

LEAF - Gold Criteria

Category	Criteria	Target Outcome	Criteria not met
Waste	The lab has implemented some form of reuse of materials, e.g. reuse of consumables which has led to a measurable reduction in waste produced. The procedures, along with how to suggest new opportunities for waste reduction are communicated to all users who know where to access this information and share their ideas.	• Users can demonstrate any assessment of waste practices. Resulting impacts have been recorded, e.g. via LEAF calculators.	• Waste has not reduced and/or recycling rates have not increased. Or recycling rates have been reduced with no reasoning.
People	The lab has implemented at least one action to reduce travel and adopted low-carbon travel policies where possible.	• Environmental implications of travel are considered and minimised where feasible, e.g. via teleconferencing. • This criterion is not about commuting to the lab.	• No actions to reduce member travel have been implemented and reducing travel has not even been considered.
Purchasing	LEDs have been considered for use in equipment used for research illumination applications and purchased where feasible.	• Feasible options for LED lights in research applications have been identified and implemented. • This excludes room lighting and should focus on LED applications for research, e.g. microscopy.	• Options for the use of LEDs in research equipment such as fluorescence microscopes have not been investigated nor implemented.
Equipment	There is a process in place for excess equipment and materials in the lab to be shared, repaired locally, or sold. Lab users are made aware of relevant schemes and where to find further information about them.	• Excess equipment and materials are identified and made available for reuse by others through clearly defined procedures. • There are means to fix broken equipment.	• There is no process in place for the reuse of excess equipment and materials, and/or equipment is thrown away which could have been used, repaired, or shared.

Equipment	Where water is used for cooling, it is recirculated. When new equipment requiring cooling is purchased, where feasible, water-cooled options are included.	Where water cooling is in use it is recirculated.	Water cooling is available but either not used or water goes to waste
IT	The energy impacts of inefficient computational analysis techniques have been minimised by optimising computing code and the number of storage clusters has been optimised according to the task or schedule of tasks being executed. Staff competent in developing the codes have been identified and provide support to those who are unfamiliar with best practice.	- Optimisations have led to faster, more energy efficient operation. - Storage clusters use minimum server space. - These criteria only apply to labs with significant data storage.	Computing code and/or storage clusters have not been subject to an optimisation process, nor is there one planned or underway.
Sample & Chemical Management	There is a system in place to promote the use of existing data, and/or existing samples from biobanks (where data protection will not be affected), as opposed to always generating novel data or sourcing new samples. Details of the data/samples and associated data protection/ethical approvals for their usage are communicated to all lab users.	The lab can demonstrate its use of shared external inventories for samples, data, chemical and material acquisition where possible and facilitates sharing through making its resources available to other external laboratories.	There is no acquisition of and/or sharing of samples, materials and chemicals with external laboratories.
Sample & Chemical Management	At least 85% of samples and chemicals are being actively used, or being stored and are easily identifiable. No more than 15% should be uncatalogued.	- There is evidence of organization or a catalogue of chemicals. Alphabetical organization on a shelf in a communal space is sufficient. - The lab user can give detail about the management of chemicals and samples including how frequently unused or out of date items are disposed of.	- If the lab has either large chemical stocks or freezers full of unknown items, this criteria should not be accepted. - There is no clear tracking of samples.

		Spot check a few chemicals to ensure that they are no older than 5 years old. Enquire about older chemicals with the user. Award the criteria if there is sufficient explanation.	There is no evidence for the organization and monitoring of chemicals.
Research Quality	The lab has adopted laboratory management software, or has reviewed the options and provided a reason why this isn't appropriate.	Laboratory Information Management Systems (LIMS) are in use where appropriate, or as a minimum users have considered LIMs for sample or chemical management.	Laboratory management software options have not been reviewed, and there are clear opportunities for software to improve operations.
Research Quality	Sterilisation and cleanliness methods have been reviewed to ensure the appropriate method is being used and is not excessive for the particular application of its use. This includes but is not limited to: autoclave methods, UV sterilisation, and cleaning rotas. Any revisions to methods have been communicated to users, are documented and those responsible have received appropriate training.	Over-treatment of outgoing waste and excessive sterility may represent wastage. As such the lab has reviewed its means of sterilisation/ cleanliness for opportunities to reduce autoclaving, UV sterilization, or etc.	The methods of sterilisation and cleanliness have not been reviewed and assessed, and there is no plan in place to do so.
		The lab can evidence communication of changes in protocols if requested.	The lab cannot evidence communication of changes in protocols if requested.
Ventilation	Where possible, the lab has engaged and implemented actions via estates on lowering: fume cupboard flow rates, air change rates, and/or removing unnecessary extracts from safety cabinets to become recirculating.	Extract and ventilation are optimised ensuring safety whilst maximising energy efficiency, or at minimum users have actively engaged with estates on such opportunities beyond a single email.	No attempt has been made to engage with estates with regard to optimising laboratory extract and ventilation, and there are opportunities to do so.
Water	A procedure has been devised and implemented to ensure the appropriate use of sinks and drains for the discharge to laboratory waste. The	Users can give examples of where guidance for effluent waste is displayed. This could	No evidence for guidance is displayed.

	procedure should take into account spills and emergencies. The procedure should be communicated to all lab users and your response should indicate how this has been achieved.	include but is not limited to, in the induction, posters, given at lab meetings, signage at sinks.	
Teaching	Environmental impacts have been reduced through the design or revision of experimental procedures for taught laboratory courses. "Teaching" can also include undergraduate and master students summer projects or new PhD projects. *Where there is no teaching, simply input "No Teaching"	• Evidence that teaching experiments have been either revised or designed to include sustainable practices.	• There is no evidence that sustainability has been taking into account when designing experiments.
		• Examples may include using smaller tubes, using smaller sample sizes, or using reagents that are less toxic.	
		• This criterion is an extension of the previous teaching criteria, in that sustainability is not only integrated in the lesson content but experimental design has been affected.	
Sample & Chemical Management	No solvents are being evaporated into the atmosphere. Solvent selection has been considered for 'greenness'. Solvent recapture/recycling has been assessed for feasibility and implemented where possible.	• Any vapor from solvent evaporation is captured and not released into the atmosphere.	• Solvents are being evaporated and not recaptured – This likely takes place within a fume cupboard. • No consideration for greener solvents has been made.
		• Where feasible, captured solvents have been condensed, possibly purified, and made available again for use.	
		• The lab has reviewed the Chem21 Green Solvent guide, and substituted any solvents accordingly.	
People	The lab has taken action to address the sustainability of corresponding office spaces. This	• Offices spaces are participating in a scheme such	• There exist lab members who still unaware that the lab is

	may be through a programme, or by taking individual actions.	as Green Impact to complement the sustainability actions in the laboratories	actively working to improve its sustainability in office spaces. • No sustainability actions are being undertaken in the corresponding office spaces
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