Submission to Inquiry into a Sustainability Charter

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General

The Integrated Sustainability Analysis (ISA) group is a research team at the University of Sydney, bringing together expertise in environmental science, economics, energy technology, social science, ecology, climate modelling and climate change, water and waste technology, agriculture, education, engineering, computing, mathematics, atmospheric science and ocean dynamics, nuclear physics and dosimetry, and material science.

ISA develops leading-edge research and applications for environmental and broader sustainability issues, and offer consultancy to organisations such as companies, government agencies and NGOs in a broad range of areas. Our aim is to continuously develop and improve in a multi- and inter-disciplinary way scientifically rigorous, quantitative, consistent and comprehensive approaches for integrated environmental, social and economic assessment.

ISA expertise is very relevant to the discussion of a Sustainability Charter and we welcome this SC initiative. It is timely and very important to consider reliable indicators for Australia's sustainability journey. The establishment of regular national environmental accounts, in analogy with our national economic accounts, is an essential platform for national policy development and decision making. A movement to more generalised national accounts is occurring world-wide and at present Australia is not at the forefront. A coordinated approach at all levels of governments, at statistical agencies, and in the public sector more generally, is required. ISA's submission mainly concerns the development of quantitative *indicators and reporting*, rather than to the establishment of targets, to which indicators and reports relate. We briefly outline two of our research outputs that demonstrate this.

In 2005 ISA and CSIRO published a ground-breaking report ***Balancing Act*** which is an analysis of the performance of 135 sectors of the Australian economy across 10 sustainability indicators. (http://www.isa.org.usyd.edu.au/publications/balance.shtml). This report represents real sustainability benchmarks for the whole economy, established using a consistent and robust methodology. Regular updating of this world-first report would provide very useful information for national policy development.

For the last five years or so, ISA has undertaken the fundamental calculations for many **ecological footprints** in Australia, such as for state governments, corporations and for populations (see http://www.isa.org.usyd.edu.au/publications/documents/Ecological_Footprint_Issues_and_Trends.pdf, and various other reports on www.isa.org.usyd.edu.au). Dr Manfred Lenzen, the leader of the ISA group, is currently working with Mathis Wackernagel of the Global Footprint Network to develop consistent international standards on footprint methodologies. The ecological footprint is a very powerful concept for describing the *unsustainability* of populations and one that is now firmly in the public's mind. It allows reasonable comparisons between countries and over-time and therefore should definitely be part of a Sustainability Charter.

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Specific comments on questions for consideration

- **aspirational statements** are important but they should not be at the expense of targets. ISA research allows the setting of unambiguous targets (eg. emissions per dollar of GDP in an economic sector)
- some new **research** is required but many of the existing ISA technologies can support a SC
- some **existing standards** can be applied to an SC, but many of these, though useful, are "micro" in focus, whereas macro standards and indicators are required
- the SC can be **integrated in all levels of government** provided the indicators are well formulated, for example, as per dollar figures, or other useful metrics such as per kg of product, etc
- the relationship between an **SC and SoE reporting** is a key consideration. The aim should be to integrate them (their functions are different) as much as possible.
- **National Competition Policy** as an incentive: we feel this is a little premature – indicators and measures have to be further developed before this aspect is considered
- **cultural and social value** can be measured in an SC, and indeed are very important components of sustainability. However, their inclusion needs considerable further development than those for environmental issues and perhaps are better considered a part of SC "mark II".

Built environment

- **greenhouse gas emissions, water, energy, material use etc** targets are all applicable to the built environment and can meaningfully be assess in terms of per capita, per square metre of floor area, per land ha, measures etc.
- **existing buildings** can be ranked in such a way too
- **heritage and 5 star ratings systems** can be incorporated.

Water

- there are many measures for the sustainability of water provision, agriculture, catchments and biodiversity, etc. The objective should be to develop well-defined but widely applicable indicators.
- development of good **water quality** indicators is difficult (but important), but even the **water quantity** area requires much further work (eg, better national water accounts)

Energy

- **energy measures** are arguably the most well-developed and well-defined. However, even these require further development before they are incorporated in an SC.
- **Renewable energy** quantities are again readily measured, encouraging the increase use of renewables is a big question/challenge which is well beyond a SC.
- **Awareness of the benefits of renewables** is again a very large issue. The majority of the public do not understand the nuances of conventional energy provision and how these nuances affect the implementation of a substantial new renewable energy capacity.

Transport

- **these measures** are also well developed, but can be standardized. For example, per tonne freight km efficiencies in energy and greenhouse terms, as well as per passenger km figures are readily derivable

(see for example: M. Lenzen, Total energy and greenhouse gas requirements for Australian transport, *Transportation Research Part D* **4**: 265-290 (1999)).

- **analysing infrastructure measures** is a large task requiring application of complex locally-specific models. It is difficult to see how processes such as these, nonetheless important, are relevant to a SC.

Ecological Footprint

As mentioned above the EF is an excellent aggregate environmental indicator with broad public appeal from its intuitive nature. As well as being applicable to populations at different levels, the EF can be applied to organisations. Fundamental to the EF concept is the notion that land is embodied in all the processes required to support a consumer (or an organisation's) existence. This cumulative "upstream" impact viewpoint of the EF can be applied to other indicators. The alternate viewpoint is that of "downstream" impacts, for example, the so-called extended producer responsibility that a computer manufacturer can have for the safe disposal or reuse of materials in a computer. These two viewpoints – consumer v. producer – have recently been unified by ISA researchers (see the following report http://www.isa.org.usyd.edu.au/publications/documents/Lenzen,Murray,Sack&Wiedmann_2006-Shared_Responsibility.pdf).

This is relevant to the SC because it provides the foundation for the development of indicators both focused on production and consumption to be applied at a national level. This shared responsibility notion reflects the reality that both Australian citizens in their private capacity, and Australian organisations in their corporate capacity, have a part to play in improving the country's sustainability performance. Measures which reflect this shared responsibility can be developed.

Key References

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