



THE NATURAL EDGE PROJECT

UPDATE 12

8th OF AUGUST, 2004



Greetings to the supporters and teams of The Natural Edge Project

Welcome to Update 12. This update is a bumper edition covering the last 12 weeks in which our team has been fully engaged in a range of projects and initiatives. We hope that our correspondence with individuals and groups on various projects has kept most of you ‘in the loop’; for our broader network please enjoy a read through what we have been doing over the past three months. Our aim is to return to six-weekly updates. Please contact us if you would like to know more about any of our initiatives, or if you have feedback on how we are doing.

This is a particularly important update as we mark a significant transitional phase for TNEP. One and a half years since formal commencement, Update 12 coincides with the completion of TNEP’s ‘flagship’ publication *The Natural Advantage of Nations*, and with Earthscan taking over the publication process. We take this opportunity to summarise recent achievements and to share our thoughts on future activities with our project supporters, explaining why and how we believe they compliment and build upon TNEP’s original initiatives and core objectives. Given our ‘whole of society’ approach, it is vital that our Advisory Board, Steering Committee, Editorial Review Panel, Working Group, mentors and supporters contribute to the Project.

In the last three pages of Update 11 we outlined six major areas for future projects: those areas which, through consultation with supporters and colleagues, we had identified as critically important. Feedback from Update 11 indicates a positive response for all projects highlighted. We are also individually contacting all TNEP advisory board members to ensure that the Project aims and strategy are clear as we develop our strategy and work plans.

Karlson ‘Charlie’ Hargroves
Project Coordinator

Michael Smith
Content Coordinator

Cheryl Paten
Education Coordinator

Nick Palousis
Operations Coordinator



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More Details

Recent Tours & Events

- Hunter Lovins' Australian and New Zealand Tour (March/April 2004)
- UNESCO Gathering: Engineering Education for Poverty Eradication (Washington)
- Washington Meeting with 10XE Project Co-ordinator, Odd-Even Business
- Alan AtKisson tour: Meetings and workshops in Brisbane and Adelaide
- Australian Future Summit
- ASEAN Engineering Conference, Malaysia
- RAIQ Queensland: Profiting from Sustainable Communities Seminar

Upcoming Reports on Tours & Events

- GAP Forum on Sustainability
- Students of Sustainability 2004
- Australian Campuses Towards Sustainability: Griffith University
- Business Leaders Forum for Sustainable Development
- Engineering Education in Sustainable Development 2004

Current Project Initiatives

- *The Natural Advantage of Nations* publication (NAON)
- Environmental Engineering College: Engineering Sustainable Solutions Portfolio (ESSP) Introductory Module 1
- Environs Australia: Local Government Database Project
- Queensland EPA Sustainable Industries Division: Industry Inventory Project
- Solutions for a Sustainable Future: Focus Publications
- Human Productivity Improvement (HPI)

Upcoming Initiatives

- NAON Training Program
- ESSP Introductory Module 2
- ESSP Level 1 Module: UNESCO
- TNEP New Publications

Past updates can be downloaded from the TNEP web site: www.naturaledgeproject.net

Aims & Strategy - Summary:

In summary, The Natural Edge Project seeks to assist individuals, practitioners, educators, business and government to achieve a natural competitive edge, by developing synergies between economic, social and environmental outcomes. TNEP seeks to assist in developing, bringing together and promoting robust frameworks, operational methodologies and best practice for sustainability. Given current needs in Australia and the Asia-Pacific region, and various strengths of the Secretariat team (see previous updates and ‘meet the teams’ through the project website), TNEP is focussing on delivery of content and awareness raising initiatives, where:

- The Project is working to consolidate its experience in this area, to be able to provide institutions, representative bodies and academia with material to incorporate into their existing courses, subjects, and professional development seminars etc.
- The Project is working with sustainability mentors around the world to build relationships and contacts internationally, and to bring to this region the tools, frameworks, people and events that will accelerate our region’s move towards a more sustainable way of life.

Contact Details Update:

Critical to TNEP fulfilling its potential is good communication among all of the organisations that have agreed to partner formally with TNEP. To date, Charlie has been TNEP’s first point of contact with TNEP partners and Charlie continues to be the first port of call. Cheryl, Michael and Nick will continue to undertake project work and liaise with partners involved in that work. Updated contact details for the four Secretariat members are provided below:

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Secretariat Staff Update:

The members of the TNEP team have gained a great deal of training and mentoring through the process of developing the project and editing the publication. Building on from this, each team member has chosen both an academic and an operational path, influenced by discussion with mentors within Engineers Australia and a number of project supporters, to ensure that the anticipated outcomes and benefits further the aims of the Project.

We are pleased and excited to share with our supporters the following developments in the lives of our team:

Charlie Hargroves:

In June 2004, Charlie was accepted as a visiting scholar to the University of Colorado (CU), Boulder under the supervision of Professor Bernard Amadei of the Department of Civil, Environmental, and Architectural Engineering. Whilst at the University Charlie will focus mainly on further developing TNEP's Engineering Sustainable Solutions Program. The research will be supported by both a grant from UNESCO and a private donation from the recently formed sustainability consultancy, Natural Capitalism Inc (NCI). Additionally, whilst in the USA Charlie will be actively promoting *The Natural Advantage of Nations* and continuing to build relationships with TNEP's international partners and mentors.

Both Charlie and his wife Stacey have relocated to Boulder Colorado and are missing family but settling in well. As part of the program Charlie has been approved to undertake a work experience placement with the sustainability consultancy Natural Capitalism Inc. The company, run by Hunter Lovins, has accepted Charlie in order to offer him business/operational experience in sustainability consulting to enhance the development of the education material. Once the education material has been developed, Charlie will be invited to propose an undergraduate unit to offer to students at the University of Colorado, Boulder in the 2004/05 university year to trial the material. Charlie will spend his time between TNEP secretariat co-ordination, developing opportunities for collaboration between CU, NCI and TNEP, and participation in the Earth Sciences Engineering program at CU.

The Secretariat believes that this will significantly benefit TNEP and its partners in multiple ways. Among many, the following are worth highlighting here:

- This arrangement will significantly assist in the development of projects outlined in TNEP Update 11. NCI is working on similar subjects and issues, with the same multi-stakeholder approach that TNEP believe is presently needed. Charlie has already identified many opportunities to combine Hunter's work with TNEP material to develop a range of education materials, training modules and in the development of ongoing publications.
- The development of the *Engineering Sustainable Solutions Program: Level 1 Modules* with UNESCO will be greatly assisted by supervision from Prof. Amadei and access to both the academic staff and students at CU. Team member Nick Palousis has been approved to travel to Colorado in early September to work with Charlie on the development of the modules for a 3 month period. The Level 1 Modules will build on from the Introductory Modules developed with Engineers Australia earlier this year.
- Such exposure to contacts in America and the northern hemisphere will significantly increase our network and will ensure that exciting opportunities for Australia and the Asia-Pacific Region are not missed in the rapidly moving world of sustainability. Charlie is currently investigating a UK tour in November, with Alan AtKisson and Hunter Lovins, to promote *The Natural Advantage of Nations*.
- The arrangement will allow TNEP to work with Hunter to develop relationships with her and her colleagues in the US and internationally. Hunter has offered to return to Australia and New Zealand annually to visit and work further with TNEP partner organisations. Further to April 2004 tour, the Secretariat is tentatively proposing March/April 2005 for the next visit.

Michael Smith:


Now that *The Natural Advantage of Nations* is with the publishers, Mike has returned to his base at ANU (Canberra) to finish his PhD over the next 6 to 12 months. Mike continues to work two days a week as Content Co-ordinator for TNEP and continues to be responsible for the standard of TNEP's content for public release. Michael has received a great deal of flexibility from his supervisor and department and our team is very grateful for this.

Specifically, Mike's TNEP tasks now include:

- Meeting with partners of TNEP and discussing TNEP's future directions and potential synergies.
- Building the companion web site for NAON with Charlie which will have over 200 downloadable references and/or web sites of note to provide the reader, academics, students with fast access to additional information.
- Assisting the team with the development of the environmental engineering modules for Engineers Australia's Environmental Engineering College and similarly the modules for UNESCO.
- Co-content Coordinator with Natural Capitalism Inc's Christopher Juniper, Charlie and Hunter Lovins to develop a fieldguide for business on Natural Capitalism and Natural Advantage.
- Leading the development of the project brief, content map and research for the follow up book *Natural Advantage of Nations*. For instance, Michael is currently working with Phillip Sutton, Director of Green Innovations and the co-ordinator of the Greenleap Network, on a synthesis chapter on growth and sustainability for this follow up book.
- Co-ordinating a paper on Security and Sustainability, that expands on what was covered in NAON, to be included in the Australian Conservation Foundation's update of ACF's *Natural Advantage: Blueprint for A Sustainable Australia*.
- Exploring ways to better communicate ESD concepts with TNEP's lead copy editing and graphic designer, Roger Dennis, (Roger lead the copy-editing and graphic design for *The Natural Advantage of Nations*); and
- Membership of the editorial board and producing articles for CSIRO's ECOS magazine.

Mike's PhD is focused on methodological improvements to molecular dynamics software packages and using the latest theoretical chemistry advances to better understand atmospheric chemistry. Michael works for Professor Michael Collins at the Research School of Chemistry, ANU, who is a world leader in the theoretical chemistry field of potential energy surfaces. Previously, Michael worked with a team at Sydney University to test alternative chemicals to those currently used for fire extinguishers that currently destroy the ozone layer. Previous to that he worked with a team at Melbourne University that had used whole system design approaches to re-design industrial pressurized filtration. Being involved in these projects as an undergrad and postgrad awakened Michael's awareness that 'Natural Capitalism's' whole system design philosophy is being used by researchers all over the world. One of the most exciting areas of research deserving greater promotion is the way green chemistry and biomimicry are combining to produce green nano-technology. Michael hopes to assist in this in the long term.

Cheryl Paten:

Subsequent to communications around Hunter's tour and Cheryl's recent trial of sustainability education material at Griffith University (Brisbane), she has been offered a one-year lecturing position with the School of Environmental Engineering in the Faculty of Environmental Sciences. The current 12 month arrangement includes Griffith facilitating one third of her time to work on TNEP initiatives and provides Cheryl with opportunities to develop her teaching and training skills. Her role within the School of Environmental Engineering is to incorporate sustainability critical literacy skills into existing Environmental Engineering degree subjects, and to look at opportunities for improving the course content.

TNEP would like to thank Griffith University for their generosity in supporting Cheryl's contribution to the project. In the short term, Cheryl will still remain employed separately by TNEP for the equivalent of one day per fortnight to allow autonomy should it be required in particular projects. During the second half of 2004, Cheryl will then be working with the School to organise a transfer of her 12 month contract to a more long-term partnership arrangement over a three year term. This arrangement would formally acknowledge the relationship between TNEP and Griffith University, and allow for Cheryl to maximise her efforts with both organisations. This includes Cheryl enrolling in a part time PhD, funded through the School.

The secretariat is excited by this opportunity for the following key reasons:

- TNEP has become involved in a community-service partnership arrangement with the University and Griffith will become a significant TNEP project supporter through this collaboration.
- TNEP will be able to trial a variety of material with the students through Cheryl's subjects and gain formal teaching/training experience with an academic institution; and
- Cheryl will be able to commence post-graduate study in her chosen area of interest (local government and effecting change toward sustainability in the development industry).

Cheryl's area of interest for postgraduate work is related to her current TNEP work in local government activities, the built environment and her interest in effecting change through education. Given that South East Queensland is becoming one of the fastest growing areas of the world (on par with some fast growing developing countries!), current urban development practices and development assessment frameworks are critical factors in determining whether South East Queensland will be able to retain its quality of life through the population explosion.

Cheryl envisages that her research will focus on a number of local authorities in South East Queensland. She will ask whether there are a set of common key leverage points across these local authorities (i.e. within their development assessment process or using state legislation) that can be used to ensure sustainable development practices become the norm as quickly as possible, and so that the development industry moves to the front of the built environment 'wave of innovation'. She will also endeavour to identify what key mechanisms are still required to accelerate South East Queensland's move toward more sustainable urban development practices.

Nick Palousis:

From 30 June, the Secretariat has been able to increase Nick's formal contribution to the project to full time as TNEP's Operations Coordinator. Nick is helping to deliver education modules with the Engineers Australia Environment College and UNESCO, content development for sustainable technology assessment and the HPI program. He is also undertaking some of the administrative functions of the secretariat, ensuring that we keep on track. Nick will be the lead coordinator for the annual tour with Hunter Lovins in March/April 2005 and will be in touch with many of you shortly regarding the program.

Nick began his involvement with TNEP through taking a lead role in the development of the first phase of the 10XE Design Integration Guide with Rocky Mountain Institute, researching exciting case studies of whole system engineering design to achieve 90 per cent improvement in resource productivity. Nick's technical expertise in systems engineering and mathematical sciences helped to develop a deep interest behind Amory Lovins' thinking on Whole Systems Design and will seek to engage TNEP in further work on the 10XE project.

In the true multi-disciplinary spirit of TNEP, Nick has since been tasked with a number of lead roles in various initiatives: Project Officer of the Engineering Sustainable Solutions (ESS) Introductory Module for Engineers Australia, Co-Author with the TNEP team for Focus Publishing's *Australia Worldwide, Solutions for a Sustainable Future* publication, Co-Chair with Charlie of the 'Young Professions Australia Roundtable' and Project Officer for the Environs Australia: Local Government Database Project. Furthermore, Nick will play a lead role in the development of the ESS UNESCO Engineering Modules, the Human Productivity Improvement project, the future publication *Natural Advantage of Nations II*, as well as the coordination of Hunter Lovins' tour of Australia/New Zealand in 2005 and the establishment of TNEP's Working Group. Throughout this period, Nick will be tasked with the responsibility of assisting Charlie with TNEP coordination and ensuring the Secretariat stay healthy!

Nick is currently enrolled in a masters by research postgraduate degree under partial scholarship with the University of South Australia, focusing on the Assessment of Sustainable Technologies. He is considering the question of, "How far do I engage the human dimension into the assessment process?" It is becoming relatively straightforward to assess a technology in terms of its energy efficiency, resource productivity and ecological footprint, but what isn't so clear is the effect of the technology on organisational and community culture. This may not seem such a significant issue in developed countries, but in developing and post-conflict countries the effect of an 'appropriate technology' on its culture may have a profound impact. Nick's research will, amongst other things, look at 'solidifying' these cultural perspectives into tangible, technical assessment.

So far Nick's roles in various projects and research have intensified his focus and determination for applying The Natural Edge Project mindset to the business world of developed and developing countries: out there, in the field, getting results. Essentially, TNEP expects Nick to innovate, sending him into the heart of industry and the seas of culture, to determine the most effective Engineering Sustainable Solutions that satisfy all stakeholders, now and in the future.

Recent Tours & Events - More Details:

Hunter Lovins' Australia and New Zealand Tour



TNEP secretariat wishes to thank all of our partners who helped tremendously with the 2004 Hunter Lovins' / TNEP tour. Thankyou to all of you who worked tirelessly to ensure that each event was successful. Hunter spoke on how Australia could become a Sustainability Superpower throughout the tour because she genuinely believes it. Event after event confirmed this for her as she met with many of the TNEP project partners and so many other remarkable people. Hunter presented and participated in over 35

sustainability-related events in New Zealand and Australia within a three and a half week period (27 March to 25 April 2004). The tour involved a range of events including speaking at the major Enviro 2004 conference in the business and energy streams, presenting at the launch of a Sustainability Plan by the Victorian Division of Engineers Australia, and leading the Western Australian Government's Factor 4 by 2020 workshop.

Hunter wants the world to know of initiatives such as the WA State Sustainability Strategy, and the green buildings that she visited on her tour. A transcript of [ABC's Earthbeat Program](#) interview with Hunter is available online. She also appeared on [Late Night Live](#) interviewed by Phillip Adams, and on ABC's Midday Business Hour TV program. A complete summary of the tour with photos will be released in a separate summary.



Hunter and Philip Sutton discussing issues of sustainability development with members of the GreenLeap network.



Hunter presenting a session at the Western Australian 2 day workshop focused on building strategies to achieve the goals of the Western Australian State Sustainability Strategy.



Hunter about to present to over 400 members of Engineers Australia at a Western Australian Division breakfast briefing.



Hunter meeting with the Parliamentary Commissioner for the Environment, Morgan Williams and his team in New Zealand.



Hunter and the TNEP Secretariat at the Enviro2004 Conference shortly after the Pre-Launch of the Book.



Doug Jones, president of Engineers Australia, speaking with Hunter at the Launch of the Australian National Sustainability Initiative at ANU.



Hunter enjoying the Australian fauna during her visit to Adelaide with Morgan and Pam Williams from New Zealand.

UNESCO: Engineering Education for Poverty Eradication (Nick Palousis)

The Natural Edge Project would like to sincerely thank Tony Marjoram, Division of Basic and Engineering Sciences, Natural Sciences Sector, UNESCO who extended an invitation to the Secretariat to attend a closed meeting on 21st-23rd March, 2004 in Washington DC. The meeting was organised by UNESCO (Basic and Engineering Sciences Division), American Association for the Advancement of Science (AAAS), American Association of Engineering Societies (AAES) and World Federation of Engineering Organisations (WFEO). The meeting, 'International Focus: Engineering and Technology for Poverty Eradication' was an 'expert meeting' bringing together over 40 speakers and participants from 15 countries. This included various government and non-government organisations, including the World Bank, Engineers Without Borders (USA, Canada & Cameroon), WFEO, US Government, USAID, the UN and American Society of Civil Engineers.

The primary objective of the meeting was to develop and initiate a plan of action to support the significance of engineering and technology for poverty eradication. The core meeting sessions began with two workshops on infrastructure and enterprise development, followed by a plenary workshop on capacity building. During these workshops I presented TNEP's 10XE and Engineering Sustainable Solutions: Education Portfolios projects, which were received extremely well. The second day consisted of a plenary workshop on governmental, intergovernmental and NGO perspectives and ways by which they can contribute in the development of engineering and technology for poverty eradication. Following this was a final workshop on recommendations arising from the meeting and the development of an action plan directed towards the representing organisations, governments, and other relevant sectors of society.

Focus' primary recommendations were:

- Development of partnerships and guidelines with relevant groups and provision of policy advice on engineering and technology for poverty eradication.
- Development of engineering education and research to take a more holistic, multidisciplinary approach, incorporating aspects sensitive to developing countries
- Readily available micro-finance facilities to support technology for poverty eradication.
- Gender equality issues to be recognised as a significant attribute of effective technologies.

Minister Brito, as Patron of the Focus Group, and ongoing dialogue and action between attendees, suggested the next Focus international forum be held in Maputo, Mozambique, in 2005.

Washington Meeting with 10XE Project Co-ordinator Odd-Even Bustnes

(Nick Palousis)

During the Poverty Eradication meeting in Washington DC, I was fortunate enough to stay with Odd-Even Bustnes from the Rocky Mountain Institute, and his lovely wife Priscilla. We were able to further discuss the 10XE project: the success of the first phase and the optimism towards Phase Two of the project, suggested to begin in September of this year. Phase Two will consist of delivering 6 core case studies of engineering design exhibiting Factor 10 resource productivity through Whole System Design. On behalf of TNEP I'd sincerely like to thank Odd-Even and Pricilla for their fantastic hospitality and wholesome conversations during my stay.

Alan AtKisson tour: Meetings and workshops in Brisbane and Adelaide

Brisbane: Cheryl Paten

TNEP was invited to attend a 'Sustainability in Queensland Business' event hosted by the EPA Sustainable Industries Division (SI Division) on 24 May, 2004. Facilitated by TNEP mentor and co-author of *The Natural Advantage of Nations*, Alan AtKisson, the aim of this event was to bring together a group of motivated and champion industry representatives (about 40 participants) for a day's workshop session in Brisbane. All participants had a previous working history with the EPA through programs and partnerships. We would like to thank John Cole, Director of SI Division for his invitation and subsequent reinforcement of TNEP initiatives to the participants.

The day was also extremely beneficial in facilitating the sharing of experiences across industry sectors, about key projects, key obstacles and lessons learnt. The outcome of the day's session was a list of four initiatives to be followed up by working groups: Social Venture Development (examining opportunities to effect change through financiers/ Chief Finance Officers/ 'purse string' holders within organisations); the Value Chain, a simplified star rating system for industry in general; and the formation of partnership clusters within Queensland Industry. TNEP looks forward to being part of the partnership clusters discussion.

Adelaide: Nick Palousis

I recently had the pleasure of training with Alan at a workshop held in Adelaide, South Australia (following his Brisbane visit). The workshop, facilitated by Alan, brought together 40-or-so of Adelaide's key stakeholders for the direction of the city's sustainable development efforts. Primarily covering his Pyramid and ISIS concepts (outlined in *The Natural Advantage of Nations*), Alan skilfully guided the workshop participants through a collaborative process that quickly developed strong stakeholder relationships for a sustainable Adelaide. This was a truly effective workshop, with so much achieved. I'd like to offer my deepest gratitude to Alan for guiding me through the workshop and activities; the TNEP team are looking forward to working with AtKisson's tools and training in the future!



Alan facilitating the recent workshop in Adelaide

Australia's Future Summit (Michael Smith)

TNEP was invited to attend the Future Summit, which invited plenary speakers of the highest quality: Bob Carr, Kevin Rudd, Malcolm Fraser, Paul Davies (science writer) and Johnathon West Harvard among others. Many of the attendees were from traditionally 'non-sustainability' areas, including treasury departments, finance departments and the department of prime minister and cabinet. Over three days the Summit heard about progress on issues of sustainability, with much discussion regarding sustainability and the 'non-converted'. The exercise, seen as a success by the Australian Davos Connection, will be repeated again next year.

I was fortunate enough to spend time over the three days talking with Michael Roux (Head of the Australian Davos Connection), Malcolm Fraser (ex-Prime Minister of Australia), Graeme Pearman (one of the country/region's greatest scientists, recently retired from CSIRO), Alexandra De Blas (ABC Earthbeat Reporter), Dr Anna Dacro (Principle Research Officer, House of Representatives Committee Office) and Niki Vincent (SA Sustainability Roundtable). Each of these contacts is keen to hear more about various TNEP initiatives, and we will be keeping them informed of progress and opportunities.

ASEAN Australian Engineering Conference, Malaysia (Charlie Hargroves)

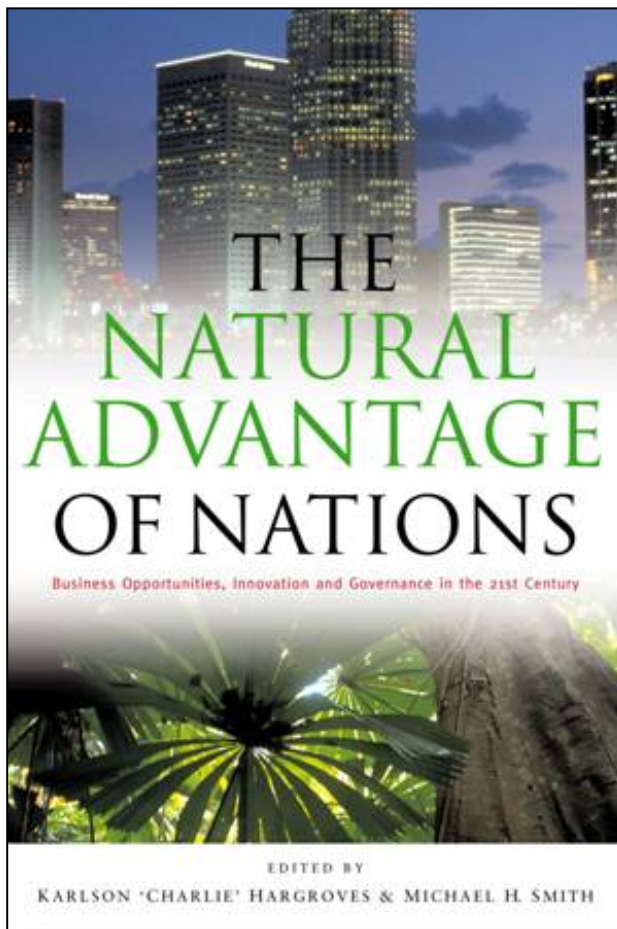
On the way to the US and as a representative of TNEP I had the opportunity to attend the ASEAN Australian Engineering Conference, along with many of the senior Engineers Australia staff including the President, Doug Jones. I had the pleasure of presenting straight after Doug and continued his lead on how Australian engineers are focused on achieving a sustainable future. TNEP is very grateful for the support from Engineers Australia and in particular the support from Doug Jones.

RAIA – Queensland: Profiting from Sustainable Communities (Cheryl Paten)

Given TNEP's interest in including the Royal Australian Institute of Architects (RAIA) in our 'whole of society approach', I attended the Brisbane event of a national tour by John Doggart, an engineer and architect who headed up ECD, a renowned firm in the 1970s in London. The event, called 'Profiting from Sustainable Communities', was sponsored by the Year of the Built Environment. Danielle McCartney, an Australian who has worked in Belgium and Australia, who was also touring with John and Stephen Berry (AGO Buildings Finances and Government Team) gave an introduction to the presentation. The presentation gave TNEP an opportunity to see what case studies are being advocated to Australians as best practice. The talk provided a balanced mix of over 16 international and national case studies about sustainability in the built environment, including both high-rise buildings and subdivision developments. Where appropriate, some of the case studies presented will be incorporated into the education module (in the section on Greening the Built Environment).

Current Project Initiatives:

The Natural Advantage of Nations



We are pleased to announce that the final draft of *The Natural Advantage of Nations* has gone to the publishers and would like to thank those that helped with the peer review and editing. We have gone through an exhaustive peer review, and Rob West from Earthscan has commented that this will be the most peer reviewed book ever! TNEP believe this is remarkable, especially given that most of the book's co-authored contributions have partially appeared already in peer reviewed journals, or won awards. In all our updates we have sought to give credit where it is due and feature short biographies on all the co-authors of the book. In the next update we will provide links to and summaries of the bios for NAON's forward writers and the remaining co-authors not yet featured in TNEP updates.

Work has now begun on the official companion web site to the book (through the [TNEP web site](#)). The aim is that through the book and companion website, we will reference and link to a selection of the key additional studies and reports. Some of the

key references in *The Natural Advantage of Nations* are already on the site, and over the coming months we will build a companion to each chapter so that the reader can freely download whatever interests them. We believe that through a 'generational exchange' approach to the book, we have been exposed to what experts from many fields feel are the key papers. Hence, a read through *The Natural Advantage of Nations* and companion website will literally save years of hunting for the best material currently available related to sustainable development!

However, producing a book is just one part of the process. The promotion and dissemination phase is equally important. Many co-authors have entrusted us with an overview of their life's work, so we believe that it is our duty to ensure that it reaches as many organisations and individuals as possible. If you would like to purchase copies of the book, or assist in promotional activities, please contact the Secretariat. Thanks must go to EA Books and Engineers Australia for agreeing to assist in the distribution of the pre-order copies promoted on the recent Hunter Lovins tour. This allowed us to offer a significant discount to all those who order the book before September 2004. Order forms can be freely downloaded from [the TNEP web site](#). Over 5000 order forms were taken on the Hunter Lovins tour of Australia and New Zealand. Hunter and Alan AtKisson have also kindly offered to take a significant role in promoting the book in North America and Europe respectively. We express sincere thanks also to 'Japan for Sustainability' and Alan AtKisson for allowing TNEP secretariat member Cheryl Paten to visit Japan with Alan to talk about the book and translation opportunities.

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. As the focus and understanding of sustainable development improves, we are finding great local examples of people making a real and positive difference here in Queensland. *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**

Engineering Sustainable Solutions Program: Introductory Module 1

The team are on the ‘home stretch’ to completing the first module of the Engineering Sustainable Solutions Program (ESSP), funded by the Engineers Australia Environment College. Members of the Environmental Engineering Society provided a very thorough critique of the material through an appointed review committee and have made valuable contributions to the development of the material. TNEP was invited by Griffith University’s Environmental Engineering School to trial a portion of the education module material within an existing first year environmental engineering course. Four of the six units were trailed over a period of two weeks and a feedback form was given to each student in both teaching weeks.

Comments provided in the feedback form respondents comprised the following:

- “Great info, starting to understand the role of enviro engineers. Nice presentation style - conversational. Maybe too much info - good info though!”
- “Very good and interesting”... “Fantastic”... “Brilliant”... “Very good.”
- “It was really, really good. When it was beginning to get dull, she (Cheryl Paten) made it interesting, therefore holding our attention.”
- “I thought it was a really good presentation! Thank you but ... 3 hrs is a bit too long.”

TNEP is using this feedback and the extensive review comments provided by the Environment College to finalise the module. The following pages outline the content developed in this module. This initiative was coordinated by Cheryl Paten and the content delivery was headed by Michael Smith with support from the TNEP team. Thanks to Roger Dennis for his copy-editing work and the Environment College for their thorough review process.

Given the importance of this material, we have provided an excerpt from the Trainer’s Guide: the following few pages summarise the material developed.

Technical Unit 1: A New Perspective

- Part i) Setting the Context: A Global Summary
- Part ii) What Has Lead to a Lack of Sustainability?
- Part iii) Platform for Change: Sustainability a Driver for Innovation and Enabling Technologies
- Part iv) Implications and Benefits for Global Development
- Part v) Fitting into the Picture: Engineers & Sustainability

Technical Unit 1, *A New Perspective*, aims to set the context for incorporating sustainable development into the engineering profession. Part i) begins with a ‘global summary’, a context from which the call for sustainable development emerged, highlighting key events such as the Rio Earth Summit in 1992. Part ii) elaborates on the reasons for the sudden urgency for sustainable development, exploring the core reasons for the current unsustainable situation, such as ever increasing pressures on the planet’s natural ecosystems and natural resources to provide for the increasing global population.

Part iii) describes other drivers contributing to our unsustainable lifestyles, but then indicates that these drivers also create opportunities and stimuli for innovation. Taking these opportunities seriously, Part iv) describes how using sustainability as the foundation for future development will show the way forward in resolving conflict over resources, reduce the number of environmental refugees, help sustain human settlements and ensure environmental protection. Finally, Part v) places the engineering profession within the context of sustainability, highlighting how engineers can have a significant impact on progress toward sustainable development.

Technical Unit 2: Learning the Language

- Part i) What Does ‘Sustainability’ and ‘Sustainable Development’ Mean?
- Part ii) Other Commonly Used Terms
- Part iii) Sustainable Genuine Progress
- Part iv) Measuring Progress: Indicators

Technical Unit 2, *Learning the Language*, aims to describe the terms, boundaries, and existing tools that define the terms ‘sustainability’ and ‘sustainable development’. Part i) aims to define such terms, referring to key documents such as the Brundtland Report. The authors of this unit recognized the importance of defining key terms that closely partner with and explicitly define sustainable development. Hence, Part ii) aims to briefly introduce the terms ‘triple bottom line’, ‘ecological footprint’, ‘life cycle assessment’ and ‘whole systems thinking’. Of particular importance to the engineering profession is the term ‘sustainable genuine progress’, and Part iii) is dedicated to describing this term with reference to other commonly used terms. Finally, Part iv) aims to develop a simple yet crucial understanding: measurement matters. Unless reliable methods and clear indicators can be developed to measure the sustainability process, it will be impossible for governments, business and communities to be accountable.

Technical Unit 3: Preparing to ‘Walk the Talk’

- Part i) Agenda 21: A Whole of Society Approach to Sustainable Development
- Part ii) Effective communication: Within and Between Societal Groups
- Part iii) Community Engagement and Strategic Questioning
- Part iv) Restoring and Building Community and Trust: Corporate Governance & Social Responsibility
- Part v) Economics, Business and the Market
- Part vi) Sustainable Cities: Designing for Legacy

Technical Unit 3, *Effective Communication*, aims to show how it is possible for nations to adopt holistic, whole of society approaches that actively engage with key stakeholders to achieve sustainable development. Part i) describes Agenda 21, which shows how business, government, civil society and the education sector, to name a few, can all play their part. Part ii) describes how multi-stakeholder processes require effective communication across the professions and “silos of society”. Part iii) describes strategic questioning and the development of ‘community engagement strategies’. Part iv) demonstrates the significance of building trust between business and society to achieve sustainable development and shows how encouraging democratic processes will do much to restore trust in our institutions. Part v) introduces the role of the environment as a vital element for sustaining business and the global economy, and Part vi) will introduce the concept of ‘designing for legacy’, which describes design that ensures future generations’ needs are met.

Technical Unit 4: Energy Use & Greening of Industry

4a: Profitable Greenhouse Solutions (Energy Use)

- Part i) Greenhouse Abatement: Why does Global Warming Matter?
- Part ii) Enabling Greenhouse Technologies
- Part iii) Barrier Busting Strategies That Work
- Part iv) Profitable Reductions in Greenhouse Emissions

Technical Unit 4a, *Profitable Greenhouse Solutions (Energy Use)*, will provide engineering students with an introduction to the challenges and opportunities for greenhouse emission abatement. Part i) will inform students how the latest work in ‘greenhouse’ and ‘global warming’ research has reached the conclusion that human induced climate change is statistically significant and an urgent issue. Part ii) will describe possible solutions to these pressing issues by showing that it is in fact possible, with a good policy mix and present day technologies, to simultaneously meet a nation’s Kyoto Protocol commitments and grow the economy. Part iii) aims to briefly introduce students to barriers facing the adoption of greenhouse abatement strategies and the methods by which these barriers can be overcome. Finally, Part iv) describes how energy, transport and urban systems, like the climate system itself, have great inertia: they take decades to change. This means that in order to achieve significant reductions in greenhouse emissions, and to avoid the worst effects of climate change, early planning and action is critical for these systems.

4b: Greening of Industry

- Part i) Drivers for Change to 'Greening Industry'
- Part ii) Principles of Green Chemistry: Benign by Design
- Part iii) Eco-Effectiveness of Design
- Part iv) Industrial Design

Technical Unit 4b, *Greening of Industry*, introduces the challenges and opportunities facing the chemical industry in achieving sustainable development. The Unit begins with Part i) introducing the influence that economic and environmental drivers are having on industry, particularly the chemical industry, in causing it to increasingly reassess methods and processes in product manufacture. Part ii) focuses on Green Chemistry, describing the 12 basic principles that can be used as a guide when redesigning chemical processes to reduce or eliminate environmental impacts, while maintaining high yields. Part iii) introduces the concept of 'eco-effectiveness', its comparison to the familiar 'eco-efficiency', its benefits to the sustainability agenda and application to engineering design. Finally, Part iv) introduces the process of developing 'green' solutions through an industrial design methodology known as 'whole systems engineering'. By considering the system as a whole (*all* the parameters affecting the final outcome of the design process) sustainable solutions can be created that meet social, environmental, economic and cultural needs, as well as being super-efficient.

Technical Unit 5: Greening the Built Environment & Sustainable Urban Transport

Unit 5a: Greening the Built Environment

- Part i) Reasons for Change in the Building & Development Industry
- Part ii) Barriers to Change within the Building & Development Industry
- Part iii) From Pioneers to Systemic Change: Industry-wide Reform
- Part iv) Design Practice Reform

Technical Unit 5a, *Greening the Built Environment*, introduces the challenges and opportunities for the built environment in achieving sustainable development. The Unit begins by Part i) raising awareness that the built environment is one of the most exciting areas where significant gains can be made in moving towards achieving sustainable cities. Part ii) then alerts students to the existence, among sustainability experts, of perceived barriers to the successful implementation of green developments. It is important to note that these are perceived barriers and may not be the case everywhere. Part iii) aims to make clear that a critical shift is required to move forward: a behavioral change brought about by a critical mass of people willing to adopt and evolve sustainable principles and practices in the built environment. Finally, Part iv) introduces the notion that design practice reform is about ensuring that 'thinking green' is a focus of the entire design process, requiring collaboration and mutual incentives to drive the team to a new level of achievement.

Unit 5b: Sustainable Urban Transport

- Part i) Characteristics of Urban Transport Systems
- Part ii) The Importance of Urban Form
- Part iii) Smart Growth
- Part iv) Designing Around the Mind: Understanding People
- Part v) Occupational Health & Safety: Moving Forward

Technical Unit 5b, *Sustainable Urban Transport*, introduces the challenges and opportunities for the development of sustainable urban transport in Australia. There are numerous examples in Australia and internationally that demonstrate the benefits of ‘greener’ transport systems (i.e. transport that brings significant improvements in economic, social and environmental wellbeing). Part i) will demonstrate to students how the majority of industry continues to create inefficient transport systems and developments that consume excessive amounts of materials and energy. For example, some authors argue that since European historical trends show roads growing alongside the economy, road building must be essential for economic growth. The focus of Part ii) is to explain that, since we now know roads generate traffic, we realise the association is the other way round: economic growth means more roads and more roads means more traffic, with its associated problems. Part iii) explains that transport systems are not solely influenced by physical planning factors. The planning and transport policy measures used to improve urban transport have been strongly influenced by political processes. Part iv) discusses, within the context of urban transport, the necessity for effective communication strategies and questioning techniques in planning scenarios, to ensure that the most appropriate transport systems are enabled in our growing cities. Finally, Part v) suggests ways of moving forward to develop sustainable urban transport in Australia. By learning from the success stories of Curitiba, Brazil and Toronto, Canada, we now face unique opportunities to become world leaders in sustainable urban transport design. Through key projects such as the Australian Conservation Foundation’s *Natural Advantage: Blueprint for a Sustainable Australia*, government, business and society can move forward to overcome the challenges created by the current urban transport dilemma.

Technical Unit 6: Water & Waste

6a: Water – Nature’s Gold

- Part i) Water Supply Management: Lessons from the Past 50 Years
- Part ii) Every Drop Counts: Water Efficiency & Regulation
- Part iii) Keep it Clean: Water Quality & Treatment
- Part iv) Water to Eat: Sustainable Agribusiness

Technical Unit 6a, *Water: Nature’s Gold*, introduces the global challenges of water shortage and the opportunities for these to be successfully overcome by business and government. Part i) is dedicated to delivering the educational message that at a time when water availability is a key concern, it is important to consider water services holistically. While the benefits of reliability of water supply from damming rivers are clear, significant social and environmental impacts can result from design decisions about water storage. Part ii) illustrates how internationally much is being done to improve water efficiency in urban regions. In Australia, state and local governments are initiating water-saving programs to introduce regulation and introduce water-efficient technologies into residential, commercial and industrial properties. Part iii) introduces students to the issues confronting water quality

management and the financial benefits of implementing environmentally sound water treatment systems based on bio-mimetic principles. Finally, within the context of agriculture, Part iv) aims to develop an understanding that consideration of natural land capability, and how to use water efficiently, are critical for optimising agricultural productivity.

6b: Achieving 'Zero Waste': From Value Chains to Value Loops

- Part i) What is Waste? Benefits of a 'No/Zero Waste' Strategy
- Part ii) Examples of 'Zero Waste' leadership by Governments
- Part iii) Enabling Technologies, Resource Recovery and Organic Recycling
- Part iv) Closing the Loop on a Wasteful Economy

Technical Unit 6b, *Achieving 'Zero Waste': From Value Chains to Value Loops* addresses the issues and opportunities facing the waste industry. The educational aim of Part i) is to indicate that it is in business' best interest to minimise these costs, which means reducing the amount of raw materials and other inputs needed to create product or services. Part ii) raises awareness of how local and international governments are now recognising the opportunities arising from 'Zero Waste' initiatives, which encourage business to commit to dramatic waste reductions. Such initiatives are succeeding in improving resource productivity, emissions reduction, industrial clustering and job creation. Part iii) describes how, by focusing on separating organic waste from inorganic waste (including innovations to transform inorganic packaging to organic, compostable packaging), it is possible to both reduce landfill volumes and increase the return of nutrients back into farming soils. Part iv) aims to raise awareness amongst students that for resource processing industries to genuinely compete in a 'closed-loop economy', technological challenges must be addressed in radical energy efficiency improvements and zero waste processes. A significant paradigm shift must occur in the mindset of the engineer and the 'corporate executive' to identify cost savings through sustainable design.

Environs Australia: Local Government Database Project



Following on from data gathered in the first half of the year, TNEP are continuing to work through the members list for Environs Australia to gather information suitable for integrating into their website (www.environs.org.au). Each member is being asked to provide a short profile for the internet, and up to three stories on sustainability related initiatives. The database is taking shape and members are looking forward to being able to search the country for local government sustainability initiatives by other Environs members. Environs has also been busy collating information about non-member councils in Australia. It is anticipated that once TNEP has completed the members database, Environs Australia will workshop options for building on from this information. The aim is to have a truly dynamic and interactive website that encourages members to talk with each other, accelerating change towards sustainability.

TNEP is assisting Environs Australia to develop:

- i. Best practice content development: development of the database of best practice information, projects and initiatives to be accessed by Environs members, drawing on the detail from council profiles, academic journals, and TNEP research.
- ii. Council Profiles Pages Update: working through the Environs Member Database to profile the sustainability achievements and objectives of Environs' members.
- iii. Contributions and editorial review for 'Local Environs': preparing material for development of the Best Five Minutes member update and the quarterly Local Environs newsletter. This includes continuing to provide relevant national and international case studies to show best practice in local environmental initiatives.

Queensland EPA Sustainable Industries Division: Industry Inventory Project

TNEP have recently completed a partnership project with the Queensland Environmental Protection Agency to compile an information resource for the Sustainable Industries Division on Industry activity in Queensland. The partnership involved working with the Division to produce an inventory of baseline data on the current status of resource usage efficiency around the state. In addition, the partnership developed a Queensland focused inventory of best practice case studies relating to eco-efficiency. The data-intensive report looked at industry activity within the state and considered the capacity for industry to move towards more sustainable operations. TNEP will be using some of the aggregated statistics gathered through the project for future educational material and publications. Our Project Officer, Cheryl Paten, is also extremely grateful for the opportunity to sit within the Division for six months to learn how such an organisation is working to effect change in industry. We would like to extend our thanks to the Sustainable Industries Division and particularly John Cole for his support throughout the project foresight in seeing the benefit of a partnership process to achieve this resource, for the Agency and for TNEP. Thank you to Peter Vance, a staff member within the SI Division, who worked tirelessly to help deliver the data analysis and report.

Solutions for a Sustainable Future: Focus Publishing

TNEP have played a lead author role in a major national publication, *Australia Worldwide, Solutions for a Sustainable Future*. The publication will showcase the Australian expertise, products and services in sustainable development, and place Australian-based companies on the world stage as business partners of choice. We have developed a series of company profiles for supporting companies wishing to globally promote their efforts and successes in best practice to assist Australia in achieving a sustainable future. Twenty public and private organisations nationwide have agreed to participate. Furthermore, TNEP have authored a chapter of the *Australia Worldwide* publication titled, 'Tomorrow's Technologies', which details the successes of Australian-based organisations in the innovation and exportation of solutions to assist sustainable development. It is anticipated the publication will be publicly available in early December of this year.

Human Productivity Improvement (HPI) (Nick Palousis)

Following a visit to Japan by Charlie mid last year, on the way to RMI, I recently visited Japan to touch base with TNEP supporter Professor Masayoshi Takahashi. Professor Takahashi is the author of the Human Affiliated Program for Productivity Improvement (HAPPI). HAPPI aims to dramatically improve industrial productivity and competitiveness in developing countries through enhancing the ‘corporate culture’ of companies, and has already experienced success in countries such as Poland, India, Jordan and Oman. TNEP will be co-authoring, with Takahashi and others, a Human Productivity Improvement (HPI) manual, integrating the HAPPI methodology and the business strategy works of Professor Gen-Ichi Nakamura, for encouraging sustainable development through corporate culture. (Refer to the TNEP website under Project Initiatives for more information.)



Nick and Professor Takahashi in Tokyo, Japan

Upcoming Initiatives

If you are keen to be involved in these project initiatives, please contact the Secretariat.

NAON Training Program

Our first priority is to follow up the book and web site of *The Natural Advantage of Nations* with a solid companion guide and training program, where:

- The companion guide will be available for readers who need assistance in working through the publication; and
- The training program, titled the ‘Natural Advantage Critical Literacy Training Program’ will provide teachable material that covers the key concepts of the book in a classroom format. It will focus on competency development and capacity building through providing a structured program to work through the key concepts, case studies and core material related to Sustainable Development.

It is intended that the guide and program will be complimented by an online database with access to updated information, material, resources, and best practice case studies through the TNEP website (www.naturaledgeproject.net). Readers or participants in the training program will be directed to such additional online support material to assist them in their personal development through the training program.

We are very pleased to announce that the Queensland EPA Sustainable Industries Division has agreed to provide a grant to develop the training program over the coming months and have further agreed to trial the training course with both internal staff and a group of clients.

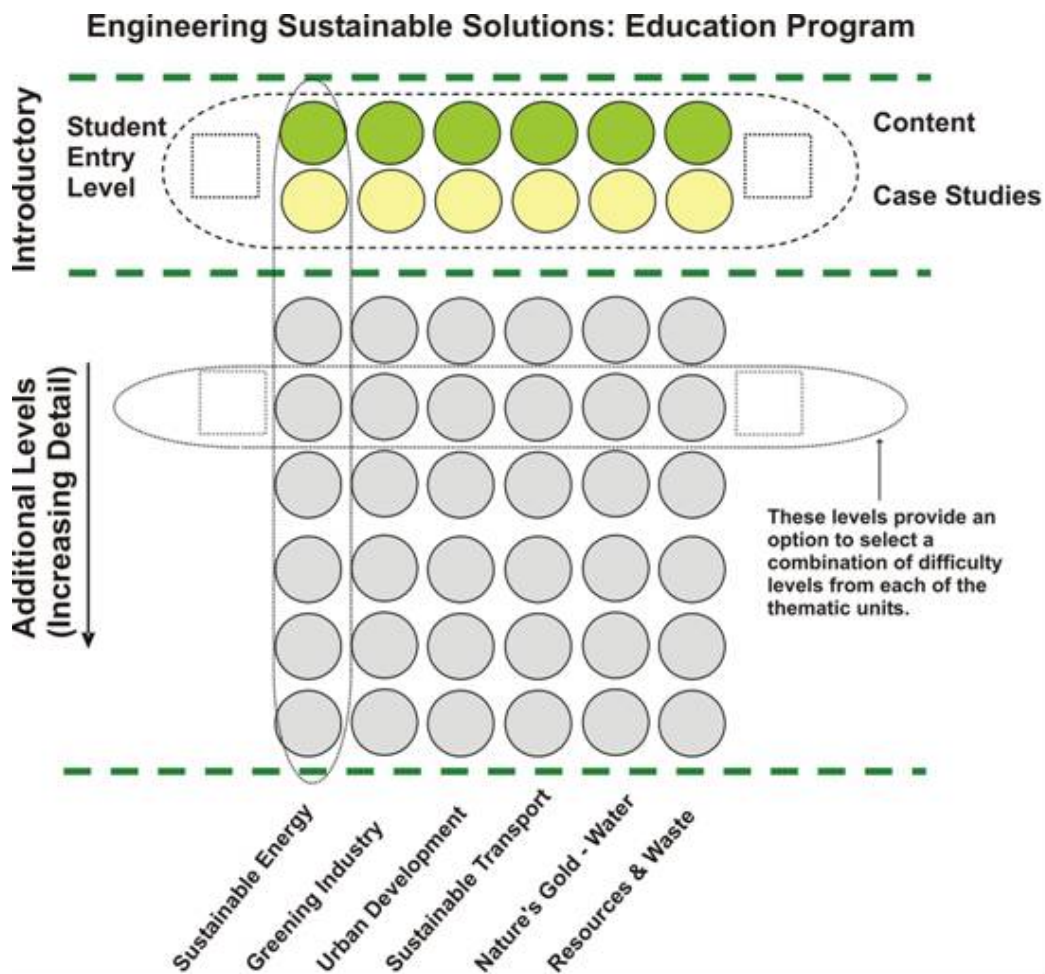
Engineering Sustainable Solutions Program: Introductory Module 2

During development of Module 1, it soon became apparent that there was not enough space within the unit framework to cover case studies for Unit 4 to 6 in detail. It is considered critical to expose students/trainees to such case studies in the various engineering disciplines (urban development, transport planning, industry etc.) to help them to understand the concepts and content presented in practice. TNEP is therefore currently undertaking a conversation with the Engineers Australia Environment College to provide a further grant to develop a second module to complement the Introductory Module 1. The second module will focus on case study material that will further expand on the core concepts presented in the first module by selecting key cases and showing the operational detail. A preliminary proposed table of contents for such a module is available on request. The examples are a mixture of Australian and international case studies to give the students/trainees knowledge of activities locally and where best practice is occurring around the world.

The intent is that the material will then comprise a 2-Module Introductory Course, with one module focused on concepts and content, and the second focused on current best practice examples. As the units are independent, the course material may be mixed depending on the audience and learning outcomes, allowing for full flexibility in focus. For example, depending on the length of a particular subject, these units may be interspersed with Unit 4 – 6 of Module 1, forming a single larger module. As for Module 1, this initiative responds to the “overarching responsibility for engineers in the application of our engineering education, training and experience to provide excellent sustainable engineering solutions for the benefit of our employees, clients and the community”.

Engineering Sustainable Solutions Program: Level 1 Modules 1- 6

We are very pleased to announce that after negotiations with Tony Marjoram, TNEP will be partnering with the United Nations Education, Science and Cultural Organisation (UNESCO) to develop six Level 1 Modules to build on from the Introductory Modules developed with the Environment College. The partnership will develop the six key topics to expand Technical Units 4-6, providing a technical engineering focus for delivery amongst engineering students and professionals as shown in the figure below. The Level 1 Modules will further allow ample flexibility and clarity for dissemination amongst developing and post-conflict countries; it is anticipated the modules will be delivered to coincide with the launch of the UN Decade Campaign for Education in Sustainable Development (2005-2015).



New TNEP Publications

The process of compiling *The Natural Advantage of Nations*, and the nature and breadth of the field of sustainability, meant that there was far more worthy content than could be fitted into this first publication. David Suzuki said of his most recent book, *Good News for a Change*, that they had enough material for 10 books. TNEP had a similar experience in the process of developing NAON. Hence, to truly do justice to the remarkable work of significant academics, the simplest solution is to aim to do additional publications. Two major areas have emerged:

- i. A book for business schools and policy makers (*Sustainable Business Practice*); and
- ii. *The Natural Advantage of Nations Vol. 2: Exceeding the Millennium Goals*

If either project interests you, detailed project briefs with full rationale and those involved thus far can be sent to you upon request.

Sustainable Business Practice

TNEP will be assisting in the development of a practical book and web site for business and business schools that is relevant to policy makers, as highlighted in Chapter 10 of *The Natural Advantage of Nations*. We propose that there is significant potential for bringing together Hunter Lovins' work, where she and others at Presidio World College have achieved an accredited MBA course for business schools in the USA that embeds sustainability throughout the entire course, with the work of other remarkable people (many of whom are already associated with TNEP). The current strategy is to incorporate the material with the

work of Hunter Lovins and colleagues to develop an operational fieldguide to both NAON and *Natural Capitalism*. Building on from the Sustainability Helix presented in Chapter 10 of NAON, the book will deliver the detail for each of the themes and stages to form a kind of taxonomy for firms to benchmark their activities and identify strategies to move forward more sustainably. The main co-authors/editors will be Hunter Lovins and Christopher Juniper, from Natural Capitalism Inc, and Charlie Hargroves and Mike Smith from TNEP, with contributions from many of both Hunter's and TNEP's network and partners, such as Alan AtKisson, Roger Burritt et al and Prof. Masayoshi Takahashi.

The Natural Advantage of Nations II: Exceeding the Millennium Goals

In Update 11 we announced a proposal to produce a book on exceeding the millennium goals through sustainable development, developed through a whole of society approach with supporters such as Hunter Lovins; Professor Bernard Amadei-Founder of Engineers Without Borders (Boulder-Colorado); Alan AtKisson; Roger Burritt; Michael Fairbanks, Neal Donahue and Andrew Smith from On the Frontier; and Sasha Courville, along with many more teams from OECD and non-OECD countries. We have decided to call this book (quite simply!) *Natural Advantage of Nations II*, as it adds to the lessons learnt and projected in NAON, bringing in significant information on fields such as Economic Growth Theory. The 'NAON II' full proposal with rationale, potential synergies, list of those already committed, and a detailed list of topics is available on request.

A summary of our key reasons for developing an authoritative overview book and website in this area is provided below:

- i) Firstly, NAON focused largely on whether it was possible to achieve competitiveness and sustainability simultaneously at the firm level. Out of that research it became clear that whether it is climate change, transport systems, cities, energy systems, recycling and waste, a transition to sustainability need not significantly harm economic growth, as measured by GDP, and may even assist it. If economic growth was measured with a Genuine Progress Indicator, rather than GDP, then the results would be even more remarkable. Hence, we can demonstrate that, from the vast amount of new literature we have assembled, an updated overview of the economic growth vs. sustainability debate is needed. Michael is working with Phillip Sutton to develop this synthesis chapter that will be available for comment on request within three months. Better understanding economic growth and sustainability will then form a foundation for discussion on how best to achieve the millennium goals.
- ii) Secondly, there have been significant advances in relating how productivity gains from innovation at the business/firm level positively effect macroeconomic growth. This provides further economic insights into how the sorts of resource productivity gains through better design can assist economic growth. This new field of economic is called 'new economic growth theory' is being pioneered by people like Paul Romer.
- iii) Thirdly, we live in a world where government, business and civil society all have real power. Therefore, we need a new theory of governance to show how these three actors can work together better to achieve sustainability. While NAON brought together many of the pieces of the puzzle, there are still more. One key development has been the increased role of civil society as defacto-regulator, through such developments as civil society run independent certification and accreditation schemes. Dr Sasha Courville, ANU, has already contributed an important paper from her research on these new forms of governance to be combined with the work of Hunter Lovins on this topic for NAON II.

- iv) Fourthly, due to word constraints in NAON there were significant topics that we could not include. For instance, we only had room to tell half the story on Sustainable Cities.
- Topics such as waste and recycling and sustainable agriculture, that were not covered in NAON, will be in NAON II. For instance, Dr John Scheirs, one of Australia's leading plastic recycling experts, has already contributed a remarkable paper on plastic recycling. David Dumaresq, who runs ANU's Human Ecology program, has already assisted us in the development of the chapter on sustainable agriculture. David has worked in the field both in practise and as an academic for over 15 years. He lectures in ANU's courses on sustainable agriculture.
 - It was impossible to cover issues associated with mining, metal recycling, and metals in sustainable development within the word limit. We thank Brigitte Hall, from the Institute of Mining and Metallurgy, and Trisha Caswell, who at the time was Director of RMIT Global Sustainability, for their help in developing this chapter for now NAON II.
 - Other key topics, such as health and sustainability, that were not covered in NAON will now be covered in NAON II. Dr Colin Butler, from ANU's National Centre for Epidemiology and Public Health, has already submitted a great chapter on this topic for NAON II.

The Natural Advantage of Nations II will build on from NAON to bring a new perspective to issues such as environment and trade, technology transfer, and global governance issues generally. These issues are important and relate profoundly to the possible future options for development trajectories of developing nations. After reading *Natural Capitalism*, Bill Clinton stated that this had led him to a "big idea", namely, that developing countries and fast growing emerging economies could leapfrog traditional heavy fossil fuel dependant development trajectories. Sadly, however, it is often the opposite that is occurring. For instance, whilst great progress has been made in the OECD to eliminate the use of asbestos, a certain OECD country has simultaneously been complicit with its firms in encouraging developing countries to mine and use asbestos. Hunter Lovins, on her recent tour of Aust/NZ, stated several times that the practise of dumping old inefficient technologies on the developing world is just as criminal as the drug trade. Yet eco-tech transfer is not even on the political agenda.

Other key reasons for developing an authoritative overview book and website in this area include;

- The signing of the Equator Principles by 22 major banks that are collectively responsible for 70 per cent of loans to the developing world.
- IFC, Sustainability Ltd and The Ethos Institute published the Business Case for Sustainability in Emerging Economies in 2002, the first ever 'large survey' to test the notion that there is a business case for sustainability in emerging economies.
- The World Bank, the Asian Development Bank, UNEP and UNDP have published major reports on sustainable development within the development context in the last three 3 years, demonstrating the start of a shift in major institutions.
- The development of various GHG exchange mechanisms, such as the Chicago Climate Exchange, providing a market for things such as carbon sequestration activities to produce Carbon Financial Units.

This motivation is not simply to just do another book. Rather, it will compliment possible future TNEP activities, where the Project could:

- work with the On The Frontier Group and Natural Capitalism Inc in developing countries;
- study with Professor Bernard Amadei, founder of Engineers Without Borders (USA);
- work with UNESCO in their efforts regarding education in sustainable development for engineers based in developing countries;
- work with the World Federation of Engineering Organisations' COMTECH. One of the main projects of COMTECH is sustainable cities: to help better advise authorities responsible for fast growing cities, especially in Asia;
- work towards exceeding the Millennium Goals: making a clear statement that none of the other goals will be achieved in a lasting way without progress on sustainable development; and
- showcase countries that are making progress on reducing corruption and increasing transparency, a key to ensuring that development aid has a chance to achieve what it was intended to do. TNEP believes that lessons from these countries need to be more widely known.

Upcoming Reports on Tours/ Events:

- Event:** **GAP Forum on Sustainability: Sydney**
- Date & Access:** 30 June 2004, by invitation
- Web Link:** <http://www.globalaccesspartners.org/eventenvir.htm>.
- Rationale for Attending:** TNEP met with Bjorn Stigson, President of the World Business Council on Sustainable Development, Geneva, who lead discussions during the forum.
TNEP used this forum to build relationships.
- Event:** **Students of Sustainability 2004: La Trobe University, Melbourne**
- Date & Access:** 11-17 July 2004, by application
- Web Link:** <http://sofs.org.au/>
- Rationale for Attending:** Michael presented at this conference and listened to debate about issues, visions and ideas leading to an open space of strategies for social change
- Event:** **Australian Campuses Towards Sustainability: Griffith University**
- Date & Access:** 30 September – 1 October 2004, by application
- Web Link:** <http://www.acts.unsw.edu.au/2004/>
- Rationale for Attending:** Cheryl is intending to present a paper at this conference to highlight our work with education modules in this area.
TNEP anticipates that the information will be used to further our work in raising awareness through education modules.
- Event:** **Business Leaders Forum for Sustainable Development: Melbourne**
- Date & Access:** September 2004
- Web Link:** TBA
- Rationale for Attending:** TNEP has led a young professionals delegation to this for the past two years, with Charlie speaking and sitting on the steering committee in 2003, through the generous support and mentoring of Molly Olsen and Phillip Toyne.
- Event:** **Engineering Education in Sustainable Development 2004, Barcelona**
- Date & Access:** 27 –29 October 2004, by application
- Web Link:** <http://congress.cimne.upc.es/eesd2004/frontal/default.asp>
- Rationale for Attending:** TNEP will be presenting at the conference on the education module that we have produced for undergraduate engineering students.
This is, internationally, the centre of discussion for engineering education in sustainable development. We will be keen to hear what other groups and countries are doing in this area to investigate further opportunities.

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

- [AtKisson Inc](#)
- [Australian Conservation Foundation](#) (ACF)
- [Australian Green Development Forum](#) (AGDF)
- [Australian Virtual Engineering Library](#) (AVEL) – Sustainability Knowledge Network
- [The Barton Group](#)
- [Business Council for Sustainable Energy](#) (BCSE)
- [Centre for Green Chemistry, Monash University](#)
- [Centre for the Encouragement of Philanthropy in Australia](#) (CEPA)
- [Commonwealth Science, Industry Research Organisation](#) (CSIRO)
- [Environment Business Australia](#) (EBA)
- [Environment Institute of Australia and New Zealand](#) (EIANZ)
- [Environs Australia](#)
- [Green Innovations](#), [EcoFutures](#), [Arup](#), [DesignInc](#) and [Hatch](#)
- [Global Sustainability at RMIT](#)
- [Institution of Engineers Australia](#) (Engineers Australia)
- [International Council for Local Environment Initiatives](#) (ICLEI)
- [International Young Professionals Foundation](#) (IYPF)
- [Natural Capitalism Inc.](#) (NCI)
- [Nature and Society Forum](#) (N&SF)
- [New Zealand Business Council for Sustainable Development](#) (NZBCSD)
- [Queensland Environment Protection Agency – Sustainable Industries Division](#)
- [Rocky Mountain Institute](#) (RMI)
- [Sudan Virtual Engineering Library](#) (SudVEL)
- [Triple Bottom Line Australia](#)
- [University Leaders for a Sustainable Future](#) (ULSF)
- [UN International Environment Technology Centre](#) (IETC)
- [World Federation of Engineering Organisations - ComTech](#) (WFEO)
- [Young Engineers Australia](#) (YEA)