

Sustainable procurement guide: Business machines



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Contact us

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Disclaimer

This document is intended as a guide only for the internal use and benefit of government agencies. It may not be relied on by any other party. It should be read in conjunction with the Queensland Procurement Policy, your agency's procurement policies and procedures, and any other relevant documents.

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Administration

Version 1.4 of this document replaces all previous versions of this document and takes effect immediately.

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Purpose

This guide aims to support government buyers in implementing sustainability considerations when procuring business machines, and to signal to industry government's expectations in relation to sustainability of business machines.

Target audience

Minimum performance criteria are benchmarks for industry performance within the supply market.

For industry: this guide provides insight into current and potential government expectations in relation to the sustainability of business machines.

For procurement professionals: this guide provides information to guide the integration of sustainability principles into the procurement of business machines.

How to use this guide

This guide is commodity specific to business machines.

Sustainability considerations should be incorporated at every stage of the procurement process. Opportunities and strategies exist to address environmental and social impacts during procurement planning (including demand analysis), supplier engagement and through the management of supply arrangements.

The suggested criteria contained in this guide may be applied at any stage of the process. The interpretation, modification and suitability of the criteria must be considered by the contract manager at the time of planning a procurement arrangement. Consideration should also be given to where in the procurement process they should be applied for maximum benefit.

The suggested specifications will not be suitable for all agencies, nor relevant in all markets or procurement contexts. The sustainable procurement responses may be affected by factors including market readiness, availability of supply, product complexity and maturity, and organisational needs. Each procurement arrangement will be different.

Introduction to business machines

Scope

For the purpose of this guide, the following categories of business machines are considered: multifunctional devices, photocopiers, printers, scanners and fax machines.

It does not include products such as commercial production printing equipment or any product that is solely powered by batteries.

Fitness for purpose

For the purposes of this guide, it is assumed that the product shall be fit for its intended application and the purpose for which it was manufactured. The product must be accompanied by warranty periods emphasising durability and quality performance.

Products are assumed to be certified by mandatory Australian Standards or equivalent international standards.

Business machines: Summary of sustainability impacts and responses

Product development

Material choice

Procure business machines with a minimal amount of hazardous constituents.

Product design and manufacturing process

Product design

Procure business machines designed for optimum recovery of components or materials for recycling, are easy to disassemble and incorporate options for life extension.

Manufacturing process

Procure business machines from suppliers that implement appropriate practices and systems to manage the environmental and social impacts throughout the product manufacturing process.

Packaging and transport

Packaging

Ensure packaging supplied with the procured business machines is recyclable and contains recycled content and no toxic substances.

Engage suppliers that can demonstrate initiatives to minimise the environmental impacts of packaging through better design and reuse or recycling of product packaging.

Transportation

Procure business machines from suppliers that can demonstrate initiatives to reduce the environmental impacts associated from transportation and distribution of the product.

Operational use

Use of consumables

Procure business machines with efficiencies that minimise the use of consumables during operation, and with features that assist users in reducing the use of consumables.

Energy

Procure business machines with features to assist with the reduction of energy consumption in all operational modes (i.e. on/standby/off) and which are compliant with the latest Energy Star standard.

Noise and emissions

Procure business machines with reduced noise and emission levels, from suppliers that can demonstrate initiatives and commitment towards providing low noise and emission products.

End-of-life management

End-of-life management

Procure business machines from suppliers who offer life extension options, and also services to ensure responsible recycling and disposal of equipment at the end of its useful life.

Suggested criteria

Product development

Material choice

- **Issue.** Business machines contain hazardous substance and heavy metals which pose environmental risks at all stages of the product lifecycle and influence the options for disposal at the end-of-life of the product.
- **Response.** Procure business machines with a minimal amount of hazardous constituents.

Minimum performance criteria	Best practice performance criteria
Minimum specification or contract performance clause: <i>Prohibited substances</i> The offered products must not contain the following hazardous substances: • lead • mercury • cadmium • hexavalent chromium • polybrominated biphenyl (PBB) • polybrominated diphenyl ether (PBDE). Offerors are required to provide a technical report or certification of compliance to demonstrate the above requirement. <i>Hazardous substances</i> 1. Offerors are required to provide a written declaration that the product manufacturer has set a timeline (and disclosed the timeframes) for the phase-out of brominated flame retardants (BFRs) and plastics containing PVC in all product components. 2. Offerors are required to disclose any initiatives and existing commitments to minimise the hazardous material content in the offered products.	Best practice specification or contract performance clause: <i>Recyclability of materials</i> The offered products must meet the following requirements: • at least 90 per cent by weight of plastics in the housing and chassis must be recyclable • at least 90 per cent by weight of metals with a weight of excess of 25 grams (25g) or a flat surface in excess of 22mm² in the housing and chassis must be recyclable. Offerors are required to provide a written declaration issued by the product manufacturer to demonstrate compliance with the above requirements. <i>Hazardous substances</i> The offered products must meet the following requirements: • electrical cable insulation material of power cables must be halogen free (including PVC) • electrical cable insulation material of signal cables must be halogen free (including PVC) • all cover/housing plastic parts >25g must be halogen free • all printed circuit boards (without components) >25g must be halogen free

	- plastic parts >25g must be free from flame retardant substances/preparations above 0.1per cent classified as R45/46, R50/51/53 and R60/61 (67/548/EEC) - light sources must be free from mercury. Offerors are required to provide a written declaration issued by the product manufacturer, such as Eco Declaration (ECMA-370) to demonstrate compliance with the above requirements.
References: 1, 3, 4 (see <i>References</i> , below).	

Product design and manufacturing process

Product design

- **Issue.** Poorly designed business machines may result in decreased product longevity, and limited options for disposal at the end-of-life.
- **Response.** Procure business machines designed for optimum recovery of components or materials for recycling, are easy to disassemble and incorporate options for life extension.

Manufacturing process

- **Issue.** The process of manufacturing business machines produces a range of environmental impacts such as the use of resources and generation of emissions and pollutants. The emission and pollutants generated during product manufacture and recycling/recovering of product components affects the health of the workers involved.
- **Response.** Procure business machines from suppliers that implement appropriate practices and systems to manage the environmental and social impacts throughout the product manufacturing process.

Minimum performance criteria	Best practice performance criteria
Minimum specification: Product design 1. Offerors are required to demonstrate that design for life/Eco design features are incorporated into the offered products (e.g. modular design with exchangeable parts, recyclability of the materials in component parts). 2. Offerors are required to disclose: • amount of recycled content used in the equipment • any extended warranty terms, including warranty over availability of spare parts • the ease of disassembly/dismantling the machine into recyclable parts. Production process 1. Offerors must provide a copy of current documentation that formally demonstrates a system of environmental management is operating in the facility for manufacture of products and parts. The system should encompass identification, evaluation, improvement and monitoring of environmental performance of the manufacturing facility. The system of environmental management may be ISO 14001 certified, in which case a copy of the valid certificate is to be provided. 2. Offerors are required to provide information on initiatives or formal commitments that assists in reducing environmental impacts of business machines manufacturing process. This may include strategies to minimise the use of resources and generation of waste. 3. Offerors must demonstrate that the product manufacturer and suppliers of the product components throughout the whole supply chain are compliant with the International Labour Organisation (ILO) core framework. The supply chain includes original equipment manufacturers (OEMs), electronic manufacturing services (EMS) firms and original design manufacturers (ODMs).	Best practice specification: Product design Offerors are required to provide a written declaration that the offered products comply with the following requirements: • connections between different materials must be easy to locate, accessible with commonly available tools and as standardised as possible • qualified personnel must be able to easily dismantle the machine completely into recyclable parts • labels/stickers must be made of the same material as the part to which they are attached and must not be coated or otherwise treated in a manner which would prevent recycling • plastic components must be of one polymer or compatible polymers, except for castings • plastic components heavier than 25g must have a permanent marking identifying the material – in conformity with ISO11469:2000. Best practice specification: Production process Offerors must provide a copy of current documentation that formally demonstrates a system of environmental management is operating in the facility for manufacture of products and parts. The system should encompass identification, evaluation, improvement and monitoring of environmental performance of the production facility. The system of environmental management must meet a recognised system such as ISO 14001 or European EMAS, and a copy of the valid certificate is to be provided.

Contract performance clauses

- **Minimum contract performance clause:** The contractor is required to guarantee the availability of spare parts for at least three years from the time that production ceases.
- **Best practice contract performance clause:** The contractor is required to guarantee the availability of spare parts for five years from the time that production ceases.

References: 2, 3, 4 (see *References*, below).

Packaging and transportation

Packaging

- **Issue.** Packaging utilises resources and generates environmental impacts during its production. It may also contain toxic substances that can create pollution if not disposed of correctly.
- **Response.** Ensure packaging supplied with the procured business machines is recyclable and contains recycled content and no toxic substances. Engage suppliers that can demonstrate initiatives to minimise the environmental impacts of packaging through better design and reuse or recycling of product packaging.

Minimum performance criteria	Best practice performance criteria
Minimum specifications: Management and reduction of packaging Offerors are required to demonstrate: - initiatives implemented to reduce the amount of packaging used (e.g. improvement in the packaging design or packaging reduction targets) - initiatives implemented to reduce the environmental impact of product packaging at the end-of-life; this may include initiatives to collect and/or reuse the packaging materials; if the offeror is providing a packaging take-back service, they must disclose how the collected packaging will be managed and whether the packaging is recycled locally. Content of packaging materials Offerors are required to provide a written declaration showing that packaging supplied with the offered products meets the following requirements: - cartons/boxes must contain a minimum 50 per cent recycled content - a minimum of 80 per cent of packaging by weight must consist of materials that are readily recyclable - packaging must not contain chlorinated or halogenated plastics (including PVC) - heavy metals must not be added to any packaging component (heavy metals present in recycled content are acceptable). Offerors must disclose the steps that have been taken to identify and eliminate the use of hazardous substances in product packaging.	Best practice specifications: Take-back of packaging Throughout the term of the arrangement, the successful offeror will be required to provide take-back of packaging supplied with products and evidence that the collected packaging is recycled and/or re-used. Offerors are required to describe how the collected packaging will be managed and whether the packaging is recycled locally. Content of packaging materials Offerors are required to provide a written declaration showing that packaging supplied with the offered products meets the following requirements: - cartons/boxes must contain 100 per cent recycled content - all packaging must be able to be recycled - packaging must not contain chlorinated or halogenated plastics (including PVC) - heavy metals must not be added to any packaging component (heavy metals present in recycled content are acceptable).
Contract performance clause The contractor is required to provide quarterly reporting on: - volume and percentage of total of packaging reduced through new initiatives - volume and percentage of total of packaging collected through the take-back scheme - volume and percentage of total packaging recycled and/or re-used.	
References: 1, 4 (see <i>References</i> , below).	

Transportation

- **Issue.** Distribution of business machines to customers utilises transportation methods, which releases significant amounts of greenhouse gases to the atmosphere.
- **Response.** Procure business machines from suppliers that can demonstrate initiatives to reduce the environmental impacts associated from transportation and distribution of the product.

Minimum performance criteria	Best practice performance criteria
Minimum specification: Offerors are required to demonstrate the steps that have been taken to minimise the impacts associated with transportation and distribution of the offered products. This could include improved delivery/logistics efficiency, initiatives to reduce fuel consumption or the use of ethanol-blended fuels in delivery fleet.	Best practice specification: Offerors are required to disclose the greenhouse gas emissions associated with the delivery of the products from final production location to the customer.

Operational use

Use of consumables

- **Issue.** The operation of business machines requires the use of consumables including paper and toners, each of which has their own environmental and social impacts.
- **Response.** Procure business machines with efficiencies that minimise the use of consumables during operation, and with features that assist users in reducing the use of consumables.

Minimum performance criteria	Best practice performance criteria
Minimum specification: Offerors are required to describe any features associated with the offered products that assist in reducing the use of consumables, in particular, toner, inks and paper. These features should include: • digital imaging and archiving • print job review and confirmation at machine prior to printing • toner and paper consumption tracking features. Printing All offered products with a printing function and a maximum operating speed of more than 21 sheets per minute for A4 paper must be equipped with automatic double-sided copying. All other offered products with a printing function with a lower maximum operating speed must at least offer a manual option for double-sided printing on A4 paper. Paper All offered products must be capable of using recycled content paper without voiding the manufacturer's warranty. Toner 1. The offered products must be designed to permit the use of third party remanufactured cartridges, or the reuse of original cartridges. 2. Offerors are required to disclose any program or arrangements for collection and recycling of toner cartridges.	Best practice specification: Preference will be given to products with features that minimise the use of consumables, in particular, toner, inks and paper.
References: 1, 2, 4 (see <i>References</i> , below).	

Energy

- **Issue.** Business machines use significant amounts of energy for operation and in standby mode. In addition, business machines generate heat which contributes to the ambient air temperature and results in an increased load on energy intensive cooling systems.
- **Response.** Procure business machines with features to assist with the reduction of energy consumption in all operational modes (i.e. on/standby/off) and which are compliant with the latest Energy Star standard.

Minimum performance criteria	Best practice performance criteria
Minimum specification: 1. All offered products must meet the latest Energy Star standards for energy performance. For products which do not carry an Energy Star label, offerors are required to submit an appropriate means of proof of energy consumption levels such as a technical dossier of the manufacturer or a test report from a recognised body to demonstrate compliance with this requirement. 2. Offerors are required to disclose energy consumption of the offered products and demonstrate initiatives to reduce the energy consumption of the equipment in the following three modes: On (normal/operating use), Standby (sleep), and Off. Preference will be given to products with reduced energy consumption in all three modes.	Best practice specification: Preference will be given to products with energy consumption lower than the levels specified by Energy Star standards. Offerors are required to submit an appropriate means of proof of energy consumption levels such as a technical dossier of the manufacturer or a test report from a recognised body.
Contract performance clause The contractor is required to ensure that all products are delivered with the Energy Star capability enabled.	

Noise and emissions

- **Issue.** During operation, business machines generate emissions including volatile organic compounds (VOCs), which adversely affect indoor air quality and generate noise and electromagnetic fields, which can impact staff productivity, health and wellbeing.
- **Response.** Procure business machines with reduced noise and emission levels, from suppliers that can demonstrate initiatives and commitment towards providing low noise and emission products.

Minimum performance criteria	Best practice performance criteria
Minimum specification: Noise 1. Offerors are required to demonstrate initiatives or product features that assist in lowering the noise levels of the offered product during operation. 2. Offerors are required to specify the maximum noise level of the offered product during operation. Emissions Offerors are required to provide evidence that demonstrates preventative measures and commitment towards providing low emitting products. This should include ongoing initiatives to reduce the emission levels of dust, ozone, styrene, benzene and any other volatile organic compounds (VOCs) and electromagnetic radiation.	Best practice specification: Noise All offered products with a printing function are required to have their sound power level measured in accordance with ISO 7779 and declared according to ISO 9296. The A-weighted sound level for the offered products must not exceed the following level: $LWAd: 0.35 \times CPM \text{ (copies per minute)} + 59 \text{ (dB)}$ If the copy rate is such that $CPM > 71$, the above limit does not apply. This limit applies to A4 paper or smaller. Emissions Indoor air emissions resulting from the offered products must not exceed the emission requirements specified by Type 1 eco-labels such as Good Environmental Choice Australia (GECA), Blue Angel, Nordic Swan or EcoMark. Offerors are required to provide a written declaration or a current eco-label certificate to demonstrate compliance with the requirements above.
Contract performance clauses For all new products offered under the arrangement, the contractor is required to disclose noise and emission levels (for dust, ozone, styrene, benzene and any other VOCs) to the contract manager.	
References: 1, 2, 4 (see <i>References</i>, below).	

End-of-life management

End-of-life management

- **Issue.** The disposal of business machines without any attempt to reuse, remanufacture or recycle components and materials contributes to landfill, with subsequent impacts such as toxic leachates. It also wastes resources utilised to manufacture machines.
- **Response.** Procure business machines from suppliers who offer life extension options, and also services to ensure responsible recycling and disposal of equipment at the end of its useful life.

Minimum performance criteria	Best practice performance criteria
Minimum specification: 1. Refer to <i>Product design and manufacturing process</i> (see above in this guide) and ensure the suggested specifications for product design and contract conditions are included in the invitation to offer documentation. 2. Throughout the term of the arrangement the offeror is required to provide an end-of-life take-back scheme for all offered products and reporting of disposal outcomes. The offeror must provide an end-of-life take-back guarantee and must demonstrate that there are arrangements in place to re-use, recycle and/or dispose of waste. 3. Offerors are required to disclose any special provisions/conditions/exclusions in relation to this scheme. Offerors are required to disclose any other industry-wide, local, state or national strategies/initiatives that support waste management/reduction in which their organisation is currently engaged.	Best practice specification: None currently expected to be met by majority of the supply market.
Contract performance clause The contractor is required to provide quarterly reporting on disposal outcomes for all products collected under the take back scheme including: • volume of products/materials collected • volume and percentage of materials recycled (by material type) • volume and percentage of waste sent to landfill.	
References: 4 (see <i>References</i> , below).	

Integrating sustainable procurement throughout the procurement process

Sustainability considerations should be incorporated at every stage of the procurement process. Prior to incorporating any specifications or information contained within this guide:

- consider the specific market conditions and organisational needs prior to deciding if and where to apply these criteria
- document the options and decisions for how sustainability will be addressed in a plan for significant procurement or a business case.

Procurement planning

Demand analysis

Rethinking the need for a purchase can help avoid unnecessary consumption.

Consider both the 'need' for the business machine and how the use of the equipment is being managed. For example:

- explore opportunities to reduce the number of business machines procured through improved planning of office layout and more centralised location of business machines
- increase standardisation of configuration and limit the model range for ease of redistribution, repair, reuse and replacement
- ensure agencies' asset management plans and asset disposal policies clearly address sustainability impacts as well as measures to improve sustainability outcomes through demand management and sustainable end-of-life disposal of products
- consider how technical specifications may affect machine usage, and consumption of consumables
- ensure staff are trained to utilise the machine features that assist in reduction of the use of consumables, for example:
 - digital imaging and archiving
 - sending and storing print requests at the multifunctional device or on a print server in an electronic state; the document is then only printed when the user enters personal details at the device, at which stage print requests made in error can also be deleted (this also reduces paper wastage).

Supply market analysis

Collect information to identify the capacity of the supply chain to deliver the products in accordance with sustainability requirements.

Use the sustainability issues identified in this guide to develop a pre-tender questionnaire that will help lead discussion with suppliers.

Conduct pre-tender supplier briefings in order to:

- engage potential suppliers, identify existing sustainable suppliers and develop an overall understanding of the market's sustainability performance and capability
- determine whether the recommended minimum performance criteria identified in this guide are sufficient or if the best practice performance criteria would be more suitable.

Identify opportunities for collaboration between government and industry/specific suppliers in relation to sustainability issues contained in this guide.

Supplier engagement

The criteria in this guide can be used to develop requirements in the invitation to offer documents, as follows:

- minimum performance criteria for business machines may be set as mandatory specifications:
 - ensure that ‘mandatory’ requirements are able to be delivered by the majority of potential suppliers - those who do not meet the mandatory specifications are not evaluated during the tendering process
- best practice performance criteria for business machines criteria may be set as desirable specifications:
 - these criteria relate to industry leaders in the sustainability field and therefore it is unlikely that all suppliers will be able to compete on this level
 - best practice performance criteria provide a market for more sustainable products
 - specifying for best practices may incur a price differential; identify whether or not there is a price differential in the upfront cost and whether ongoing savings may be realised over the life of the product (e.g. where the price of the product includes costs for end-of-life take-back and sustainable disposal of the product)
- a full value for money assessment should be undertaken. This includes costs for the business machine, consumables and maintenance. The whole-of-life environmental, social and economic gains that derive from improved sustainability outcomes may warrant an increased upfront cost.

Managing supply arrangements

Key Performance Indicators (KPIs) are an effective tool to ensure suppliers implement progressive sustainability improvements during the term of the arrangement. For example:

- if at the specification development stage it is determined that the potential supplier does not currently have a capability or capacity to meet a particular sustainability requirement, the sustainability criterion may be set as part of KPIs; for example, the supplier may be required to demonstrate that the levels of emissions resulting from the business machines are decreased in future product models
- best practice criteria that are set as KPIs could be used to progress a supplier towards best practice via continuous improvement over time.

Reporting and measurement

Contract reporting requirements should specifically demonstrate the environmental and social benefits achieved by procuring more sustainable products.

Incorporate sustainability reporting requirements into contract/arrangement terms and conditions.

Measurements of sustainability performance for business machines could include:

- improvements in product design resulting in decreased consumption of consumables
- volume of packaging recycled and reused
- reductions in energy use
- reductions in levels of emissions of hazardous substance during use
- recycled content of machines

- disclosure on volumes of machines taken back and information on what is done with these items (e.g. per cent recycled, per cent refurbished).

References

1. Good Environmental Choice Australia Ltd-GECA (Australia), Printers and Imaging Equipment, February 2008.
2. European Union Green Public Procurement (EU), IT equipment product guide, June 2009.
3. Department for Environment, Food and Rural Affairs, UK Government, Buy-Sustainable, Quick Wins, Office Machinery, June 2009.
4. Local Governments for Sustainability for the United Nations Environment Programme (UNEP)-Division of Technology, Industry and Economics, Sustainable procurement guidelines for office IT equipment (basic and advanced), 2008.