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## In Perspective

### Education critical to going beyond business as usual

###Pic: Cheryl Desha.jpg###

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### **As government and industry grapple with 21st century challenges, building the capacity to look at complex problems through fresh eyes is critical.**

A number of management systems have evolved over the last decades to organise and document environmental commitments. Despite these attempts to overcome silo-thinking and create systemic processes, there is still a tendency to focus on bureaucratic reporting rather than engage in a transformational process towards sustainable operation.

So, what is missing for society to make a significant shift beyond business as usual? How do we deal with servicing the needs of seven billion people while not compromising other species, or future generations of our own species?

When we look back over the last 200 years and the industrial revolution, we can see a number of waves of innovation, such as innovating for society-wide electricity, telecommunications, petrochemicals and so on.

Within this context we can observe a rapid ramping up in the amount of data and information we have been exposed to over this time. As the waves followed each other we made many improvements, but we also came to appreciate how much more there is to know.

Furthermore, the sixth wave of innovation we are currently experiencing brings with it an additional, perhaps unprecedented, challenge: to address the impacts of the previous waves of innovation as well as furthering our prosperity.

### **Peaking and tailing**

Like a car towing a trailer, economic growth currently occurs with a host of environmental pressures. If we can decouple this – as we might a trailer from a car – then we have the prospect of economic growth without greenhouse emissions.

In Europe in particular there are a number of precedents for doing this, including for particulates and ozone-depleting gases. Given the degraded nature of many of our ecosystems there is also a further imperative to ‘recouple’ – or connect a trailer full of positive impacts – to economic growth.

In many of the problems where we are considering decoupling, we are talking about ‘peaking’ (stopping the growth of the negative pressure) and then ‘tailing’ (reducing the amount of negative pressure over time, as economic growth continues).

Thinking about greenhouse emissions for example, peaking can be considered as generally being a short-term issue (over the next decade or so) using current thinking and technology, while tailing has a much longer agenda of many decades, which may include significant shifts in thinking and technology.

So capacity building for peaking and tailing are quite different. Furthermore, the challenges for peaking are short-term, requiring action from current leaders in our companies, organisations and government. In contrast, the challenges for tailing are longer-term, requiring action from future leaders who may be only just completing school studies now.

### **Education imperative**

Finally, there are varying points in time at which sectors are experiencing dramatic shifts in regulatory and market operating conditions, which we have referred to as the 'time-t' imperative.

The challenge of capacity building is a form of risk management. For some organisations this involves acting before 'time-t', undertaking a whole of organisational approach to reconsidering the way activities, products and services are delivered. For others it involves acting after the shift has occurred, emerging in a highly competitive market.

Within this economic context, a key emerging question for our research is, how do we rapidly build capacity amongst professionals and future professionals to facilitate a transition to sustainable development?

In the context of engineering education, for example, within Engineers Australia there are a number of required competencies for graduating engineers and engineers seeking chartered status. In both stages the requirement for sustainability related knowledge and skills is also clear.

Yet research funded by the National Framework for Energy Efficiency (NFE) and the federal Department of Resources Energy and Tourism points to clear gaps in what is being taught in the higher education sector versus industry needs, and in the provision of supporting materials to assist educators in this endeavour.

It is no wonder that society is currently struggling with the enormity of the challenge, in the absence of a curriculum or resources to support a significant transition to education for sustainable development.

With this time imperative for action in mind, and in this era of uncertainty, it becomes clear that education plays a core role in driving industry beyond business as usual. It is critical that the education sector builds capacity among our current and future leaders – through postgraduate and undergraduate studies – to drive a significant shift in practice across all sectors in society.

*<i>This article is based on a presentation by Dr Cheryl Desha to the SSEE 2011 Conference 'Escaping Silos', held in October 2011, Brisbane. Cheryl and Charlie are members of The Natural Edge Project research group, an Australian sustainability think tank hosted by QUT, University of Adelaide, Curtin and Griffith University.</i>*

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