to achieving the most cost effective ways to reduce negative environmental impacts. This was also one of the conclusions of the 5 year Australian Federal Government's Energy Efficiency Best Practice (EEBP) program run by the Department of Industry, Tourism and Resources. Take for instance motor systems that are used in almost every industry. The EEBP found that a whole-of-system approach to optimising industrial motor driven applications, when coupled with best practice motor management, can deliver savings of between 30-60 percent.

The WSP will consist of a suite of technical, calculations-based lessons on applying Whole System Design to engineering problems. Case studies of best practice exhibiting whole system design will be investigated under each of the Engineering Topics discussed in the Critical Literacies Program: Profitable Greenhouse Solutions, Greening of Industry, Greening the Built Environment, Sustainable Urban Transport, Water: Nature's Gold and Zero Waste: Value Loops. The WSP builds on the previous work conducted with the Rocky Mountain Institute (RMI) in the development of case studies for RMI's Factor 10 Engineering (10XE) Design Guide. Amory Lovins has expressed keen interest on working with TNEP on the development of the WSP – we are looking forward to working with Amory and the RMI team!

**TNEP Teams: [Sir Ninian Stephen accepts invitation to be a TNEP Patron](#)**



Born in the United Kingdom on the 15th June 1923. Educated in the United Kingdom, Switzerland and Australia. War service 1941-1946 Australian Army. Admitted to practise in Victoria as a Barrister and Solicitor in 1949 after studies at University of Melbourne; LL.B. (Melbourne) 1950. Practised as a Solicitor, 1949-52, and from 1952 as a barrister and member of the Victorian Bar practising principally in commercial, equity, taxation and constitutional areas; appointed Queen's Counsel in 1966. Appointed to the Victorian Supreme Court bench in 1970 and in March 1972 appointed a Justice of the High Court of Australia. Sworn of the Privy Council of the United Kingdom in 1979 and sat as a member of its Judicial Committee. Retired from the High Court of Australia in 1982 when senior puisne justice to take up appointment as Governor-General of Australia, which office he held until 1989.

Appointed Australia's first Special Ambassador for the Environment 1989-1992; Chairman of various Australian governmental and other bodies including the Constitutional Centenary Foundation, the Antarctic Foundation, and was Chairman of the National Library of Australia for six years and was Chairman of the Australian Banking Industry Ombudsman Council for four years. Appointed in 1992 by the United Kingdom and Republic of Ireland Governments as Chairman of Strand Two of the Talks on Northern Ireland. Elected as a Judge of the United Nations International Criminal Tribunal for the former Yugoslavia 1993-1997. Appointed in 1994 Commonwealth of Nations Special Envoy to Bangladesh. Chairman of the United Nations Expert Group on Cambodia 1998-1999. In February 2005 The International Labour Organisation, or ILO, sent a team lead by Sir Ninian Stephen to Rangoon on a four-day official visit to evaluate the military junta's commitment to stopping forced labour. Currently Patron of many significant Australian organisations including the Australian Davos Connection, The Asialink Centre at Melbourne University, The Bob Hawke Prime Minister Centre, Constitutional Centenary Foundation, Indigenous Enterprise Partnerships and Sane Australia.

The Rt. Hon Sir Ninian Stephen (Former Governor-General 1982-89) **launches The Natural Advantage of Nations** in Melbourne, at the National Business Leaders Forum on Sustainable Development with (from left) the team from TNEP, Nick Palousis, Michael H. Smith, Karlson 'Charlie' Hargroves and Cheryl Paten.



*"I feel very privileged to be here launching 'The Natural Advantage of Nations'. Like this forum this book is all about innovation, solutions, competitiveness and profitability and the bringing together to this end, as does this forum, leaders from business, government, academia and non-government organisations... It has as its thesis the pursuit of sustainable development leading to economic growth and with it increased employment while solving some of our social and environmental problems. It presents a bold vision of an ecologically sustainable future, to be attained by building on the lessons of the theory of competitive advantage, proving a synthesis of what is new in the fields of sustainability, economics and innovation in business and governance. It covers significant developments in the day to day practice of sustainable development by all the organs of our society and of other societies from around the world."*

*"What I found in reading the book was how the pursuit of sustainable development whether on a small scale in domestic organisations or on a national or international scale is no walk into the unknown. In a host of areas solutions already exist and are being implemented around the world... Our two editors, Charlie Hargroves and Michael Smith, and the other members of The Natural Edge Project Secretariat, Cheryl Paten and Nick Palousis, have been extraordinary helped in what has been a mammoth task, you have only to glance through the book to appreciate its extent, helped by so many who are named and thanked in the detailed "acknowledgement" section of the book."*

**Secretariat Update: [Charlie Hargroves – Project Coordinator](#)**



The last 12 months have been an amazing experience. Working under the wing of one of the worlds leading sustainable development experts, Hunter Lovins, has been truly life changing. Hunter is, as we say in Australia, 'True Blue'... Her passion for changing the world is contagious and her pragmatic approach to achieve this is inspiring. Whilst based at the University of Colorado I have had the pleasure to enjoy a work experience placement with one of the world's true treasures and I only hope that I can use this teaching to help her cause, saving the planet for our future generations.

Hunter gives of her time freely and with full enthusiasm, I often saw her take time out to talk to a student that just rang the office, spending an hour to explain the concepts and revelling in the opportunity to influence an eager mind. During my time with Hunter and her team I was engaged in a wide range of activities and projects from observing Hunter teaching MBA students at Presidio World College to running training sessions with small manufactures and Chicago.

Some of the Highlights of working with Hunter have been

- Working with NCI partners the Chicago Manufacturing Centre to assist in the development of the GreenPlants Initiative to assist small to medium sized manufactures in Chicago (a sector of over 12,000 companies) to implement sustainable business practices. TNEP sent Nick Palousis over to join the team on this project for 3 months in late 2004 which was a great opportunity to also put to the test what we had learned in writing NAON.
- Working to assist the development of the Management, Operations and Case Study Reports for the Chicago Climate Exchange and the European Climate Exchange Opportunities Report. Hunter brought Mike Smith over for 8 weeks to help us and this was a great experience.
- Working with the team from the OTF Group to support Hunter to assist them to consider sustainable development in their activities to develop industries in the post conflict economy in Afghanistan.
- Working with Hunter and the TNEP team to support TNEP mentor Alan AtKisson to deliver a Sustainability Intensive in London at Imperial College with Junko Edihiro.
- Understanding the realities of building a business in sustainable development consulting, by both managing and building the consulting team and building relations with clients an partners.
- Bringing together TNEP's ESSP with the work of Hunter and her team to co-instruct the intensive 14 day Maymester course 'Natural Capitalism for Engineers: Critical literacies for Engineers in Sustainable Development' at the University of Colorado, Boulder.

Whilst in the US, the rest of the team has been busily working away as they say in their reports to follow. The main projects for 2005 have been the Engineering Sustainable Solutions Program, building a training program for The Natural Advantage of Nations (NAON), building the brief for the second volume of The Natural Advantage of Nations – Exceeding the Millennium Goals. Some of the highlights of TNEP's work of for me have been:

- Developing with the team the project brief for the second volume of The Natural Advantage of Nations, namely *Natural Advantage of Nations (Volume II) - Exceeding the Millennium Goals*.
- Building the website and online companion for NAON. The site now contains a range of supporting information to enhance the material covered in NAON.
- Working with the team to develop the six modules that will form Level 1 and 2 of the Engineering Sustainable Solutions Program in partnership with UNESCO and Engineers Australia.

**Secretariat Update: [Michael Smith – Content Coordinator](#)**



Mike has continued to work part time as the Content Co-ordinator for TNEP whilst completing his PhD and continues to be responsible for the quality of TNEP's content, research and material for public release. In light of the rapidly growing array of projects and work currently being undertaken by TNEP, ANU has agreed for Michael to change his PhD topic from 'theoretical chemistry' to 'sustainable development'. Dr Steve Dovers from CRES (NAON Co-Author), ANU kindly agreed to become his co-supervisor with Professor Michael Collins. Dr Colin Butler, Dr Brendan Mackey and Dr Janis Birkeland have also kindly joined his PhD panel with Dr Roger Burritt from ANU and Dr Barney Foran and Dr Steve Hatfield-Dodds from CSIRO also offering to informally advise.

Michael and our team wish to thank ANU and especially his Chemistry PhD Supervisor Professor Michael Collins for supporting this change. Michael's thesis now builds on from and will provide technical papers that provide additional support to the thesis presented in *The Natural Advantage of Nations* and will underpin our new initiative to develop training material to support the business related chapters of Section 2 of NAON – [Sustainable Business Practice Program](#). His thesis now covers the latest insights in the key sustainability debates such as whether there are inevitably trade offs for nations seeking both economic growth, business competitiveness, jobs and sustainability?

Some of the highlights of TNEP's work of which Michael has been a part since the last update have been:

- Addressing final queries from Earthscan regarding NAON and assisting to build the companion web site for NAON which now has over 500 downloadable references; ([www.thenaturaladvantage.info](http://www.thenaturaladvantage.info))
- Developing material for the [Sustainable Business Practice Program](#). Michael observed Dr Sasha Courville's semester long ANU Masters course "Greening of Industry" and has worked closely with Sasha on this project.
- Working with Charlie Hargroves (while he was on secondment in America) and [Natural Capitalism Inc](#) to assist the development of the Management, Operations and Case Study reports for the Chicago Climate Exchange and the European Climate Exchange Opportunities Report over an 8 week period.
- Developing with the team the project brief for the second volume of The Natural Advantage of Nations, namely *The Natural Advantage of Nations (Volume II) - Exceeding the Millennium Goals*.
- Developing with Philip Sutton, Director of Green Innovations a major synthesis paper on economic growth and sustainability. Philip Sutton has presented this at the 5<sup>th</sup> Fifth Ministerial Conference on Environment and Development in Asia and Pacific which focused on whether it was possible to achieve "Green Growth?"
- Coordinating [TNEP contributions to the CSIRO ECOS magazine](#) as representative on the editorial board.
- Plus a range of tasks such as attending significant conferences to promote TNEP's work such as at the 2005 Australian Davos Connection's "Future Summit 2005".
- Assisting TNEP secretariat with presentations, papers such as a recent highlight being assisting Cheryl Paten in her presentation to Bovis Lend Lease in Canberra. Michael Smith will be representing TNEP and presenting a paper at the Environmental Engineering Societies 2005 Conference "Creating Sustainable Engineering Solutions".

**Secretariat Update: [Cheryl Paten – Education Coordinator](#)**



For those of you new to the TNEP story, I am a lecturer in the School of Environmental Engineering, Griffith University (Queensland, Australia), where I am working to further embed sustainability principles and practices into the curriculum. Through formal collaboration with the University, I am also engaged as a TNEP Secretariat member. The last 12 months for me (in relation to my TNEP commitments) has been primarily focused on creating educational material, training, and lecturing. Highlights of my year have included the following:

Collaborative Australian Keynote Visits

Given the synergies between The Australian Green Development Forum (AGDF), the Royal Australian Institute of Architects (RAIA) and TNEP, we collaborated to bring [Janis Birkeland](#) (Co-Author, Chapter 18 *The Natural Advantage of Nations*) to Brisbane in September 2004, and [Mick Pearce](#) in June 2005. We look forward to continuing this process of sharing knowledge among the sustainability community in South East Queensland and Nationally.

Engineering Sustainable Solutions – Critical Literacies for Engineers Portfolio (ESSP-CLEP)

- *Showcasing the Introductory Module* - Together with the Environmental Engineering College, I presented the Introductory Module of [ESSP-CLP](#) to a workshop at the 2004 Australian Association for Engineering Education (AAEE) conference in September 2004. I subsequently presented a paper on the material on behalf of TNEP to the Engineering Education for Sustainable Development conference in Barcelona, October 2004. The [paper was accepted](#) for a special edition of the International Journal in Education for Sustainable Development, soon to be published.
- *Griffith Trial* - Working with the ESSP Introductory module, I built on the [pilot trial in 2004](#), to deliver the Introductory Module to first and second year engineers within the School of Environmental Engineering, Griffith University. This first hand experience in using the material has helped the TNEP team to fine-tune the material.
- *National Trial & International Pilot Trial* - Subsequent to the AAEE workshop in September 2004, Nick and I have been overseeing the national trial of the module in partnership with Engineers Australia, thanks to David Hood and Tim Macoun, with engineering schools in 14 universities around the country. The module trial has been documented in the Environmental Engineering College newsletter "Sustainability in Environmental Education & Knowledge" (SEEK). Results are currently being compiled. Internationally, I am also working with several universities who are undertaking a pilot trial of the module, to see how international differences in the education systems might affect the preferred layout and structure of such material.

Accelerator Toolkit Training

- *Japan Trip: July 2004* – I had the fortune to tour with Alan AtKisson on his trip to Japan in July 2004, to observe him using parts of the Accelerator toolkit, and to seek out networking building opportunities for TNEP. As I have a 'past life' in Japan, I also took the opportunity to take some time out and visit my host family and friends in the north of the island (in my own time of course! ;).
- *London Intensive: September 2004* - On the back of my presentation to the EESD conference in Barcelona, I met up with the TNEP team in London to help deliver a [Sustainability Intensive](#) with Alan AtKisson and Hunter Lovins. This was also an opportunity to see the Pyramid process in action.
- *Melbourne Workshop: February 2005*- During [Alan's visit to Melbourne](#) in February, I helped to provide team support for a day-long sustainability intensive workshop at RMIT.

**Secretariat Update: [Nick Palousis – Operations Coordinator](#)**

chance to learn!

A key highlight in my personal and professional development over the last 9 months was joining TNEP's Charlie Hargroves in the US from September – December of 2004. Based in Boulder, Colorado, I had the most amazing opportunity to work with world-renowned sustainability expert Hunter Lovins and her team at Natural Capitalism Inc. A majority of my time was spent on various project initiatives and learning from Hunter's amazing breadth and depth of knowledge of all things sustainable. These key learning experiences manifested themselves in our work conducted with the Chicago Manufacturing Centre's GreenPlants Program, in delivering the Sustainability Helix to manufacturers in the Chicago area. Working with Hunter and her team has been the most boundary-pushing career experience of my life to date – my most sincere thanks to Hunter for the

Besides sampling the local food and learning to ride horses (with self-taught lessons in how to fall off them), I also had the opportunity to meet Bernard Amadei from Engineers without Borders and Janine Benyus from the Biomimicry Guild – both remarkable people and world-class professionals. Being in the US was an extremely worthwhile experience – the culture shock in an unknown environment definitely stimulates out-of-the-box thinking!

On my return flight to Australia I briefly visited Germany and Dr. Raimund Bleischwitz at the Wuppertal Institute. We discussed potential partnership opportunities between the Wuppertal Institute and TNEP over fantastic German cuisine. We thank Raimund for his kind hospitality and look forward to working with the Wuppertal Institute in the future. Finally, before returning home, I visited Professor Masayoshi Takahashi and Professor Gen-Ichi Nakamura from the Japan Strategic Management Society (JSMS) in Tokyo, Japan. TNEP is engaging in exciting work, synergizing the work of these two management experts with our work on Sustainable Business Practice. The result will be a paper bringing these approaches together over the next 6 months.

#### Hunter Lovins 2005 Australian Tour

Hunter Lovins embarked on yet another successful [tour of Australia](#) earlier this year from 21 March – 6 April this year. Chaperoned by TNEP's Charlie Hargroves, Hunter presented to a range of public and private organisations, universities, research institutions, NGOs and local communities throughout New South Wales, Victoria, ACT, Queensland and the Northern Territory. The tour culminating with keynote address at the 6<sup>th</sup> Annual Business Leaders Forum on Sustainable Development (Melbourne) and the [National Press Club's Telstra Address](#) (Canberra). As Tour Logistics Coordinator my deepest thanks goes to all partners involved in engaging Hunter for one or more sessions during her time in Australia. And of course, great work Hunter and Charlie!

#### Engineering Sustainable Solutions Program – Critical Literacies Program (CLP)

The CLP is supported by UNESCO, Engineers Australia and the Environmental Engineering Society. This is an extremely exciting and challenging initiative – condensing an immense body of knowledge and empiricism of sustainable engineering solutions into the critical information required by engineering students and professionals to build the momentum by the profession to tackle society's greatest challenges. The CLP will bring in the work of key international experts into a concise and flexible suite of learning modules, for incorporation into the existing university curriculum or through professional development workshops.

#### Environs Australia

Finally, our strong relationship with Environs Australia continues as we populate the Environs network database with examples of local government best practice, both in Australia and internationally, as well as improve the functionality of the network and services provided to Environs members. For more information on this really interesting initiative please refer to the [Environs website](#).

## Working Group Update – [Lauren Patmore](#)



Having so recently joined TNEP's Working Group, I was fortunate to be given the opportunity to contribute immediately through attending the 2004 Engineering Leadership Conference, the theme of which was "A New Paradigm". This theme was well suited to TNEP, since a major aim of the conference was to gain suggestions and insight into how engineers can engage with the Australian community better, in other words, through a 'whole of society' approach. The conference was hosted by Engineers Australia and sponsored by ABB, Energy Australia, Evans and Peck, SKM, AusIndustry, and Tenix.

The Governor-General of Australia, His Excellency, Major General Michael Jeffery, set a high level tone for the conference, with his suggestion that the engineering industry encourage and nurture both young and female engineers, and that engineers must play a pivotal role in bridging the great divide between developing and developed countries. The two-day conference invited a range of interesting presentations from a number of high profile professionals, including: Leon Gettler (Senior business writer, *The Age*); David James (News Editor, *BRW*); Dr. Simon Longstaff (Executive Director, St James Ethic Centre); Dr. Robin Batterham (Chief Scientist, Australian Government); and Dr. Karl Kruszelnicki (who assisted Fred Hollows to develop technology for examining eye diseases). I also had the pleasure of speaking with a number of important contacts for TNEP, further broadening TNEP's network and promoting The Natural Advantage of Nations.

All in all, it was a very successful conference, with a record attendance of young engineers and professionals. According to Doug Jones (President, Engineers Australia), never before has he seen such an enthusiastic and insightful attendance.

## New Working Group Member – [Alexis Nelson](#)



I am honoured to become part of TNEP's Working Group. I am eager to assist and support your ongoing sustainable development programs world wide in exchange for invaluable knowledge and experience of how businesses can thrive by focusing on the triple bottom line. Training for three weeks with Charlie Hargroves and L. Hunter Lovins in the *May 2005 Natural Capitalism: Critical Literacies for Sustainable Engineers* course provided me with an introduction to sustainable business and the built environment. Engineers have the ability to shape our futures and it is important that all disciplines strive for environmental, economic and social equity to make our world a better place. Education and training are so important to this challenge and I would like to participate in the evolution of your programs. My background is in cross cultural coordination and leadership work. I am pursuing my undergraduate degree in Environmental Studies: Policy and Analysis at the University of Colorado. I can offer research support behind the forces of policy, science, and economics that influence the development of environmental sustainability.

Born and raised in Boulder, CO., Alexis has a research focus in policy and analysis to enable her to aid society in mitigating the conflicts between science and policy that slow our progress towards a sustainable world. This summer she will complete an internship at the Natural Resources Law Center researching the effectiveness of water rights language on protecting wilderness areas in Colorado and Arizona. Her background evolved from cross-cultural coordination and youth leadership work. Alexis is alumni of the Boulder Valley School District Japanese Exchange Program (1997), AISEC (International Association of Students in Business and Commerce) UC Chapter (2000) and the President's Leadership Class (2000). Over the past five years, Alexis has developed her professional background in administration, account management, and special event coordination. She is dedicated to contributing to and influencing the sustainable development movement and is honored to offer her support as the newest member of the Working Group.

## [The Nuclear Energy Debate](#) (View Full Article)



The nuclear energy debate in Australia has begun. The Natural Edge Project has compiled a new web site with key information that we help will better inform the debate. We have learnt from the process of developing the book *The Natural Advantage of Nations* that issues are not as simple as they first appear. This is the case with the nuclear debate. Some of the key points we feel that are currently missing from much of the debate so far are summarised here. So can nuclear power help reduce greenhouse gas emissions? TNEP contributor and co-author Senior

Lecturer at UNSW and Adjunct Professor at Murdoch University [Mark Diesendorf](#) wrote recently in the Canberra Times that "Nuclear power stations themselves do not emit CO<sub>2</sub>. But the nuclear fuel cycle is a complex process with many steps, some of which are large users of fossil fuels. The corresponding CO<sub>2</sub> emissions have been calculated by several authors who are independent of the nuclear industry, most recently by Jan Willem Storm Van Leeuwin, a senior consultant in energy systems, together with Philip Smith, a nuclear physicist. As we might expect, they find that the energy inputs, especially to mining, milling and enrichment, depend sensitively on the grade of uranium used. For high-grade ores (i.e. those with at least 0.2% uranium oxide) the energy inputs are indeed much less than the electricity generated. But, the quantity of known uranium reserves with ore grades richer than this level is so small, that it would only last for a few decades at the current usage rate.

For the more common low-grade ores (i.e. 10-20 times less concentrated than the high-grade ores), *Van Leeuwin and Smith find that the total fossil energy consumption in uranium mining, milling, enrichment and power station construction becomes so large that nuclear power emits more CO<sub>2</sub> than an equivalent gas-fired power station.*"

This is the 1<sup>st</sup> key point to make. To date no one at all, not even the nuclear industry globally has refuted Van Leeuwin and Smith's *Life Cycle Analysis* study. Rather the study is being cited by many reputable sources. For instance, in the US Yes Magazine 2004 Autumn issue "Can We Live Without Oil?" Rocky Mountain Institute's [Cameron Burns](#) used the Leeuwin and Smith study to refute [James Lovelock](#)'s arguments when they debated whether nuclear energy was a necessary and viable solution to prevent global warming?

The 2<sup>nd</sup> key point is that the amount of energy it takes to build and run nuclear energy plants and all the processes that go with it, means that it takes *7-10 years before nuclear power plants start to achieve net CO<sub>2</sub> reductions (compared to 3-6 months for wind power)*. *Van Leeuwin and Smith write in their report "[Nuclear Power: the Energy Balance](#)" that "The use of nuclear power causes, at the end of the road and under the most favourable conditions (with the highest quality ores), approximately one-third as much CO<sub>2</sub>-emission as gas-fired electricity production. The rich uranium ores required to achieve this reduction are, however, so limited that if the entire present world electricity demand were to be provided by nuclear power, these ores would be exhausted within three years. Use of the remaining poorer ores in nuclear reactors would produce more CO<sub>2</sub> emission than burning fossil fuels directly."*

So Amory Lovins and John Price argued as far back as 1975 that the long period required by nuclear power to generate its energy inputs, even from high-grade ores, entails that, during a period of rapid expansion of the nuclear power industry over several decades, more CO<sub>2</sub> emissions could be emitted than are saved. Eventually, years after the growth in nuclear power reached a plateau; there could indeed be net CO<sub>2</sub> reductions. But by then there may be no more high-grade uranium ores. Hence the case that nuclear power will significantly assist to reduce greenhouse emissions simply does not add up. For more information on other aspects of the debate see TNEP web site.



## [Co-Authors and Supporters Publications Update](#)

The success of TNEP is only possible because of a wide array of partners and the key experts who make up our advisory, steering, editorial committees and co-author groups. We believe that all have part of the solutions the world needs. Our book NAON is designed to feature a succinct overview of the work of many of these experts. We are confident that this will inspire you to seek out more detailed work by NAON's co-authors and contributors. To assist you to do this we have compiled a list of just some of the recent publications of TNEP's co-authors, editors and advisors.

**Barney Foran - Balancing Act: A Triple Bottom Line Analysis of the Australian Economy.** Technical report by Barney Foran (CSIRO Sustainable Ecosystems), Manfred Lenzen and Christopher Dey (Sydney University).

[View Website](#)

**Chris Ryan - Digital Eco-Sense: Sustainability and ICT - A New Terrain for Innovation,** by [Professor Chris Ryan](#).

[View PDF](#)

**Colin Butler - UN Millennium Ecosystem Assessment,** [Butler CD](#), Oluoch-Kosura, W, Corvalan C, Fobil J, Koren H, Pingali P, Tancredi E, Hales S, Human well-being across the scenarios. In: Millennium Ecosystem Assessment, Scenarios Working Group, Island Press, Washington DC.

[View Website](#)

**Jeff Kenworthy - Sustainability & Cities: Overcoming Automobile Dependence,** Island Press, 1999.

[View Website](#)

**Paul Perkins - The Australian Water Industry (AWI) Roadmap:** Adjunct Professor [Paul Perkins](#), Chair of the Barton Group, Chair of the National Environmental Education Council and TNEP Advisory Board member has led this initiative. This is an initiative of The Barton Group.

[View PDF](#)

**Peter Newman - Sustainability & Cities: Overcoming Automobile Dependence,** Island Press, 1999.

[View Website](#)

**Philip Sutton - Living well within our Environment: A Perspective on environmental sustainability?** A paper for the Victorian Commissioner for Environmental Sustainability, by Philip Sutton, Director-Strategy of Green Innovations.

[View PDF](#)

**Stephen Dovers - Institutions and Sustainability**

Connor, R. and [Dovers, S](#). 2004. *Institutional change for sustainable development*. Cheltenham.

[View Website](#)

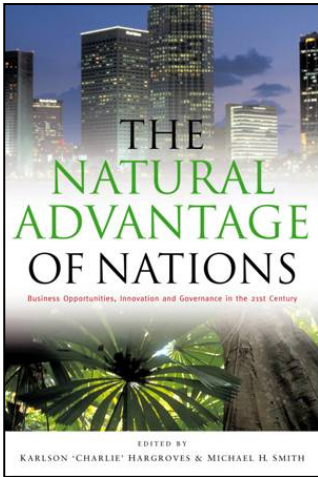
Edward Elgar and [Dovers, S](#). 2005. *Environment and sustainability policy: creation, implementation, evaluation*. Sydney: Federation Press.

[View Website](#)

**Valerie Brown - Social Learning in Environmental Management: Building a Sustainable Future:** Edited by Meg Keen, [Valerie A. Brown](#) and Rob Dyball. "Social Learning in Environmental Management explores and expands the approaches to collective learning most needed to help individuals, communities, experts and governments work together to achieve greater social and ecological sustainability."

[View Website](#)

## The Natural Advantage of Nations



**Title:** The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century

**Editors:** Karlson 'Charlie' Hargroves and Michael H. Smith of The Natural Edge Project

**Forewords:** Alan AtKisson, Amory B Lovins, William McDonough, L Hunter Lovins and Michael Fairbanks

**Published:** Earthscan /James & James in January 2005

### **From the inside cover**

This book, *The Natural Advantage of Nations*, is about innovation, solutions, competitiveness and profitability. It is also about building environmental integrity and sustainability now and for future generations.

*The Natural Advantage of Nations* pulls together for the first time the work of more than 30 of the world's leaders in sustainability, containing fresh evidence from around the globe, to show that, far from being in conflict with economics and business practice, the drive for a sustainable world is both an environmental imperative and a practical and profitable necessity that is already happening. This book draws a bold vision for the future and tells us how to get there by building on the lessons of competitive advantage theory and the latest in sustainability, economics, innovation, business and governance theory and practise.

This is top-drawer reading for business people, economists, engineers, consultants, policy-makers, researchers, students and indeed anyone working to create a better world. The authors incorporate innovative technical, structural and social advances, and explore the role that governance can play in both leading and underpinning business and communities in the shift towards a sustainable future. The resulting vision is one in which business, government and civil society all have power, and each plays its part in forging a sustainable future.

Coupled with a companion website, this book covers the breadth and depth of the business case for sustainability, and moves it forward. The result is nothing less than the most authoritative and comprehensive guide to building the new sustainable economy.

### **A Teaching Resource**

Even before publication the book has been selected as one of three books featured and promoted in the back of the recently published "[Limits to Growth-The 30 Year Update](#)". Over 55 online book retailers are already featuring NAON on their web sites including Amazon and Barnes and Noble. The Earthscan web site provides a link to where lecturers and academics can order a complimentary review copy to assess applicability for their courses. Reviewers so far have commented that this book and companion web site will be one of the key sustainable development resources for the next decade. The book is an ideal text for sustainable development and environmental studies courses. It is a significant educational resource for both undergraduate and postgraduate courses in economics, business schools, courses in innovation, urban planning, geography, engineering, the role of government in the 21st century, globalisation, and tripartite world. The book is designed to be self-explanatory and user friendly. The book has a comprehensive table of contents, index, notes and reference list. Whilst written clearly for the layperson it is also academically extremely rigorous with over 1500 notes and references. In addition there are over 150 freely downloadable references on the [book's companion web site](#). Therefore this book will be a significant asset to any student, teacher or researcher saving one and all literally years of time and research.

## Endorsement Quotes from the Book Cover

'I think it's a great project and I wish it every success'

*David Suzuki, award winning scientist, environmentalist and broadcaster*

'This is world-leading work – the team deserves the loudest acclamation possible'

*Barry J. Grear AO, Vice President, World Federation of Engineering Organisations*

'It is widely understood that we must shift towards a sustainable future, and increasingly it is agreed that in order to do so we must move beyond rhetoric and into hard-edged, pragmatic forward steps. This book is a vital contribution to that forward movement, and I commend it to you.'

*Steve Morton, Group Chair, Environment and Natural Resources, CSIRO*

## Endorsement Quotes from Australian Leaders ([See Reviews](#))

"Among the stewards of our country's future, our young leaders are setting the pace to achieve a sustainable future. The Natural Edge Project reflects much of the Institutions thinking on sustainability and with their enthusiasm it's bound to succeed. They've assembled an incredible network which will definitely ensure a positive triple bottom line and multi-sectoral involvement."

*Dr Peter Greenwood, President Engineers Australia 2001/03*

"I strongly support the concept, outlined in this project, of a "natural capitalism"-style publication. In particular, I feel the use of such a book as a resource text in the secondary and tertiary education arenas would be extremely valuable. In fact it stands to make a very significant contribution to National awareness of the major local issues in sustainable development, both in the national context and in the context of how we see our potential contribution to unravelling the global puzzle; and in developing a sense of actual empowerment to act locally with confidence. I also strongly support the additional concept of providing, through an associated web site, electronic entry to the book materials and, for those who have read it, follow-up information, networking and discussion possibilities to maintain and build on positive motivation."

*Elizabeth Heij, Facilitator, CSIRO Sustainability Network*

"It is time that we made a stand and started spreading the message of how important Sustainable Development is. We see that if our clients don't adopt sustainable principles then they will go out of business. If they go then we go to, enlightened self interest really. I am in wholehearted support of your book and see it as timely in its content and message."

*Steve Gale, Australasian Sustainable Development Leader, Hatch Engineering*

"Arup's interest in The Natural Edge Project arises from wanting to be a part of an initiative that showcases sustainability success stories in the Asia Pacific Region, raises awareness of the sustainability imperative, and that encourages collaboration between industry, academia, private and public organisations. We see this project as an opportunity to further network with other like-minded individuals and organisations."

*David Singleton, CEO, Arup Australasia*

"I am delighted at the achievements of two years of TNEP. The Sustainable Industries Division of the Queensland EPA is proud to have supported to project and we look forward to using the book and related educational modules. The TNEP book, The Natural Advantage of Nations, will be a very useful educational tool for government and industry in showing how to make the right steps toward a sustainable economy. The Natural Advantage of Nations will provide a graphic and compelling view of the kind of future we all might have if we truly commit to achieving sustainable development. I have ordered 100 copies of The Natural Advantage of Nations to help the sustainability leaders we have identified in Queensland industry and government. Relevant information about best practice and the lessons from industry innovators helps us build the momentum toward a Smart State economy, internationally competitive because of its sustainable industries."

*Dr John Cole, Executive Director, Sustainable Industries Division, Environmental Protection Agency Queensland*

## Reviews from around the World ([See Reviews](#))

"This is a scholarly book providing policies, strategies and methodologies aimed at achieving global sustainability in human activities. While noting that many current policies are unsustainable the book takes a positive approach, unlike many previous commentaries on the environment and the future of the planet... An essential message throughout the book is that competitive advantage and sustainability of companies and/or nations are not mutually exclusive; there are many examples of companies increasing profitability because they change practices so that sustainability is improved... I would recommend the book as an excellent text for studies in economics and sustainability. It is also an important source of ideas for business and industry leaders, engineers, architects, government planners and society generally."

*R H Brown, April 2005 Manufacturing Society of Australia, ([View Full Review](#))*

"The Natural Advantage of Nations is a collaborative effort in developing a framework for a more sustainable economy... The book shows how in a world where business, government and civil society all have power, each can best play their part and better work together to achieve win-win outcomes... it is a book that will occupy many a shelf as an authoritative source of present day sustainability solutions."

*Terence Jeyaretnam, principal at URS Australia, chair of the Environmental Engineering Society and editor of The Environmental Engineer, the journal of the Society. ([View Full Review](#))*

"Smart companies believe that sustainable development makes them more competitive and more resilient to shocks. It can also make them more at ease with employees, regulators, governments and society", says Bjorn Stigson, head of the World Business Council for Sustainable Development. This argument is at the heart of a new Australian book that draws together seminal texts such as Natural Capitalism and Competitive Advantage of Nations to build an overview of the 21st century business case for sustainable development. A raft of books has attempted this task, with varying degrees of success. The Natural Advantage of Nations has pulled it off, thanks in no small part to an impressive range of contributors, a who's who of sustainable development from Amory and Hunter Lovins to Alan AtKisson on the international stage, and Phillip Sutton to Peter Newman on the local one.

*Richard Collins, Waste Management and Environment (WME) ([View Full Review](#))*

"Anyone interested in the practical details of building a bright green future needs to read this book. It's an absolutely critical overview of our progress towards sustainability thus far, 500+ information-packed pages on what's working best. Intended by folks at The Natural Edge Project to be a sequel to Natural Capitalism, Natural Advantage does the best job I've yet seen of sweeping the vista of sustainability-related issues, with pragmatic examinations of best-practices in business and government; issue-wrangling essays on profitable green house solutions, greening the built environment and sustainable transportation; probing inquiries into the nature of major planetary problems -- the list goes on... It has a wonderful restorative effect to hold 500 pages of working solutions in one's hand. It's also incredible to have so many important ideas under one cover and within easy reach. This is a book I'll be coming back to again and again."

*Alex Steffen World Changing: Another World is Here ([View Full Review](#))*

"This volume pulls together thirty of the top thinkers in sustainability for a provocative and stimulating journey that happens to be easy to read. Its title echoes two famous works: Adam Smith's Wealth of Nations and Michael Porter's The Competitive Advantage of Nations, and it also gives a nod to an influential publication down under called Natural Advantage: Blueprint for a Sustainable Australia... The industrialized world, the essays contend, needs to focus not just on sustainable development but also on "sustainable re-development," which would shift the focus from solving environmental problems to eliminating them. In the book's view, businesses have the resources, management, leadership, and skills necessary to solve these problems; they just need to commit. And they should, because shareholder value is enhanced by a firm's ability to nurture talent and new ideas, as well as its reputation and brand identity... impressive examples used throughout the book to drive home the point that innovation and sustainability go hand in hand."

*Cynthia D. Churchwell, a business information librarian at Baker Library, Harvard Business School, with a specialty in the international economy. ([View Full Report](#))*

"A must read for anyone serious about understanding the global phenomenon and trend of sustainable development. This comprehensive and well-documented book shows specific examples of how sustainable innovation can and needs to transform our globally linked society

and economy. While it's a dense read, it's an important book... We're using this book at the Chicago Manufacturing Center to generate ideas for our GreenPlants program that helps manufacturers change to sustain in an incredibly competitive global economy. Contrary to the popular idea that business and environmental and societal stewardship are at odds, the Natural Advantage demonstrates that the time for new multi-stakeholder collaborations between industry, government, and the global community is here."

*Karen Wan, GreenPlants Program Director Chicago Manufacturing Center*

### **The Significance of *The Natural Advantage of Nations***

On 3 April, former Governor General Sir Ninian Stephen launched *The Natural Advantage of Nations* to a full house of business, government and civil society leaders at the 'National Business Leader's Forum for Sustainable Development' in Melbourne. Collated and edited by a group of young Australian engineers and scientists from a group called *The Natural Edge Project*, this book is one of the first to bring together leaders from business, government, civil society, academia and NGOs to demonstrate how it is possible and profitable to achieve sustainable development in our lifetimes.

It is being increasingly recognised that we need to achieve sustainable development (development that improves not just the economic bottom line but the integrated bottom line of economic, social and environmental well being). As Western Australian premier Geoff Gallop stated *"For many years we pursued economic, environmental and social goals in isolation from each other. We have come to recognise that our long-term well-being depends as much on the promotion of a strong, vibrant society and the ongoing repair of our environment as it does on the pursuit of economic development. Indeed, it is becoming obvious that these issues cannot be separated. The challenge is to find new approaches to development that contribute to our environment and society now without degrading them over the longer term."*

With over 30 authors and contributors, *The Natural Advantage of Nations* pulls together a stunning thesis showing for the first time that, wisely applied, the pursuit of sustainable development can lead to higher business as usual economic growth, increased employment, whilst solving our social and environmental problems. The book shows that significant decoupling of economic growth with environmental load on the planet is possible. This is a vitally important book for the world when driven by China the world economy is growing fast but so are the environmental pressures. This book draws a bold vision of an ecologically sustainable future *and* tells us how to get there by building on the lessons of competitive advantage theory. It provides a remarkable synthesis of the latest from the fields of sustainability, economics, innovation, business and governance.

This is not another book of nice ideas. Rather it covers the latest most significant developments in the actual day to day practise of sustainable development by business, government, institutions, civil society, universities, research and development organisations, and educational institutions from around the world.

Numerous leading experts have lent their support to this book because it shows that pursuing sustainable development in any organisation and on any scale, nationally and internationally, is no longer a walk into the unknown. In fact, as this book shows, in many cases the solutions already exist and are being implemented by companies, governments, civil society groups, churches, trade unions, universities, schools and professional bodies around the world. The book provides demonstrably relevant and successful solutions, already being applied, of which its authors have first hand experience. These are people who are working at the 'coal face' (or should we say 'solar face') of change, having been either a part of these processes of reform within significant institutions or advisors to them.

Imagine if, as in the Netherlands, every government initiated a program to work out how they could achieve a 90 percent plus reduction of their negative environmental impacts over the next 50 years? Imagine if, as in Western Australia, every state or regional government worked with business, universities and civil society in a spirit of partnership to develop a sustainability strategy? Imagine if every state or regional government committed to halving its ecological footprint over the next 20 years like WA has? Imagine if, as in Goa a state in India, every nation's experts tackled the challenge of how to create sustainable cities cost effectively in 30 years? Every nation and regional government can and should. The lessons of these ground

breaking programs are recounted in this book so that any nation, any regional government can learn from these programs and confidently set their own ambitious targets.

EarthScan James & James, the largest publisher of sustainability books in the world with over 4000 titles currently in print, has stated that *"coupled with a companion website, the book The Natural Advantage of Nations is nothing less than the most authoritative and comprehensive guide to building the new sustainable economy."* Earthscan/James and James have demonstrated their belief in the book by choosing it as one of the 3 to be promoted at the back of the recently published 30 year update of the classic sustainability text Limits to Growth and have featured the book on their site homepage. The book is currently the 6<sup>th</sup> bestseller of all of Earthscan/James&James' 4000 titles.

The breadth of scope of the book means that it truly has something for anyone. Whatever your line of work, whatever your organisation, this book and its online companion gives you access to the latest thinking in how to help you achieve sustainable development in your context. While written clearly for the layperson it is also academically extremely rigorous with over 1500 notes and references. In addition there are over 500 freely downloadable references on the [book's companion web site](#). Therefore this book will be a significant asset to any student, teacher or researcher saving one and all literally years of time and research.

Finally the books publication is timely, in that 2005 marks the start of the United Nations *Decade of Education in Sustainable Development*. It will provide a key resource for educational bodies seeking to play their part to ensure all school, higher and vocational education graduates have critical literacies in sustainable development. Above all the book shows that Australia has truly world leading expertise and capacity in this area. It shows, as Hunter Lovins discussed at the National Press Club, that Australia can indeed lead the next wave of innovation and truly become a 'sustainability superpower'.

### Quotes from the Foreword Authors

"We have learned a lot of lessons since Natural Capitalism came out in 1999, that I think will make the next explications of this subject even more powerful and effective, so working with our Natural Project Edge collaborators I think shows great promise, these are very diligent and well informed people that I think are doing valuable work and we are looking forward to cooperating with them in ways that will help us all to learn faster and get more done better."

*Amory Lovins, CEO, Rocky Mountain Institute*

'The continuing explosion of creative and determined efforts to build a world that is environmentally, economically, socially and humanly healthy is hope-giving...If this book's "to-do list for a sustainable civilization" is not worth the dedication of a life's work, what is?'

*Alan AtKisson, author of Believing Cassandra*

"Young people often ask me what gives me hope. Many things make me hopeful, but the best answer, just now, is this book... The numerous examples given here of profitable ways to improve the environment, human well-being and the bottom line.. proves a belief that has grown in me for several years that while the tipping point of environmental devastation may be frighteningly close, the people with the commitment to implement the solutions we already know can solve the problems that are at hand."

*Hunter Lovins, Co-Author of 'Natural Capitalism: Creating the Next Industrial Revolution'*

'*The Natural Advantage of Nations*... shows that what many people saw as impossible just 15 years ago is now already happening. Within these pages you will see that there is reason for robust hope, and as you read, we hope you will be inspired to contribute to this magnificent re-evolution of human enterprise, a moment in our history when the things we make and build and grow can become a truly regenerative force'

*William McDonough, co-author of Cradle to Cradle*

'The authors of this book [have] the energy, insight and commitment to begin the discussion of what I call "the ultimate integration"; that is, integration of the concepts of competitiveness and Natural Capitalism.'

*Michael Fairbanks, co-author Plowing the Sea: Nurturing the Hidden Sources of Growth in the Developing World*

## Editors Information

Karlson 'Charlie' Hargroves, a civil engineer and postgraduate researcher in sustainable policy development at Murdoch University, is Co-Founder and Co-ordinator of The Natural Edge Project (TNEP). Hargroves has contributed to a variety of private and government sustainability initiatives in Australia and internationally and is currently a visiting scholar at the University of Boulder Colorado, USA.

Michael H. Smith, a scientist and postgraduate researcher in theoretical chemistry at the Australian National University (ANU), is Co-Founder and Content Co-ordinator responsible for Research and Content Development for TNEP. Smith has contributed widely to many sustainability initiatives, represents TNEP on the editorial board for CSIRO ECOS magazine and was a recipient of an ANU Environmental Achievement Award in 2001.

Cheryl Paten, is currently a lecturer in the School of Environmental Engineering at Griffith University (Brisbane, Queensland). Through her TNEP work, supported in part by Griffith University and a number of grants, Cheryl is helping to gather content about local council initiatives, developing sustainability training material for professionals, and building sustainability content for engineering students.

Nick Palousis, has degrees in Mechatronic Engineering and Mathematical and Computer Science at the University of Adelaide, graduating with First Class Honours. Nick joined The Natural Edge Project in 2003 as Operations Coordinator, bringing to TNEP technical expertise as well as a variety of operational skills borne out of earlier experiences in public relations and teaching robotics.

The Natural Edge Project is an ongoing volunteer initiated, not-for-profit partnership working in collaboration with a growing number of practitioners, researchers, academics and professionals supported by leading organizations, institutions and companies. TNEP works to bring together and develop robust frameworks, operational methodologies and best practice for sustainability and seeks to assist individuals, business and government to achieve a natural advantage through a whole-of-society approach to sustainability. More information about TNEP, its projects, partners and ongoing activities is available at: [www.naturaledgeproject.net](http://www.naturaledgeproject.net)

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The members of the secretariat wish to thank the following supporters of the project;

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