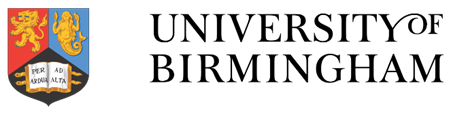
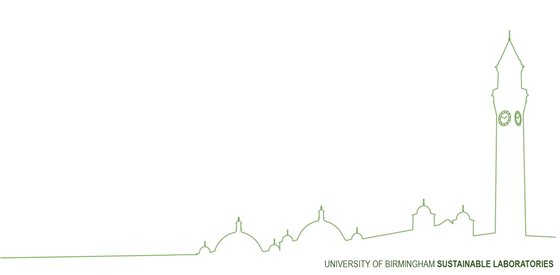
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**Sustainable Laboratory Guidance**

Policy document on sustainable lab equipment tendering processes

SLG002

The following document aims to establish a University strategy for sustainable procurement in regards to laboratory equipment tenders. It is intended to be utilised by members of procurement staff, estates staff and also academic researchers planning on purchasing new laboratory equipment requiring a university procurement tender.



If you wish to find out more information after reading this document please make enquiries to Sustainable Office in the Estates Department:

(Sustainable labs email address)

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# **University of Birmingham Sustainable Labs:**

# *Proposal for Sustainable Lab Procurement-Tendering Specifications*

**Introduction**

Procurement is a major part of any university, in order to conduct research or teaching in laboratories groups need to be able to have access to the correct scientific equipment.

There are many environmental implications to universities from the purchase of lab equipment both direct and indirect. Direct measures include utility use (energy, water); waste creation requiring disposal and carbon footprints of multiple deliveries to campus. Lab equipment takes a large portion of university lab floor space and sometimes requires bespoke building services to function.

In order to ensure that the University can continue to achieve carbon reduction compared to the 2005/06 HEFCE baseline year, a campus wide sustainable procurement strategy towards Laboratory equipment purchases (research and teaching) is needed. This is encompasses lab refurbishments, new kit outs and new lab builds. By doing so we will begin to start thinking more about what sustainable impacts our purchasing choices are having.

**Aims**

This guidance policy aims to address the following key issues:

1. Awareness from end users of the environmental impacts of their purchases
2. Establishing sustainable tender scoring criteria related to laboratory purchases
3. Collaborative action between Estates, Procurement, Academic and Facilities staff when tendering for items of lab equipment

By working to achieve these aims we are beginning to unite sustainable procurement across all areas of campus. We are conducting great work regarding ethical procurement, sustainable impact analysis and modern slavery/human trafficking.

In order to achieve these aims, work on incorporating sustainable specifications into lab equipment tenders will be done. This way sustainable lab specifications can be incorporated into the early design stages of projects. While we may have made much progress in other areas of sustainable procurement previously, now more than ever is the time to take this progress and apply it to lab specific measures as well as incorporate new strategies.

In order to effectively visualise this procurement framework, a summary of the process can be found on the next page (Figure 1).

*Figure 1. Sustainable lab procurement process summary*

The figure above summarises the ideal process for addressing sustainable lab procurement issues, the steps make effective use of existing university infrastructure and incorporate methods of sustainable labs. Each of these summary steps will now be looked at in more detail.

1. **PROJECT ACCEPTED AND BRIEFING ESTABLISHED**

Whenever a lab construction, refurbishment or kit out is required it will be processed through the universities projects team within the Estates Office. The work will be given a brief and assigned a project manager. Assuming the amount and expense of required lab equipment exceeds the EU tender threshold, the university procurement team will then be involved in creating and distributing tenders to suppliers.

This stage of the process will involve collaboration between sustainable labs officer and procurement division. If a new lab project is due to start, S-Labs officer will notify Procurement/if academic approaches procurement to buy new equipment, they will notify S-labs officer. From this a briefing session will be established in which both parties evaluate the project including the amount of nature of tenders required.

If at this stage of the process, equipment models have not been chosen the sustainable labs officer can suggest energy efficient alternatives to standard lab equipment. This will be conveyed to research leads at the design stage of any lab project.

This cross collaboration of departments in relation to sustainability will allow the university to achieve the third aim of this policy document (collaboration and engagement). If the project scope is sizeable enough i.e. a lab refurbishment spanning the whole floor of a building, then it may be necessary to incorporate more members of staff into the initial sustainability briefing. These may include, but are not limited to: Facilities/Operations managers; Technical Managers; Academic Staff; Project Managers; Estates Utilities staff etc.

* **Risk Analysis during Briefing Stage:**

In order to ensure that both Estates office and Procurement division can devote appropriate level of resources to these issues, careful analysis of the Sustainable risks is required.

The method suggested for this analysis is the 4 step classification system below:

*Figure 2: Four categories of sustainable equipment procurement*

The premise is that during the brief in 1st stage of process, both services will place the equipment to be purchased into one of the 4 categories above. Type A scores are those that will cause the highest implications to campus and as such will require a larger portion of time devoted to mitigate these risks. However Type D will have little effect and therefore won’t require as much planning.

1. **IDENTIFICATION OF SUSTAINABILITY ISSUES WITHIN TENDER**

Once the briefing has been conducted and every stakeholder aware of the project and its included tenders it is then down to those involved to assign sustainable lab criteria to the tender documents for equipment.

Currently within our university tender documents we are asking two main questions related to the environment and sustainability:

**1.** Has the supplier had any legal environmental act issues brought upon them?

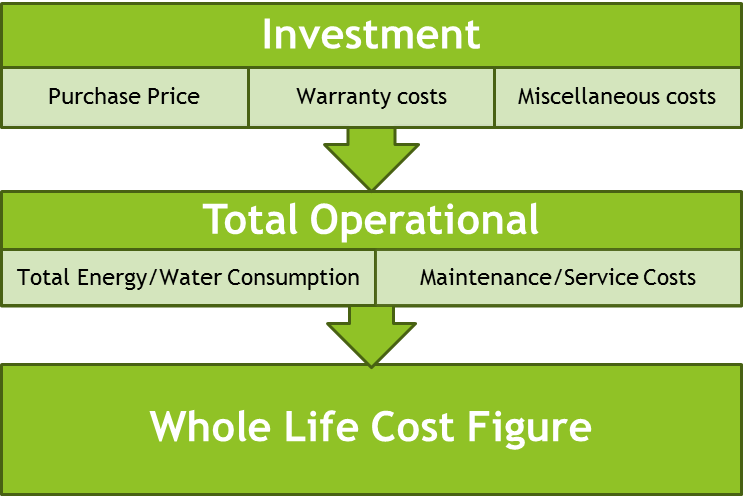
**2.** Do they support sustainability initiatives and if so how?

While it’s important to include these questions within tender applications, there are many more questions we can put to suppliers in order to ensure that we are going to award the most sustainable minded supplier.

What follows in this section is a list of the main areas of importance in sustainable lab procurement at this time, each comes with a brief explanation.

* **Sustainable responsibility with the Suppliers:**
* This criteria is important as it takes the pressure of our infrastructure to make sustainable changes.
* We would be scoring the suppliers based on their willingness to handle the end of cycle impacts of their piece of equipment.
* This means ensuring that they sustainably remove all packaging used on the new equipment (boxes, plastic, and pallets) and dispose of it themselves.
* It also covers any willingness for them to handle the disposal of the piece of equipment once it reaches the end of its useful life.
* **One trip, consolidated deliveries:**
* Often pieces of lab equipment required tendering are quite large and require a variety of scientific accessories. These will usually be delivered in separate cardboard boxes and if large enough will be one at a time.
* In order to reduce our carbon footprint as a result of these actions a criteria point needs to be that suppliers will do their best to ensure that all their items are delivered at once. This reduces the need for multiple deliveries back and forth from campus.
* **Whole Life Costing (WLC) analysis:**
* As anyone working in a university procurement division will know, lab equipment can be expensive. It is not uncommon for items to reach upwards of £250-£500,000. Not to mention that these types of equipment are often used for many years before disposal.
* While being a primarily economical exercise WLC analysis can also offer sustainable improvements to institutions. They allow researchers to track the overall upkeep and running costs of equipment, usually showing that energy efficient models cost less to maintain over their life time. This gives them more confidence towards paying the extra cost.

**Calculate for life of Instrument e.g. 10 years**



**+**

**=**

***Figure 3:*** *2 Step life cycle matrix for lab equipment, incorporating main sustainable factors*

* **Categorising laboratory equipment based on energy data:**
* Another question that can be asked of suppliers is how much energy their equipment will draw
* This incorporates the item itself, plus any additional power required for IT, Cooling, Heating etc. that can affect the environment around the equipment also.
* Sustainable criteria will ask what the energy data levels are for the suggested equipment and also whether they offer an energy efficient or sleep mode on their piece of equipment.
* **Holistic approach to sustainable procurement:**
* This approach aims to show the benefits of better evaluation of the day to day operation of the equipment and not just buying efficient equipment.
* By establishing better management strategies for the pieces of equipment being tendered we are adding another level of economic and environmental benefits into the procurement process.
* An example of this is clearly evident when discussing Freezers: Are there less costly methods of sample storage? Can you reduce number of freezers? Do all the samples really need to be stored? Once we answer these questions we can then approach purchasing an energy efficient freezer.

1. **CONSULT WITH LEAD RESEARCHER TO APPLY SUSTAINABLE METHODS**

* This is the last stage in the proposed process, it focusses on conveying all of the above strategies to the lead researcher responsible for the lab equipment.
* By engaging them in the process we are showing a collaborative effort towards sustainable lab procurement on campus, which will allow us to progress into Flexible Framework Level 5.
* At this point the briefing team are suggesting the specifications to the academics involved and asking for their input and which will be applicable. It is understandable that not all sustainable procurement specifications will work within some tenders, this is due to certain pieces of lab equipment being designed bespoke for the research and companies having long established business models they aren’t willing to change.
* If this is the case the briefing team will suggest alternative sustainable lab specifications that won’t directly impact on the equipment specifications (one trip deliveries, holistic approaches etc.)
* Once agreed with the academic it is at this point that the sustainable lab criteria questions will be incorporated into the tenders prior to being made live for suppliers to respond.

**NEXT STEPS**

* Implement proposed process into actionable project as soon as practicable.
* Up-coming projects involving Laboratory spaces include Collaborative Teaching Lab, Molecular Sciences and School of Engineering. It is proposed that Sustainable Labs Officer, Procurement Division and Project Manager for CTL meet to discuss sustainable procurement options.
* Collaborative Teaching Laboratory is designed to bring together practical teaching activities across a broad range of science and engineering disciplines, into a focal area on campus. There is set to be minimum of 3 large lab spaces requiring kitting out with research equipment. It is suggested that the Sustainable Lab procurement process starts with this project.
* This project will be treated as a pilot to address any issues found during the program of the project. Feedback will be requested throughout the process and then once the project reaches completion and tenders awarded, the process will be evaluated and if needed updated to better meet the requirements of all involved.
* **Proposed actions:**
* Discuss idea with Management team for CTL project and Procurement Division
* Set up meeting between stakeholders to discuss scope of project and how Sustainable Lab Procurement process can be included
* **End of document**