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# Supply Chain Risk to Reward: Responsible Procurement and the Role of Ecolabels

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**Abstract**

Disclosure fatigue from increasing environmental and sustainability reporting, combined with the complexity of the procurement process with frequent challenges in availability, accessibility and accountability has resulted in fragmentation of all sectors including the built environment. This paper highlights key expected features of ISO 20400 on Sustainable Procurement and its relevancy for the built environment particularly in relation to the procurement process. The role of sustainability claims and labels, including declarations and certifications, and associated verification methods are discussed in regard to fitness for purpose, environmental, health, social and ethical considerations. Finally, future directions will be identified.


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*Keywords:* built environment; sustainable procurement; ecolabel; sustainable supply chain; ISO 20400

## 1. Introduction

The need to de risk the built environment supply chain is getting increasingly difficult with free trade,

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increased number of players in the market and varying quality of overseas manufacturing. What you buy, how you buy it and who you buy it from is changing. Environmental and social concerns, such as modern slavery, carbon footprint, local sourcing or supplier diversity are now firmly on the business agenda. As a result, disclosure fatigue from ever increasing environmental and sustainability reporting, combined with the complexity of navigating the procurement process with frequent challenges in availability, accessibility and accountability has often led to fragmented approaches in all sectors including the built environment. “Sustainable purchasing”, “responsible purchasing/sourcing”, “green purchasing”, “ethical procurement” and “supply chain sustainability” are some of the myriad titles of such initiatives.

The question of credibility has also been highlighted with organisations previously identified as trusted suppliers, being shown to manipulate and misrepresent data in order to be seen as a sustainable best practice performer. The Volkswagen company has provided a global example of what not to do and the consequences on brand and trust to a whole product brand. As a consequence, other organisations at executive level are ensuring that their own internal, external procurement and whole supply chain solutions are one of integrity and assured by third party, independent providers.

At such a time the introduction of yet another standard on the scene to add to the confusion would seem unwarranted in the least, if not unwelcome. However, the upcoming international standard (ISO 20400) on sustainable procurement, due for release in early 2017, is very timely as it aims to reconcile and address these issues. It provides a unified approach to integrating sustainability into the procurement process making its guidance suitable to any organisation, irrespective of size, sector and geographical location in the world. The standard aims to standardize guidelines and principles for all stakeholders working with internal and external purchasing processes – including contractors, suppliers, buyers, and local authorities – as part of an effort to demonstrate good practices for sustainable purchasing. The development of this first international guidance standard on sustainable procurement shows that this is a global movement. Intended benefits of integrating the guidance provided in the standard into the purchasing process include [1]:

- Increase the value of these essential emerging management practices
- Help differentiate between the programmes that are genuine efforts to tackle environmental, human rights or corruption issues within the supply chain, and the programmes that are just scratching the surface and can be considered mere “window dressing”
- Encourage other organizations to launch similar programmes by benefitting right away from the experience of early adopters and subject matter experts

With a dearth of regulations on the products front in the building industry, the emergence of these initiatives is most welcome for triggering a much needed change in this area.

This paper highlights key features of the draft standard IS0 20400 on sustainable procurement and its relevancy for the built environment with focus particularly on the area of identifying and verifying sustainability requirements in the procurement process. The role of sustainability claims and labels including declarations and certifications as well as associated verification methods are discussed in the context of supply chain risk in regard to fitness for purpose, environmental, health social and ethical considerations. A close examination of the various attributes underlying different types of sustainability labels is undertaken to cut through the jungle of confusion and gain greater clarity in evaluating their suitability for a particular situation before making any decisions on their selection, as they can vary greatly. The importance of rigour, on-site auditing and auditing oversight in relation to credibility of labels is also discussed. Continuing on this topic, a detailed understanding of ecolabels as a legitimate tool in simplifying and minimising the risk in supply chain is provided. Finally, trends and new directions in this important area are identified.

## 2. ISO 20400 sustainable procurement guidance standard

The ISO 20400 Sustainable Procurement – Guidance standard (currently draft standard) goes beyond the traditional procurement concept of value (typically immediate) for money and benefits to the organization and defines sustainable procurement as "*Procurement that has the most positive environmental, social and economic impacts on a whole life basis*". 49 countries, representing 65% of the world population, 85% of the GDP and contributing to 73%of global CO2 emissions, have been involved in the development of the standard. A project committee has been set up to develop the standard and 20 countries, including Australia in an active role, are currently participating in its work (one of the authors is member of the Australian mirror committee on the standard and was also member of the Australian delegation in the recent ISO meeting on the standard held in Sydney in May 2016). The standard is a guidance standard i.e. is not a certified standard like ISO 14001 for environmental management systems or SA 8000 for social accountability. The standard, based substantially on ISO 26000:2010 Guidance on Social Responsibility, does not replace legislation, policy or other environmental and ethical frameworks that regulate procurement activities.

The standard provides an understanding of sustainable procurement, the sustainability considerations that must be taken into account throughout all procurement functions (such as policy, strategy, organisation and process) and finally and most importantly guidance on how to implement sustainable procurement practically. The structure of the standard is divided into four major components (Fig. 1), each of which (except for the first) is intended to correlate with, and be relevant to, each major tier of decision makers in an organisation related to procurement – the executive, managers & procurement professionals. The first component of the standard is common to all decision makers.

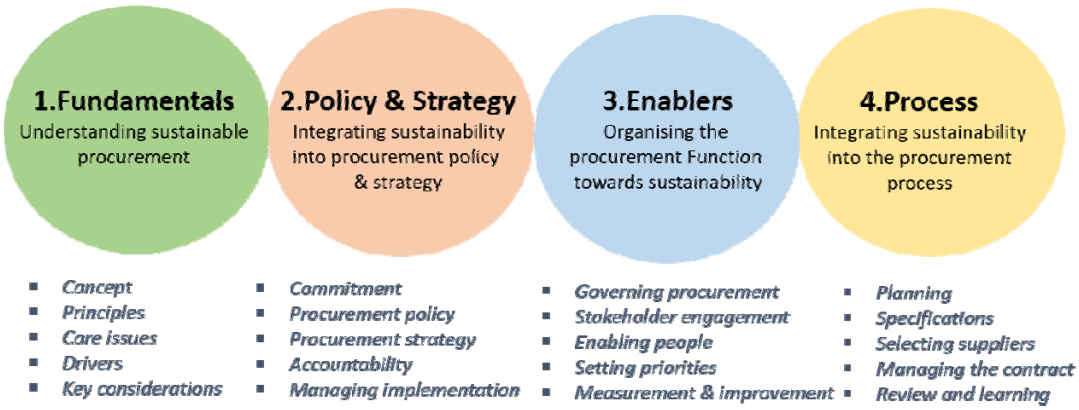


Fig. 1. Components of ISO 20400 sustainable procurement guidance standard

Accountability is a key principle of the standard. The draft standard says *"An organisation should be accountable for its own impacts on society, the economy and the environment*". In this regard, the standard identifies 7 core issues for sustainable procurement which are drawn from ISO 26000:2010 Guidance on Social Responsibility and are depicted in Figure 2.


Fig. 2. Core Issues - ISO 20600 social responsibility guidance standard

In the context of procurement, this accountability of an organisation for impacts related to all these 7 core issues encompasses the entire life cycle of all the goods and services procured by the organisation (Fig. 3).


Fig. 3. Life cycle stages of a product

These 2 key principles of accountability are applied to analyse the impact of goods and services through the example of electronic products (Fig. 4).

| VALUE CHAIN / CORE SUBJECTS | Mining Raw Materials | Material Production | Manufacturing | Packaging | Transportation & Storage | Retail | Use | Disposal and Recycling |
|---|---|---|---|---|---|---|---|---|
| Organizational Governance | | | | | | | | |
| Human Rights | Conflict Minerals<br>Forced labour | Forced labour | Forced labour<br>Discrimination | | | Diversity of culture and religion | | Child labour<br>Forced labour |
| Labour Practices | Safety, Health, Working Conditions | Safety, Health, Working Conditions | Safety, Health, Long working hours | Safety, Health, Working Conditions | Safety, Health, Working Conditions | Safety, Health, Working Conditions | | Safety, Health, Working Conditions |
| The Environment | Deforestation<br>CO2 emission<br>Water | CO2 emission<br>Water polution<br>Chemical emission | CO2 emission<br>Water usage<br>Waste | CO2 emission<br>Waste | CO2 emission | CO2 emission<br>Waste | Energy efficiency<br>CO2 emission | Recycling |
| Fair Operating Practices | Bribery | | | | Bribery | Bribery | | |
| Consumer Issues | | | | Labeling | | Protection of consumer privacy | safety and health | Take back |
| Community Involvement & Development | Indegineous peole & groups | | | | | | | Illegal waste dumping |

High Impact
Medium Impact
Low Impact

Fig. 4. Analysis of impact of electronic products

## 3. ISO 20400 and the built environment

As highlighted and intended, the ISO 20400 standard is designed for all sectors- however if there was one sector that could be identified as a strong early adopter in addition to facing ongoing and significant challenges, it would be the built environment. Australia has led adoption of best practice in the last 10 years in particular, however despite this cooperation and collaboration across competitors, they continue to struggle with establishing an internal prioritised core criterion for their supply chains.

The built environment sector utilises literally thousands of suppliers of products and services and the geography of the relevant supply chain is vast. Procurement across these supply chains involve many countries across the globe- but predominantly across Asia which broadly speaking, has been highlighted as a potential higher risk area for social issues, modern slavery and safety concerns.

Secondly, the built environment is a high environment and social impact area. There have been high profile events of late such as the example of high level cladding and fires that have demonstrated such concern of imported goods, quality, conformance and consequentially the resulting public safety issues. Industry acknowledge this and require help to navigate such issues.

## 4. The role of sustainability labels, marks and seals

The fourth and last component of the ISO 20400 standard on “Process” provides guidance for procurement professionals on how to integrate sustainability into the procurement process. Within this, the section “Integrating sustainability requirements in the specification” highlights and elaborates the role of sustainability labels, marks and certifications in the procurement process.

The first way in which these labels, marks and certifications are useful in the procurement process is that they provide a valuable source of information for establishing procurement requirements. Most labels and certifications are based on technical standards of performance and the criteria or requirements in these standards can be referenced in whole or partially in specifications. The standard points out to the range of labels and certifications available in the market which can vary greatly depending on the extent of sustainability aspects addressed, level of stringency of these sustainability aspects set and the number of life cycle stages considered.

The second, and perhaps the more important, way that labels can contribute to the procurement process is in establishing the evaluation procedure in competitive tender documents for verifying that each of the sustainability requirements set by the organisation are met. The choice of an appropriate evaluation procedure/s is influenced by several factors including importance of the issue to the organisation, risk of non-conformity, cost of the procedure, availability of technical expertise and infrastructure, competence and credibility of the evaluator.

An evaluation procedure includes both the evaluation activities as well as who carries out these activities. The standard lists the various types of evaluation activities such as document review, tests, inspections, audits etc. These activities can be carried out either by the supplier of the product or services (first party), the organisation purchasing the product or service (second party) or an independent external body (third party). In defining the evaluation procedure the organisation needs to define both the type of evaluation activities and the party who carries then out.

The standard then offers guidance on the costs, effort and levels of assurance associated with various evaluation procedures and gives high visibility to third party sustainability, labels and marks by mentioning

that "*in general certification schemes engender higher levels of confidence with limited effort on part of the purchasing organisation*".

## 5. Deciphering sustainability for products & services in the built environment

There is a myriad of third party sustainability labels for products and services associated with the built environment and these can vary greatly. Procurement professionals and specifiers are not necessary experts in sustainability and so navigating through the whole landscape of such labels and certifications can be confusing at best and daunting at worst. In trying to cut through this jungle of labels, it might be to useful to have a framework that encompasses the various underlying attributes of labels and certifications and use that as a lens to question and understand them better in order assist decision making on their suitability for a particular situation, in regard to both establishing the procurement requirements as well as evaluating that the requirements have been met.

### *5.1 Purpose*

- The first and foremost question to ask is – Is the certification being given to the organisation making the product (e.g. ISO 14001 Environmental Management Systems) or is it awarded to the product (e.g. FSC)? There is a difference because the former focusses on systems and procedures and demonstrates that these are in place to achieve the performance requirements of the product as determined and established by the organisation. On the other hand, the latter focuses on the product and recognises that the product is performing to the level of standard established by the certification body.
- The next question to ask regarding the purpose of the label is - Is the label or mark recognising a product or service that has achieved an improved level of sustainability performance (for some or all aspects) or is it simply reporting or disclosing the sustainability performance (some or all aspects) of the product of service, at whatever level that may be? Some examples of the former include FSC label, Asthma Sensitive Choice label and GEN Ecolabels. Examples of the latter include Energy Rating label, Carbon Footprint label, Environmental Product Declaration (EPD) or Declare Red List label.

### *5.2 Product/Service Categories*

- What is the range of products and services covered by the label? Some labels focus only on one product/material and/or service categories while some cover quite a diverse range.

### *5.3 Sustainability Aspects*

- What are the sustainability aspects addressed by the label – environmental aspects, social/ethical aspects, health aspects or a combination of these? The terms sustainability is very broad and so the coverage of different labels in regard to these various aspects can differ greatly. Within the environmental sphere alone there are again several aspects such as energy, carbon, water, air emissions etc. and some labels choose to focus only on specific environmental aspects.
- What life cycle stages are included – single, multiple or whole of life?
- What is the level of stringency adopted for each of the above aspects?
- Does the scope of the label include the product as well as the packaging?
- Does it also include a quality related requirement (fitness for purpose)? This is important as quality is linked to durability which is in turn linked to sustainability.

*5.4 Verification and Certification*

- Is it a single level certification or a tiered certification? There are some labels that offer only 1 level of certification which is usually the top of the pyramid for sustainability performance and then there are other labels that offer various levels of certification such as bronze, gold, platinum etc. as stepping stones leading to the top of the pyramid. In the case of the latter, the lowest is still above the level of existing "business as usual" performance.
- Are auditors sufficiently independent from the certifying organisation? Certification bodies develop their own standards of performance (i.e. technical requirements) and then award their label after verifying that compliance with those requirements has been achieved. There is greater impartiality when the auditing function is independent from the certifying body as the auditors in this case have no vested (commercial) interest in approving compliance.
- Does the audit involve only a review of documentation or an actual inspection of the manufacturing site? This is a very important point to consider. Documents are after all documents and without a third party appraisal of matching documents to actual implementation on site they are not very meaningful
- Is there any ongoing compliance? Some labels are awarded indefinitely and rely on notification of changes from the supplier of the product or service as a mechanism to ensure ongoing compliance. Others include a validity period for the license and require a compulsory recertification via a full site audit. The latter offers a higher level of assurance and this is sometimes enhanced with inclusion of random audits as appropriate.
- Who checks the "checkers" – is there sufficient oversight on the auditors to ensure their integrity and competence? Such an oversight on the auditors can greatly increase the level of assurance of, and thus confidence in, the label. Independent third party accreditation bodies such as JAS-ANZ (Joint Accreditation System of Australia and New Zealand) have been set up to offer such a service

*5.5 Governance*

- What is the business structure of the certifying body – is it for profit, not-for-profit, government or NGO? Not always necessarily but this could give an indication of the level of impartiality of the certifying organisation
- How open and transparent are the systems and processes? This is applicable to both the standards setting process as well as verification procedures gives an indication of how accountable the organisation is.
- How much public consultation is involved in the standard development process? This gives some idea of how balanced, fair, robust as well as relevant the standard is.
- How easily available are the standards and any related information? Some certifying organisations charge a fee for their standards while standards from others are available at no cost.

*5.6 Alignment with Other Standards & Schemes*

- Are the standards and certification procedures robust and based on any known international standards? Some such international standards include ISO 14024 Type 1 Environmental Labelling, ISO 14025 Type III Environmental Labelling, ISO 17065 Conformity assessment - Requirements for Bodies Certifying Products, Processes and Services
- Does the label offer a pathway to any green building/infrastructure rating programs? Some labels and certifications are recognised in green building/infrastructure rating programs such as Green Star, ISCA rating tool in Australia and overseas programs such as LEED, WELL rating and LBC (Living Building Challenge) certification

- Does the label offer any mutual recognition with other parallel similar labels? Such an arrangement can be useful as overseas products can enter local markets more easily and avail of the same advantages as local labels do.

## 6. Ecolabels

### *6.1 General*

This section focusses on Ecolabels, and the Good Environmental Choice Australia (GECA) Ecolabel in particular, and applies the lens described in the previous section to examine and understand where and how they are placed in the labels landscape and how they can contribute to the procurement process.

Ecolabels are usually understood in common language as all labels related to the environment [2] or a logo/mark used to indicate an environmentally preferable product, service or company based on defined standards or criteria [3]. However, GEN, the internationally recognised network of Ecolabelling organisations defines an Ecolabel as *"a label which identifies proven overall environmentally preferable product or service, within a specific product or service category, based on life-cycle considerations"* [4] and is based on ISO 14024 Type 1 Environmental Labelling [2]

Ecolabels are based on ambitious requirements on environmental quality and are awarded to products and services that achieve a "distinction in environmental performance in comparison to average products or services in that category" [2]. These typically include the top 10%-20% most environmentally friendly products on the market for that product or service category [6]. Closely related to Ecolabels, but not strictly speaking Ecolabels, are also "Type 1-like" labels [2] that employ verification and certification processes similar to that of Ecolabels but focus on single issues (e.g. energy consumption, sustainable forestry etc.) Examples of Type 1 –type Ecolabels include FSC and Fair Trade.

While Ecolabels are environmentally focussed, they also often cover social and health aspects to varying degrees. Fitness for purpose and compliance to environmental and other related regulations are also included in several Ecolabels, particularly those in the Global Ecolabelling Network (GEN).

As mentioned earlier, Ecolabels are awarded to the top 20% of distinguished products and services compared to average performance in the industry and is thus generally a non-tiered single pass/fail certification (e.g. GEN ecolabels such as GECA in Australia, ECNZ in New Zealand, EU Ecolabel from Europe). However, there are also come Ecolabels that have a tiered certification system (e.g. Cradle to Cradle and Global Greentag).

### *6.2 GECA Ecolabel*

Good Environmental Choice Australia, established in 2001, is Australia's only national not for profit Ecolabelling organisation and member of GEN. GECA currently has 19 standards including both products and services ranging from furniture, flooring, paints, carpets, cleaning products recycled products to cleaning services, textiles and personal care products [5].

GECA standards (and as the name suggests) while being focussed on environmental impact of products and services also include fitness for purpose, health as well as social/ethical requirements. Environmental and health considerations are based on life cycle principles i.e. the entire supply chain beginning from the extraction of resources to manufacturing, processing, use and the end of life of products (including packaging) and services. Examples of environmental aspects covered include habitat destruction, energy & CO2 emissions, resource efficiency, waste, air & water pollution. Regarding social and ethical considerations, these are currently focussed on the manufacturing process but are gradually being extended to

further upstream and downstream sections of the supply chain in current standards revisions as well as future new standards and revisions. Fitness for purpose is an important requirement as it is not only related to sustainability but is can also help in identifying compliant products from the increasing number of non-compliant building products entering the Australian market.

Typical sections of a GECA standard include requirements on:

- Fitness for purpose (compliance to Australian or international standards where standards exist and/or other forms of evidence)
- Material requirements (resource extraction issues, resource efficiency)
- Emissions (to air, water and land)
- Hazardous & prohibited materials (banned substances and limited substances)
- Energy management
- Water management
- Waste management
- End of life (recycling, packaging, product labelling & product stewardship)
- Environmental claims (public claims beyond the standard in accordance with ISO 14021)
- Environmental and other compliance (environmental, fair pay, worker safety, equal opportunity & lawful conduct)

GECA certification is single tiered i.e. based on pass/fail criteria and recognises the top 20% that demonstrate distinction in environmental performance in comparison to average products or services in that category. In order to maintain impartiality, the auditing function is carried out by independent auditors and involves both document/desk top review as well as compulsory site audit. In order for GECA licensed products and services to continue maintaining their certification, an ongoing audit is carried out every 3 years. In the intervening years surveillance is ensured annually by requiring notification from companies of any changes to product, location, supplier or materials. In order to maintain oversight on the integrity and competence of the auditors, all GECA auditors have to have accreditation with JAS-ANZ (Joint Accreditation System - Australia & New Zealand).

GECA is a not for profit organisation and has also been recently B Corp certified. B Corp certification is to business what Fair Trade is for coffee. The certification is awarded to companies that meet rigorous standards of social and environmental performance, accountability, and transparency. GECA's standards are easily accessible and free of charge and the standard setting processes are transparent and consultative. The consultation during the development of a new standard or revision of an existing standard includes an advisory group comprising a cross section of stakeholders and experts at the initial stages and well as the general public at the final stage.

GECA standards are based on ISO 14024 Type 1 Environmental labelling and the auditing procedures are based on ISO 17065 Conformity Assessment - Requirements for Bodies Certifying Products, Processes and Services. GECA certification offers pathways into green built environment ratings programs. Several GECA standards are recognised in the Green Star rating tools for new buildings, interiors and existing buildings. ISCA rating tool recognises all GECA standards wherever they are relevant. GECA certification also meets requirements of selected credits (and also directly recognised for some) in the LEED rating tool and WELL building program. GECA also has a GENICES (Global Ecolabelling Network Internationally Coordinated Ecolabelling System) status with the GEN network that establishes mutual recognition with other GENICES accredited GEN members. This opens up pathways for GECA certified products and services to access international markets and for other GEN certified products and services to enter the Australian market easily

## 7. Conclusion

This paper has highlighted the need to de-risk the built environment supply chain, a summary of the upcoming ISO 20400 standard that is aimed at consolidating efforts in this regard and discussed the role of third party certifications within the standard with a particular focus on Ecolabels, using GECA as an example. The comprehensiveness, robustness, rigour and independence of Ecolabels in terms of both their standards and verification procedures place them in an ideal position as a legitimate tool in simplifying and minimising the risk in the built environment supply chain. They engender a high level of confidence and require minimum level of effort on the part of the procuring organisation in the procurement process. With growing concerns over the hordes of non-compliant products entering into Australia, and a lack of adequate regulations Ecolabels can offer a level of assurance on the quality of the product, including its sustainability credentials.

Looking to the future, the trend of eco labels is reflected in their shared intent with industry and the economy, which is to simplify and harmonise standards through geographic and economic regions, whilst still ensuring they provide quality, credibility, consistency and transparency.

Ecolabelling organisations acknowledge that it is difficult to demonstrate compliance with multiple labels, differing criteria and an increasing number of countries to trade within. Therefore such networks as GENESIS (within the GEN network) are establishing a shared intent to establish systems of mutual recognition within proven, best practice labels. Other inter government agencies such as UNEP have also identified this need and resulting opportunity and are consequently promoting such initiatives to countries that are yet to establish best practice integrated ecolabels within the ISO 14024 Type 1 Environmental Labelling criteria.

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## References

[1] International Organisation for Standardisation (ISO). Sustainable Procurement One Step Closer to an International Standard, [Online] Available at http://www.iso.org/iso/home/news_index/news_archive/news.htm?refid=Ref1873, 2014, [Accessed 23 August 2016]
[2] UNOPS, A Guide to Environmental Labels - for Procurement Practitioners of the United Nations System, UNOPS, 2009, pp. 5-10
[3] Ecolabel Index. Ecolabel Index, [Online] Available at www.ecolabelindex.com, 2016, [Accessed 23 August 2016]
[4] Global Ecolabelling Nework (GEN). What is Ecolabelling, [Online] Available at http://www.globalecolabelling.net/what-is-eco-labelling/, 2016, [Accessed 23 August 2016]
[5] Good Environmental Choice Australia. Our Standards, [Online] Available at http://www.geca.org.au/standards/, 2016, [Accessed 23 August 2016] www.geca.org.au
[6] European Commission - Environment. EU Ecolabel for Businesses, [Online] Available at http://ec.europa.eu/environment/ecolabel [Accessed 04 October 2016]