Green Skills – Powering a Better Future for Eco-Civilisation Construction

*Education & Industry Collaboration for Sustainability*

An Address to the CEAIE 2013 Conference

by Martin Riordan, CEO - TAFE Directors Australia

**Background**

The ability to create a better future depends largely on our capacity to innovate and educate.

A sustainable future requires that the economy, society and the environment have an equal place in the way we work, live and enjoy ourselves. - something Australia ns take seriously!

In addition, successful commercial approaches depend on having the flexible, multidisciplinary skills to respond to this changing context.

Education and the capacity to expand our knowledge as well as learn to think critically and holistically are integral in the development of a better future.

This Australian story on sustainability and technical education is a story that brought a great deal of integration between government and industry at the highest levels, to reform curriculum (we call this Training Packages), and motivate industry with co-contribution funding models for further skills training.

**Skills for Sustainability**

The development of skills for sustainability in Australia occurred over a number of years and has been the work of many. The steps to achieving the integration of skills for sustainability across the VET sector has been a partnership process which has seen significant efforts by individuals and groups as well as government and business.

- This began in 2000 when the Australian Government developed the world first Environmental Education for a Sustainable Future: National Action Plan and
- then in 2005 Australian national government initiated a national review of environmental education and its contribution to sustainability.


---

Living Sustainably: the Australian Government's National Action Plan for Education for Sustainability sets out a framework for national action that adopts the following four strategies to respond to the needs and priorities of education for sustainability.

1. 'Demonstrating Australian Government leadership' aims to strengthen the government's leadership role in education for sustainability as an exemplar for change through its own policies, programs and operations and by promoting system-wide change through greater coordination and collaboration with state, territory and local governments.

2. 'Reorienting education systems to sustainability' focuses on achieving a culture of sustainability in which teaching and learning for sustainability are reinforced by continuous improvement in the sustainability of campus management.

3. 'Fostering sustainability in business and industry' will build capacity in business and industry to plan for sustainability, adopt appropriate frameworks and tools, and harness incentives for change such as improved efficiencies, cost savings, corporate reputation, and staff morale and retention.

4. 'Harnessing community spirit to act' emphasises collaboration with the many diverse providers of education for sustainability to help improve community and practitioners’ access to knowledge and tools. It also supports research to better understand issues, attitudes and behaviour.

The Green Skills Agreement

Later in 2009, to build the capacity of the Vocational Education and Training (VET) sector to deliver high quality, industry-relevant skills for sustainability, the Australian and state and territory governments negotiated the Green Skills Agreement which was endorsed by the Council of Australian Governments in December 2009.

The agreement commits the Australian and state and territory governments to work with training organisations and business to ensure skills for sustainability are an integral part of all VET and are relevant to the needs of industry:

The four objectives of the agreement were:

- develop national standards for skills for sustainability instruction within the requirements of the national regulatory framework
- upskill VET practitioners so they can provide effective training and facilitation in skills for sustainability
- review and revise National Training Packages to incorporate skills for sustainability
- implement strategies to re-skill vulnerable workers in the transition to a low carbon economy.

The review and revision of National Training Packages by Industry Skills Councils to include skills for sustainability was substantially completed by January 2011.

This Agreement was supported by an Implementation Plan with funding to up-skill teachers and trainers, undertake research and analysis and assist Industry Skills Councils (agencies responsible for the development of national training programs for all industry sectors). The up-skillling of teachers in the VET sector continues to this day with the roll out of the Graduate Certificate in Education and Training for Sustainability and scholarships to support this post graduate training.

The International Green Skills Network

---

As part of the COAG Green Skills Agreement there was a need outlined in the Implementation Plan to develop a Network or Community of Practice, Australia wide which would support and enhance the role of teachers in Skills for Sustainability. As a result TAFE Directors Australia, applied for funding through the Commonwealth Government to establish the International Green Skills Network.

The Network was established in late 2012 and launched at the TDA Conference in Perth. The first step in developing the Network was to develop a business and marketing plan for the Network. Having established this, the next step was to establish an Advisory Board with a range of people with knowledge of industry, university, government and the VET sector. The current Board membership consists of two CEOs from Industry Skills Councils, a CEO of an Industry Association, CEO of a TAFE Institute, a researcher in Education for Sustainability, CEO of a marketing company, CEO of a VET Professional body, CEO of a private sector VET training provider, a government representative and the CEO of TAFE Directors Australia. The membership is therefore made up of influential people with initiative and drive to ensure the Network remains relevant and successful.

The Director of the IGSN was then able to develop a set of criteria for Network membership under the guidance of the Board. It was decided that the membership would be free of charge but those who were to be part of the Network had to fulfil at least 7 of the criteria outlined below:

- The organisation demonstrates leadership and commitment to delivering skills for sustainability.
- A strategic plan is in place to achieve education for sustainability (EFS) across the organisation
- There are at least 5 programs/courses in teaching and learning incorporating EFS/sustainability skills
- Best practice sustainability resources, pedagogy and delivery methods are used to deliver EFS
- A workforce development plan is in place which supports EFS/sustainability skills
- The organisation supports alliances and partnerships to achieve EFS
- The organisation has established systems to manage and share knowledge in EFS
- The organisation is responsive to the latest EFS research findings, teaching methods and technologies

The Network logo was developed through an International competition and the logo was determined through a voting process of the Advisory Board. The logo is now used by all members of the Network to promote their green credentials.

The Network also surveyed all TAFE Institutes to determine what their requirements of the Network might be. The results of this survey were used to develop the main programs for the Network.
the TAFEs surveyed included access to the latest research in EFS, resources for teachers, grants assistance, being part of exchange programs and a regular e-newsletter. Newsletters and other useful information can be found at http://www.tda.edu.au/cb_pages/the_international_green_skills_network.php

Our current membership includes approximately 30% of TAFEs in Australia and a small number of private providers. The membership continues to grow with new members joining each month. The coordination of the Network includes:

- Developing a regular e-newsletter
- Setting up Webinars with speakers and topics of interest
- Providing assistance to Institutions
- Developing partnerships Internationally and Nationally
- Researching the latest resources and research
- Delivering presentations at Conferences and seminars
- Developing exchanges of staff and students

A recent exchange program

A recent exchange program was undertaken with funding from the National Science Foundation in the USA with the arrival in Australia of 16 faculty staff and Deans from a range of Community Colleges in the USA. The particular focus was on Renewable Energy in particular solar, wind, geothermal, energy efficiency and bio-energy. The Create Center (Link: http://www.create-california.org/) which has a strong focus on renewable energy received the funding from the National Science Foundation in the USA for this delegation in partnership with Mindy Feldbaum from the Collaboratory. The 16 delegates were interested in learning about a range of activities in Australia in relation to renewable energy and visited Educational Institutions, CSIRO – Energy Flagship, Industrial bioenergy plants, Government officials, industry associations and experts specialising in renewable energy. The tour was developed over a period of 2 weeks and each member of the tour was required to present papers and their research findings in the USA on their return.

As a result of this exchange program a number of TAFE Institutes in Australia and an equal number of Community Colleges in the USA have developed a virtual community to develop resources and learning material to support their teaching practice in renewable energy. These resources will be shared across a range of institutes over the coming months.

Mentoring Indonesian Polytechnics

Changes in the VET sector – survey results in 2011

The Culture in TAFEs - Most (83%) Institutes had a current sustainability plan, strategy or policy and half of these were adopted before 2009 when the Green Skills Agreement was signed; two had been in place since 2006. Fifteen Institutes (78%) set sustainability targets and most included environmental indicators such as electricity, gas, energy efficiency, water, waste, carbon emissions, fleet vehicles, asbestos and renewable energy. Four Institutes (21%) also included teaching and learning in their targets. Ten of the Institutes (59%) have a formal Environmental Management
System (EMS) in place and four are certified under ISO14001. On average, operational sustainability managers spent about 20% of their time on sustainability matters. Sustainability recognition through awards has grown over the last few years, with a number of awards being won by 10 Institutes (53%).

**Curriculum in TAFEs** - When asked about implementing sustainability education on campus, 13 (81%) Institutes cited active programs. More specifically, nine Institutes listed education programs about sustainability and four Institutes (25%) specifically listed Educational for Sustainability (EfS).

Across the 11 Institutes that responded to the question, an average of 30% courses/qualifications on scope included sustainability competencies. One Institute had embedded sustainability in all courses offered as is possible under the restructured training packages.

Some Institutes (69%) offered specific training in green skills / sustainability for workers in trades and professions whilst most Institutes (94%) offered one or more “green” or “sustainability” qualification, these often included more traditional courses such as conservation and land management. In some cases, student enrolments have been relatively high in these courses.

The approach to Professional Development (PD) in sustainability varied considerably. Of the 17 Institutes responding, 30% of teachers had undertaken PD in sustainability. In most cases, PD has been offered through courses that offer a basic introduction to sustainability (‘Sustainability 101’), some through full qualifications in sustainability, particularly the Diploma of Sustainability, or units in sustainability such as the MSA unit Implement and monitor environmental sustainability. In five Institutes, PD programs have included Education for Sustainability, often through the Vocational Graduate Certificate in Education and Training for Sustainability, PD which more focused on the pedagogical skills of engaging learners in sustainability learning than in simply teaching sustainability content. Not surprisingly, 11 (65%) institutes have offered PD in specific technical green skills to achieve industry competence, often in green trades.

**Community Engagement in TAFEs** - There was a modest response to questions on local community engagement in sustainability projects (households, businesses). Several Institutes, mostly regionally-based, have strong community, regional and industry partnerships in sustainability, forming a key component of organisational strategies for both operational and educational sustainability strategies. One Institute is well connected to the training aspects of the Solar Flagships Project (Moree Solar Farm) initiative.

**Overall changes in VET**

Research undertaken in 2011, demonstrated that green skills had been incorporated in many of the training programs in VET. A recent Gen Green Surveys (2011) also demonstrate that apprentices & trainees see there has been a significant take up of green skills in workplaces over the last 3 years. Their understanding of green skills in the work place has increased. The number of responses saying they had ‘no idea’ about sustainability skills across all categories was down from 25% in 2008 to 11% in 20115.

Overall, the majority of courses being delivered by trainers and teachers in the VET sector include aspect sustainability in their course work. There was a 57 percent annual increase in the number of learners enrolled in one or more unit of competency or courses in the 2010-2011 period (from 83,000 in 2009 to 130,000 in 2010). There was also a significant growth in green skills enrolments in Electro-communications, Service Industries, Manufacturing, and Innovation and Business Skills.

This will eventually see an impact emerge in industry and changes are being seen already particularly in the larger companies. The International Green Skills Network continues to support the work of teachers in the field and increasingly more teachers are realising the importance of the on-going development of their skills for sustainability.

---

**In conclusion**

The building of a better future and a more sustainable future requires a range of policies, processes and approaches. There is no doubt that the economic, environmental and social aspects of a society need to be given equal importance and that a sustainable future requires innovative thinkers who are prepared to accept the change which will be needed. Capacity building in green technology development and green growth in all aspects of business will be essential in driving a wiser use of resources and a more considered society.

Education and skills for sustainability will be an integral part of this future but will require government commitment to change through legislation and then the required changes will need to be implemented in a thorough and systematic way. Business, community, government and individuals will be the key to ensuring a successful outcome to a more sustainable future, so consultation along the way will be essential. Networks of organisations will also ensure the on-going building of knowledge and skills and will be important in maintaining momentum.