



THE NATURAL EDGE PROJECT

Supported by:



Greetings to the supporters and teams of [The Natural Edge Project](#).

From all of the team at TNEP we hope you have enjoyed the festive season and have recharged your batteries for what is shaping up to be a very busy year. It is an interesting and exciting time for the TNEP team as we make the transition from our first big initiative, the book, into subsequent initiatives and activities that we have been developing in the background. The main focus for 2004 will of course be promotion of the book and in the development of education material and study guides. The team will be developing entry level capacity- building material to compliment the publication and to provide a useful tool to learn about key issues, barriers, solutions and strategies emerging to achieve a sustainable future.

Mike and I have the pleasure to officially welcome two of our close friends and colleagues to the secretariat for the project, Cheryl Paten and Nick Palousis. Both young engineers have proven their commitment and enthusiasm many times over and have now found a professional home at TNEP. Recently we have also seen one of the projects founders, James Moody, leave to follow other interests and we wish him the best of luck in his endeavours. We have many people to thank for assisting in the development of the publication and subsequent initiatives, however a special thank you is extended to our partners and families who have really stepped up to support our team, particularly in the last few months. Mike's family hosted the fourth Secretariat Retreat in Melbourne recently and there have been many contributions in undertaking the tedious job of proof reading final drafts – it has been a truly collaborative effort.

With regard to details, we are in the process of updating the website, and this will provide the best way to keep up to date, together with these bulletins. We are looking forward to a very active year and thank you all again for your ongoing support to help us make a difference.

Kind Regards

Karlson 'Charlie' Hargroves
Project Coordinator

Michael Smith
Content Coordinator

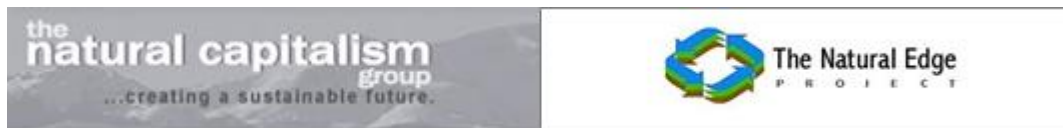
Cheryl Paten
Projects Officer

Nick Palousis
Projects Officer

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New Partner Profiles

Natural Capitalism Inc (Hunter Lovins)



The Natural Edge Project (TNEP) and Natural Capitalism Inc (NCI) are pleased to announce the development of a formal partnership to focus on furthering the implementation of sustainable development internationally. NCI applies whole-systems thinking to business issues, harnessing the powerful forces of the market in service of environmental and social sustainability. NCI's consulting and educational services to companies, governments, and academia are grounded in the principles outlined in *Natural Capitalism*, co-authored by one of our founders, Hunter Lovins, along with Amory Lovins and Paul Hawken.

In regards to the relationship between the two organizations, Hunter Lovins points out that, “*The Natural Edge Project is one of the most important projects in the world – bringing the ideas of Natural Capitalism to life and describing in detail how to move forward its implementation.*” The first of many joint initiatives will be the upcoming Australian/New Zealand tour from Hunter Lovins in order to launch and promote the TNEP publication – *Natural Advantage of Nations*. The tour will cover 7 cities and 2 countries over a 4 week period from March 25, 2004 to April 15, 2004.

Project Supporter: ICLEI

[ICLEI–Local Governments for Sustainability](#) is an international association of local governments implementing sustainable development. ICLEI's mission is to build and serve a worldwide movement of local governments to achieve tangible improvements in global environmental and sustainable development conditions through cumulative local actions. Building a worldwide movement requires that ICLEI functions as a democratic, international association of local governments. Serving a worldwide movement requires that ICLEI operates as an international environmental agency for local governments.



More than 445 cities, towns, counties, and their associations from around the world are full Members of the Council, with hundreds of additional local governments participating in specific ICLEI campaigns and projects. As a movement, association, and agency, ICLEI continues to work towards its environmental and sustainable development goals.

Sudan Virtual Engineering Library - Sustainability Knowledge Network (*SudVEL-SKN*)

Recently TNEP Coordinator, Charlie Hargroves participated in a project at the University of Khartoum in the Sudan, supported by UNESCO in partnership with Australian Virtual Engineering Library (AVEL-SKN), World Federation of Engineering Organisations (WFEO), Sustainable Alternatives Network (SANet) and the Foundation Ecole d'Ingenieurs (EPF) through the International Institute of Women in Engineering (IIWE). What follows are excerpts from the operational report. View stage site at <http://maaly.net> and in a few days the main page will be updated at <http://library.ses-sudan.org>.

The project sort to illustrate how communication and collaboration between engineering institutions and organisations internationally can improve the transfer of technology and information needed to achieve sustainable development globally. A major challenge for institutions in developing countries is the digitisation of the hard copy materials held by research institutions, organisations and groups. Access to this material together with a growing number of relevant international sources must underpin the capacity building and training of engineers. In order to provide access to core materials for students and researchers there is a need to build localised databases base in education and research institutions in developing countries that can be accessed offline. The contents of such databases can be quality controlled by the research institution in order to tailor material to the needs of the local users.



The *SudVEL-SKN* database is intended to contribute to research, education and practice in sustainable development in the Sudan. The library will be a part of the learning environment for the University of Khartoum's Faculty of Engineering and Architecture and Institute of Environmental Studies containing both local sources and a selection of international materials. The library will provide easy and efficient offline local access together with international access to students, researchers and academic staff. *SudVEL-SKN* will also provide Sudanese contributions to the UNESCO/WFEO Virtual Engineering Library for Sustainable Development and contribute to the Proposed Sudan National Digital Library.

Databases such as this are needed in every country to draw out local material and ensure technology transfer from international sources into the curriculum of engineering students and researchers. Access to such information particularly in developing countries will make a positive contribution to the pursuit and attainment of the millennium goals. Universities and professional bodies in all national have a key role to play in achieving the goals with support from groups such as UNESCO, WFEO and IIWE.

The virtual library will be serving as an information services unit in the field of engineering and sustainable development. The contents of the library will be as follows:

- Referral database of engineering institutes and organizations in Sudan.
- Referral database of Sudanese experts and faculty members in Engineering.
- Sudanese literature in engineering: research papers, thesis, dissertation, books, reports, etc.
- Selected international contents in engineering for sustainable development.

It is expected that the *SudVEL-SKN* will increase information transparency, promote research and higher education in engineering and assist projects in sustainable development throughout Sudan and the greater region. It is intended that the database will provide a resource to support research and education in the Faculties of Engineering at in Sudanese universities and as a broader resource throughout the region and internationally.



The changing faces of the TNEP Secretariat, a farewell and two welcomes...

The Natural Edge Project is driven by a team of young professionals and researchers and in short, we are the generation that the previous generations committed to save the environment for. It is our responsibility to take this challenge on as a central motivating principle and use the lessons from the last 30 years to ensure the next 30 are different.

TNEP was founded in October 2002 by (left to right) James Moody, Charlie Hargroves and Mike Smith, pictured here shortly after meeting Amory Lovins at Parliament House.



This combination brought together three very active young people with a focus on strategy, operations and research respectively. Each member with a passion for making a positive contribution to the achievement of a sustainable future. Thanks to the amazing support received from Engineers Australia, CSIRO and CEPA Trust the project was able to build a strong base that has since grown into a strong body of research and a collaborative network of many pioneers and leaders in sustainability. Throughout the development of the project the team has received amazing support and mentoring from the projects Advisory Boardⁱ and Steering Committeeⁱⁱ.



In order to support the project and provide opportunities for young professionals and researchers to build mentoring relationships with senior leaders and experts TNEP formed a Working Groupⁱⁱⁱ (Pictured beside). The Working Group acts in many ways to support the project through assistance in the development of material and initiatives of the project.



The working group seeks to provide a platform for researchers and professionals, across and between generations, to actively engage in achieving “sustainable genuine-progress”. Members of the working group are shown here with Vice President Al Gore, Fiona Wain (EBA) and Tricia Caswell (GS@RMIT) at the 2003 Business Leaders Forum on Sustainable Development organised by Molly Olsen and Chaired by John Hewson.

Recently the core group for the project has seen a changing of the guard with James Moody moving on to focus on other endeavours and Cheryl Paten and Nick Palousis accepting an invitation to join the secretariat of the project was accepted by shown below during a Secretariat Retreat in Adelaide recently and we welcome their enthusiasm and commitment to the project.

We wish you the best
James!

Welcome to the Team
Cheryl and Nick!



A few words from Cheryl

Thank you for the welcome to the TNEP project team! After spending four years as an environmental engineer with Arup (an engineering consultancy), I am looking forward to new and exciting challenges presented by TNEP initiatives, particularly working with local government and developing educational material.

As a bit of background, I was born in Mauritius, a tiny island fringed with reef off the east coast of Madagascar with about 1.2 million inhabitants. My father's heritage is Indian-Mauritian and my mother is from Wales. On a number of trips to Mauritius when I was young, I witnessed an island struggling to balance its lifestyle with environmental values. After experiencing a 'pristine' bay full of rubbish on New Year's morning, I made a promise to myself that I would make a positive difference to such a 'state of affairs' during my lifetime. My home is Wynnum, Queensland and my aim is to effect change from here, at a local, regional and global level. I have a passion for environmental engineering and my career goal is to promote sustainable development in all aspects of my work. Although at the beginning of my career and a 'young engineer', these opportunities help me to engage with people from a wide variety of backgrounds. Work life balance is important to me, as is effective project management, to give each project my best effort.

Initially as a member of the TNEP Working Group and now as a full time team member I have been involved in the development of material for the soon-to-be-published book. Spending time in Adelaide and Melbourne at the secretariat retreats with the rest of the team, I have been focusing on text review and the development of the chapter on 'Greening the Built Environment' for Section 4 of the book. The chapter is currently in draft form, for review.

Thank you to TNEP for inviting me on board as a Projects Officer. In my previous four years with Arup I was involved in many urban development projects. My special interest areas were water sensitive design and sustainability assessments. Given my interest in effecting positive change through sustainability education and local action, I am very excited to now be in the position to follow these pursuits through TNEP. I look forward to getting to know the TNEP network as friends and sources of inspiration in the coming year.

Based in Brisbane, I am most grateful (on behalf of TNEP) for the commitment shown by the Queensland Division of Engineers Australia to the Project, as an extension of national support. Office desk space is available for TNEP use, and office staff have been extremely positive regarding ways to maximise opportunities presented by TNEP in Queensland.

A few words from Nick

Firstly I'd sincerely like to thank the TNEP team for completely changing the course of my life. I grew up in a humble Greek household in Whyalla, South Australia (a small bush-town centred around a big steelmaking plant) and moved to Adelaide in 1999 to follow my teenage aspirations in Robotics and Mathematical/Computer Science at the University of Adelaide. Challenging as it may seem I didn't believe I was studying something that was solving a 'real' problem, and being the kind of person that I am, decided to look for trouble (in a professional sense, that is!).

In 2001 I found my answer in an electronic article written by Charlie Hargroves during the embryonic stages of TNEP, where he passionately described the role of engineers in achieving a sustainable future. It made perfect sense. I contacted him instantly and gave him my full support and assistance where necessary.

Since then I have been fully committed to TNEP and working towards meeting the biggest problem our beautiful planet has ever faced. My varied travel and cultural experiences, work as a robotics teacher and public relations manager fuel my holistic approach towards sustainable engineering and natural competitive advantage. I aim to contribute to the assessment and commercialisation of eco-effective technologies, with an equal focus on both developed and developing countries. I further aim to assist in adding sustainable development to the agenda of current media paradigms. Primary focus at the moment is the development of the IOXE guide in partnership with the Rocky Mountain Institute and research into organisational change in collaboration with Professor Takahashi, Ritsumeikan University (reports below).

Outcomes of the Young Professions Australia Roundtable

As TNEP is driven by young professionals and researchers we are very keen to develop mechanisms for further involvement for young people passionate about sustainable development. In discussions with the Council of Professions President, past Engineers Australia President and mentor to TNEP Barry Gear we developed the proposal for the roundtable that was accepted and strongly supported by the members of the council.



The topic of the 2003 Roundtable was '*Achieving a Sustainable Future*' and was facilitated by TNEP. Due to the success of the roundtable, facilitated by TNEP, Professions Australia has made the commitment to focus the development of such a think-tank of young leaders regarding various issues related to the professions.

The aim of the Roundtable was to allow a selection of young professionals to actively focus on a particular theme, and develop material for their respective nominating bodies. Members of the Roundtable participated in a 3 months program involving various small group activities, electronic discussions and teleconferences. The following summaries represent the discussion and recommendations made at the roundtable. (Full reports available at <http://www.austprofessions.com.au/YoungProf.html>)

Higher education and sustainability - Kate West (Engineers Australia)

Sustainability will grow through awareness, and education is paramount to increasing this awareness. Subsequently education regarding sustainability is a fundamental first step. This involves education at all levels, primary through to tertiary, and also as part of our ongoing professional development. In order to promote sustainability through education, we recommend Professions Australia coordinate a discussion group for representatives from the professional bodies who are investigating and developing sustainability education material. This network can be utilised for the development of generic entry level modules on sustainability, whilst acting as a support network to encourage the individual professional bodies to develop discipline specific sustainability materials.

To ensure that sustainability is being taught appropriately, we recommend that the relevant professional bodies' university accreditation processes includes sustainability criteria. The role of Research and Development in achieving a sustainable future is also recognised. A position statement from Professions Australia highlighting their support for the role of research and development and appropriate collaboration is recommended. Each profession represented at the Young Professions Australia Roundtable has discipline specific actions that will be taken back to their relevant professional body for action.

Continuing Professional Development for Sustainability – Ana Govan (ACS)

As Ambassadors for professions we have a responsibility to ensure high quality professionalism is sustained through accessible life long learning and knowledge transfer structures. Professions Australia can promote integrated approaches to ongoing competency within a regulated framework and in doing so assist in the retention of membership of the individual professional bodies.

Professions Australia currently provides the structure that can facilitate a discussion group to formulate and feed into other groups to create consistent accredited modules for CPD programs on sustainability or ensure existing modules contain sustainability elements which follow on from those that are developed for inclusion in undergraduate programs. It also provides a conduit for professions to share the best ways to transfer knowledge between streams within their own professions and between those about to graduate and those needing to complete mandatory supervisory times.

Professions and Public Policy related to Sustainability - Brigitte Hall (AusIMM)

Many issues are common to each of the professions. Sustainability requires a collaborative and holistic approach to the way professions conduct their business. No longer can professions work in isolation within their specific disciplines. In the encouragement and facilitation of collaboration between the professions, it is recommended that Professions Australia approach its members individually when common issues arise and involve them in the public policy process. Joint submissions on inquiries and issues made by Professions Australia listing itself and its member contributions shows a united front and

provide a stronger lobbying force.

Young Professionals and Sustainability - Nina Quinn (ASA)

Young Professions Australia acknowledges and thanks Professions Australia for their support and encouragement of our roundtable. We recommend that Young Professions Australia Roundtable continues as the opportunity we have had for information sharing and subsequent identification of actions will provide deliverable outcomes for each professional body represented and Professions Australia overall.

Our final papers will be submitted to Professions Australia and we will continue as a working group to bring our actions to fruition. Additionally, we would like to increase representation on Young Professions Australia Roundtable and will target new professions to be part of this group in the future. We would also like to assist in increasing membership per se and participation of young members in each professional body. A list of suggestions/tips will be provided to Professions Australia as a tool its members may use to increase young member involvement in their specific professional bodies.

Integrated Approaches to Sustainability - Nicky Brennan (RAIA)

Integrated approach to lobby government, unified and consistent messages to policy makers. We recognize that Professions Australia already promotes integration and communication between the professions by its very existence. We recommend that Professions Australia encourage additional professions to participate and in do doing facilitate greater intercommunication among professions in Australia and beyond. We recommend that Professions Australia prioritize sustainability and its sub-topics as a regular agenda item and discussion area. We also recommend that Professions Australia develop a greater level of linkage amongst professions and associated professional bodies through its website, by becoming a holistic centre of information and contact. One outcome of the Young Professions Roundtable is to contribute content and links for the development of the website.

Content Update

We are very proud to report that we are well on track to deliver a truly world class publication to the publisher, Earthscan, by the end of March. Our initial target of January 15th was renegotiated in light of a series of high quality contributions from people such as Alan AtKisson and Michael Fairbanks. Also to ensure we have done justice to remarkable work submitted such as that of Jeff Kenworthy who has with his colleagues undertook the largest ever global analysis of transport systems. Their study involved 84 cities from developed and developing countries. In addition, the extra time has allowed us to incorporate material from;

- The work of Professors Drahos and Braithwaite co-authors of the international award winning book "Global Business Regulation".
- Dr Steven Boyden - one of the founding fathers of the academic field of Human Ecology which is a forerunner to the academic field of sustainability, Steven was featured in the Cambridge University Press's Eco-Pioneers of Australia book.
- Dr John Shiers, one of Australia's leading experts on Plastic Recycling.
- Along with John Cronin's PhD thesis research on Ethical Investment, Fiona Waterhouse's thesis on business and sustainability, a section from ICLEI on local government, our recently developed Sustainability Helix for the Firm and a range of new and updated cases and material.

During December and January we undertook a process to have our material viewed by Professor Michael Porter thanks to the support from Michael Fairbanks from On the Frontier Group. Professor Porter's response is awaited. (Michael Porter wrote the book 'Competitive Advantage of Nations' that together with 'Natural Capitalism' our book builds.)

To ensure that this book is suitable for a wide audience we seek to make it as user friendly as possible and are undertaking a series of peer reviews and content edits with a range of supporters and team members. We thank everyone for their constructive comments and feedback over the last 6 months. For instance we have ensured that the basis of the argument is clearly outlined the first section of the book and in each of the first chapters of subsequent sections. This means that the reader only needs to read the first section of the book to clearly see how all the pieces fit together and to then be able to easily find for them the areas of most interest throughout the rest of the book.

TNEP has been invited to join the editorial board for the CSIRO Publishing - ECOS Magazine. The first meeting was held recently in Canberra chaired by Molly Harris Olsen of EcoFutures. ECOS magazine has been CSIRO's main natural science magazine for over 25 years. Recently ECOS and EcoFutures have combined forces to give the new ECOS magazine a renewed focus on sustainability, science and business. With the Federal Government's EnviroBusiness Update magazine folding last year the new ECOS magazine will be one of the few Australian magazines reporting the latest in business and sustainability news, as well as the rigorous natural science for which ECOS magazine is famous.

It is a great honor to be invited and we will be contributing and looking for ideas for new stories over the coming years. ECOS magazine has for instance agreed to a regular joint column from TNEP and the Rocky Mountain Institute.

Profile of New Co-Authors

Bruce Paton – Ass. Prof. San Francisco University

Bruce is an Assistant Professor at San Francisco State University's business school. His teaching and research on corporate social responsibility draw on more than twenty years of decision-making experience in industry, government and higher education. His experience includes, serving as Executive Vice President for Rolltronics Corporation, a Silicon Valley start-up, managing manufacturing, quality, and environmental programs at Hewlett-Packard and consulting for Fortune 100 companies, start-up companies, government agencies, and not-for-profit organizations. He holds a BA from Wesleyan University, an MBA from Stanford University, and a Ph.D. from the University of California, Santa Cruz.

Paper to be developed into Chapter for publication: Paton, B. "Efficiency Gains Within Firms Under Voluntary Environmental Initiatives", *Journal of Cleaner Production* Vol. 9, 167–178 (2001).

Recent publications include: Paton, B. "Energy Efficiency and Greenhouse Gas Emissions: Correcting Market Failures Using Voluntary Participation Programs" 2003, Chapter 10 in *Voluntary Approaches in Climate Policy* (forthcoming from Edward Elgar); Paton, B. "Mental Models of Voluntary Environmental Initiatives", *Proceedings of the International Association for Business and Society*, Victoria, British Columbia, June 2002; Paton, B. "Voluntary Environmental Initiatives and Sustainable Industry", *Business Strategy and Environment*, Vol. 9, 328–338 (2000); Howarth, R. B., B. M. Haddad, and B. Paton, 2000. "The economics of energy efficiency: insights from voluntary participation programs." *Energy Policy* 28(6-7): 477-486; Haddad, B., R. Howarth and B. Paton, "Energy efficiency and the theory of the firm", *ACEEE Summer Study on Energy Efficiency in Buildings*, 1998; Paton, B. "Design for Environment: A Management Perspective", in R. Socolow, C. Andrews, F. Berkhout, and V. Thomas (eds.), *Industrial Ecology and Global Change*, Cambridge University Press, 1994.

Jeff Kenworthy – Ass. Prof. Sustainable Settlements, Institute for Sustainability and Technology Policy, Murdoch University, Western Australia.

Jeff is an Associate Professor in Sustainable Settlements with the Murdoch University Institute for Sustainability and Technology Policy. Jeff has Fifteen years experience in comparative urban research, consulting and policy covering the fields of traffic engineering, private and public transport, urban planning and design, housing and energy. Jeff has a range of policy experience with the Department of Planning and Urban Development and Department of Premier and Cabinet in Western Australia.

Research interests: international comparisons of transport and land use in cities; urban form and development patterns and their economic, environmental and social implications; transport management and policy; public transport systems; urban design and energy conservation in transport.

Recent publications include: [Sustainability & Cities : Overcoming Automobile Dependence \(Island Press, 1999\)](#); *Cities and Automobile Dependence: An International Sourcebook* (Gower, 1989); *Winning Back the Cities* (Pluto Press, 1992); *Moving Melbourne: A Public Transport Strategy for Inner Melbourne* (Inner Melbourne Regional Association, 1991); *Towards a More Sustainable Canberra: An Assessment of Canberra's Transport, Energy and Land Use* (ISTP, Murdoch University, 1991); *Housing, Transport and Urban Form* (Commonwealth of Australia - National Housing Strategy, 1993).

Project Initiatives Update

Industry Inventory Project – Queensland EPA [Sustainable Industries Division](#) (by Cheryl Paten)

The EPA is an existing project partner of the publication, Natural Advantage of Nations. We are happy to announce that the relationship between the Queensland EPA Sustainable Industries Division will continue. Further to discussions with the EPA last year, an opportunity has arisen with the Sustainable Industries Division to undertake eco-efficiency research in the areas of built environment/ urban development and agribusiness.

The aim of the collaboration is to provide Sustainable Industries Division with a framework for examining eco-efficiency endeavours by Queensland industry. TNEP is working in partnership with the Division to produce an inventory of baseline data on the current status of resource usage efficiency around the state. In addition, we are developing a Queensland focused inventory of best practice case studies relating to eco-efficiency. The initial partnership timeline is until April 2004.

Local Government Database Project – [Environs Australia](#) (by Cheryl Paten)

Environs Australia is an Australian non-profit organization that exists to assist local governments, organisations and individuals to implement sustainability in their regions, cities and communities. The vision of Environs is for Australia to become a leader in developing sustainable communities and assist in the transfer of knowledge and skills internationally.

TNEP is working with Environs Australia to deliver on a content strategy, for the organisation to develop and provide members access to sustainability-related material. We are now in the data gathering phase of the project and the initial partnership timeline is until June 2004.

Factor 10 Engineering (10XE) – [Rocky Mountain Institute](#) (by Nick Palousis)

The 10XE project, formerly known as the Design Integration Guide, is 6 months into a 3 year program in partnership with Rocky Mountain Institute. The team from TNEP will be working along side a team from RMI to develop the material and produce a publication to provide a snapshot of the technical side to 'Sustainable Engineering'. The development of 10XE is well on track with over 40 case studies having been sourced and 36 passing the preliminary screening process¹. Initially a majority of the case studies found related to the Mechanical and Civil Engineering disciplines, but as a better understanding of the case study criteria developed, a variety of case studies have been sourced from other engineering disciplines, including the areas of Agricultural, Electrical, Chemical, Software and Biosystems engineering.

Further case studies are being explored, however the primary objective is to deliver solid content of 30 case studies (traversing most fields of engineering) demonstrating Factor 4 – 10 benefits through whole systems design. In researching potential case studies, as well as those mentioned in publications such as *Factor 4* and *Natural Capitalism*, the context of the material must be brought to attention. Throughout the project we need to be constantly aware that the publication is a guide and each case study must clearly relay the message of whole systems engineering benefits to those using it, namely engineering students and professionals. Simple and elegant solutions are an essential requirement of each case study, and are by far the most attractive to the whole system designer.

The framework for each case study will remain a quantitative comparison between the conventional design and whole system design of an engineering application. Further analysis will be incorporated into each case study description where necessary.

(Further information can be accessed at http://www.naturaledgeproject.net/Whole_Systems_Design_Suite.aspx)

¹ A preliminary screen ensures each of the case studies match the primary requirements of: 1) Optimising the whole system, 2) performance improvements of factor 4 – 10, 3) have appropriate data to support performance claims, 4) tunnel through the cost barrier, 5) have high 'Brain Velcro'.)

Human Affiliated Program for Productivity Improvement – Professor Takahashi (by Nick Palousis)

To date, TNEP has completed the preliminary review of the Human Affiliated Program for Productivity Improvement (HAPPI), developed by Professor Masayoshi Takahashi from Ritsumeikan University (Kyoto, Japan). This stage of the project involved a thorough inspection of all HAPPI-related content and review of industry case studies. TNEP has concluded the HAPPI program to be a worthwhile project with applications in achieving organisational change for sustainable competitive advantage within business. HAPPI was found to be a simple-yet-effective and elegant methodology for developing the kind of organisational culture required for business to adapt to increasing external pressures from the surrounding industrial and physical environment. Primarily applied to the manufacturing industry with applications in the general business arena, HAPPI seeks to improve workplace productivity by setting clear and objective goals for both the company and its employees. It uses work from renowned business and management authors such as Michael Porter, Peter F. Drucker, Douglas McGregor and David Nadler.

Upon completion of the preliminary review, TNEP expects to host Professor Masayoshi Takahashi in Adelaide during March 2004 in preparation for a national tour in September. Takahashi will run a series of presentations to business and government officials on his experiences with productivity improvement and international competitiveness, as well as introducing the HAPPI concept. During his stay, Takahashi will guide TNEP through intensive mentoring sessions to further clarify the HAPPI concept and develop the foundation for an international HAPPI publication. TNEP is currently calling for supporters to support Takahashi's visit. Further to the development of an international publication is the initiation of the HAPPI Secretariat. The Secretariat will manage the distribution of HAPPI content and updates from the international activities of business implementing HAPPI in Poland, Jordan, India, Sri Lanka and Japan. (Further information can be accessed at <http://www.naturaledgeproject.net/HAPPI.aspx>)

Future Directions for the Project

People as far away as Alan Atkisson in Sweden have been asking us where does TNEP want to go? What is its vision? Michael Fairbanks's team have asked us what would be our dream projects to work on over the next decade? Currently TNEP is involved in several large projects as Charlie has updated you on such as the Factor 10 for Engineers (Whole System Design Engineering) Manual with the Rocky Mountain Institute. However any organization needs a long term vision and clear strategy. We believe that the following are the most cost effective ways we can value-add to existing work already being done in the world today over the coming years. For detailed proposals please see our web site under 'Project Initiatives'. All of these projects are focused on trying to gather the best, most useful information, and communicate it as effectively as possible.

- 1) **Education Modules on Sustainable Development for Engineers**, that follows up Section 4 of the book Natural Advantage of Nations. These would have more technical detail for engineers. UNESCO have indicated that they are very interested in collaborating in the development and publishing of such material. These would cover a broader array of engineering for sustainable development information than Factor 10 for Engineers and compliment the RMI project. (2004-5)
- 2) **Proposal to produce a “Achieving the Millennium Goals through Sustainable Development”** type book, with Hunter Lovins, Professor Bernard Armedai-Founder of “Engineers without Borders” (Boulder-Colorado) and Michael Fairbanks and the “On the Frontier” team and many more teams from non-OECD countries. The full proposal with rationale, potential synergies, list of those already committed, and a detailed list of topics is available on request. This idea comes from discussion with Hunter Lovins when we first met her in May 2003. (2005-6)
- 3) **Assist Hunter Lovins with the development of her book “The Human Dimensions: of Natural Capitalism”^{iv}**. We have had interest from several individuals from Australia to assist here. (2004-5)
- 4) **To assist nations adapt their national systems of innovation to meet the challenge of sustainable development**. This goes to the core of what our book Natural Advantage of Nations is all about. Paul Weaver, co-author of this section of our book, shares some of the work of the Netherlands “Sustainable Technology Development” project. The Netherlands work is refreshing in that it literally is the result of the Netherlands government biting the bullet and saying we have a problem, let's truly solve it. The

Netherlands work provides a detailed guide of how OECD countries can adapt their national systems of innovation to achieve sustainable development over the next 50 years. It is early days, but we are in discussion with Phillip Sutton, Director of Green Innovations Inc to develop practical achievable ways to further develop cultural exchange with the Netherlands Sustainable Development Technology project team to assist Australia. Copies of the landmark book can be purchased from Phillip Sutton^v. The first chapter can be freely downloaded online^{vi}. An article on the Netherlands work will appear in future additions of CSIRO Publishing's ECOS magazine.

- 5) **Help working group members to develop their initiatives.** In particular '[The Art of Choice](#)' campaign driven by Kate Clark from Canberra and Tina Jaskolski, an ANU PhD scholar from Germany to encourage children and parents to consider sustainable alternatives. Kate and Tina's goal is to raise awareness of the ecological, financial, economic and social costs of plastic bags and to increase the profile of alternative choices. With this project they aim to promote cloth bags as a valuable and useful alternative to plastic bags and want to raise children's awareness of both the environmental impact of plastic bags and their own ability to choose alternatives. The goal of the Art of choice is to reduce the ecological footprint through art, education and the promotion of alternative choices. The idea below has been successfully trialled at Campbell Primary School ACT. The essential idea is that if the children paint on the calico bags and take them home and ask their parents to use them.
- 6) Finally, we need to find creative ways to increase the number of people literate in sustainable development. The crux of the problem is that all jobs, all businesses have environmental and social impacts. Hence we need everyone in society with a basic literacy in sustainable development. **Therefore the final proposal that we are developing is for an ICON Books^{vii} style publication, an Introductory Booklet on sustainability.** This is motivated by the following additional reasons:
- Firstly the UN Decade of Education in ESD starts in 2005. UNEP and numerous government environment programs are interested in new ways to reach young people on these issues. Significant funding will be spent on this globally over the next 10 years. Hence it makes sense to find ways to team up with existing educational book series who already have global publishing and marketing networks.
 - Secondly, ICON Books already have over 40 titles in their "Introduction Series"^{viii} that already are in University and general bookstores all over the world but they do not have a title yet on sustainable development.
 - Thirdly, ICON Books have produced extremely high standard, concise 100 page summaries of complex fields from Post-Modernism to Jung to Quantum Physics with great cartoons and text. They contract experts in these fields to work with extremely talented cartoonists to create these booklets. We have made first contact and they are keen for our proposal. We are presently consulting numerous other sustainability experts to ensure that our proposal will involve and truly represent the range of expertise needed to ensure such a projects success.

If successful, an Icon Books book on sustainable development has the potential to reach the most people for the least cost of any ESD education initiative that we can think of. The ICON Books "Introduction to" series already cross markets all the other titles in the series on the inside of each booklets cover. An ICON book like this could also cross market in a further resources section at the back significant online resources for people. Again this idea has not just occurred to us overnight. All the work on the book Natural Advantage of Nations has given us the opportunity to consult and hear from many experts in the field. Also we have been involved with developing content for the award winning ANU Green Guide for the last 4 years^{ix}.



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

- [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](#)
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- [Environment Business Australia](#) (EBA)
- [Environment Institute of Australia and New Zealand](#) (EIANZ)
- [Green Innovations](#), [EcoFutures](#), [Arup](#), [DesignInc](#) and [Hatch](#)
- [Global Sustainability at RMIT](#)
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- [Nature and Society Forum](#)
- [New Zealand Business Council for Sustainable Development](#)
- [Queensland Environment Protection Agency – Sustainable Industries Division](#)
- [Rocky Mountain Institute](#) (RMI)
- [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)

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ⁱ See www.naturaledgeproject.net/AdvisoryBoard.aspx for a list of Advisory Board members.

ⁱⁱ See www.naturaledgeproject.net/SteeringCommittee.aspx for a list of Steering Committee members.

ⁱⁱⁱ See www.naturaledgeproject.net/WorkingGroup.aspx for a list of Working Group Members.

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- ^{iv} Stanford University: On 11 March 2002, Hunter Lovins and Walter Link presented *The Human Dimensions of Natural Capitalism* at the Expanding Context for Business breakfast meeting at the Stanford Faculty Club. www.theglobalacademy.org/nat_capitalism.asp
- ^v www.green-innovations.asn.au
- ^{vi} Weaver, P *et al.* Sustainable Technology Development Greenleaf Publishing (2000) www.greenleaf-publishing.com/catalogue/std.htm
- ^{vii} www.iconbooks.co.uk/intro.cfm
- ^{viii} www.anu.edu.au/facilities/anugreen/EMPC/EA-Award/2001_ceremony.html
- ^{ix} This ANU Green Guide is a 100 page introduction to sustainability booklet, a team effort of ANU students, supported by ANUGreen.