

# COLLABORATIONS FOR CHANGE

Global Goals for Tomorrow's Education, Today

19TH ~ 21ST JUNE 2018 KEELE UNIVERSITY



## COLLABORATIVE AND INNOVATIVE APPROACHES TO SUSTAINABILITY IN SCIENCE TEACHING LABORATORIES

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**SUSTAINABLE  
WAYS**



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# COLLABORATIVE AND INNOVATIVE APPROACHES TO SUSTAINABILITY IN SCIENCE TEACHING LABORATORIES

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- Who are the key collaborators, and why are they important?
- Approaches to embed sustainability, some common challenges and solutions
- Diverse opportunities and institutional benefits
- Case study – the ‘StarFin’
- ‘Model for change’ exercise
- Exercise feedback and discussion

# COLLABORATIVE AND INNOVATIVE APPROACHES TO SUSTAINABILITY IN SCIENCE TEACHING LABORATORIES

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## The **key collaborators** for improved **sustainability** performance in **teaching laboratories**

- Who are they?
- How can we engage them?
- Why do we need them?

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## The key collaborators – who are they?

**Technical Staff / Laboratory Support Staff**

**Academic Staff / Teaching Staff**

**Sustainability Professionals**

**Equipment suppliers**

**Students**

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## The key collaborators – how can we engage them?

### Technical Staff / Laboratory Support Staff

- Improve operation
- Personal development opportunities
- Recognition

### Academic Staff / Teaching Staff

- Enhance learning and teaching
- Benefit student employability skills
- Additional marketing point

## Develop transferable skills!

### Sustainability professionals

- Institutional resource savings
- Increase visibility
- Opportunity for case study creation

### Equipment suppliers

- Generate sales
- Identify new areas in the market
- Opportunities for collaboration

### Students

- Enhance learning
- Additional employability skills
- Experience of cutting edge technology

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## The key collaborators – why do we need them?

### Technical Staff / Laboratory Support Staff

- Procurers
- Manage lab operations
- Technical expertise

### Academic Staff / Teaching Staff

- Design and adapt student protocols
- Develop student skillsets
- Academic experience

### Sustainability professionals

- Events, awards and publicity
- Access to funding streams
- Knowledge of strategic opportunities

### Equipment suppliers

- Access to latest products
- Manufacturing capabilities
- Market knowledge

### Students

- The 'customer'
- Encourage a new perspective
- The next generation of lab users

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## Approaches to embed sustainability

Local champions – at all levels, *eg. Green Impact*

Environmental Management System

Take advantage of existing systems, *eg. H&S audits; 'Living Lab'*

Supplier profiling and collaboration



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## Common challenges

- Resource allocation – competing priorities
- Embedding within curriculum
- Funding
- Low take-up of opportunities, e.g. Green Impact
- Developing beyond initial concept

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## ... addressing common challenges

- Resource allocation → where are champion opportunities?
- Embedding within curriculum → academic champions, ESD, case studies
- Funding → creative financing (Salix, supplier or utilities collaboration, combined/matched-funding approach)
- Low take-up of opportunities → ongoing highlighting of success (GIA/GGA)
- Developing beyond initial concept → grow opportunities for collaboration and innovation!

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## **Diverse opportunities with institutional benefits**

Resource savings – energy, water, waste

Staff and student skillsets, knowledge and employability

Innovation and enterprise

Awards, marketing, recognition and reputation

Hubs for sustainable science

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## The 'StarFin' case study

**Innovation** coupling two existing technologies

Saving **150,000 litres** of water a year

**40%** reduction in **energy** and significant **space** saving

**Embedded** in teaching experiments

**Impact** on student and staff **awareness of sustainability**

**Green Gown Awards Winner** – Research and Development



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## ‘Model for change’ exercise

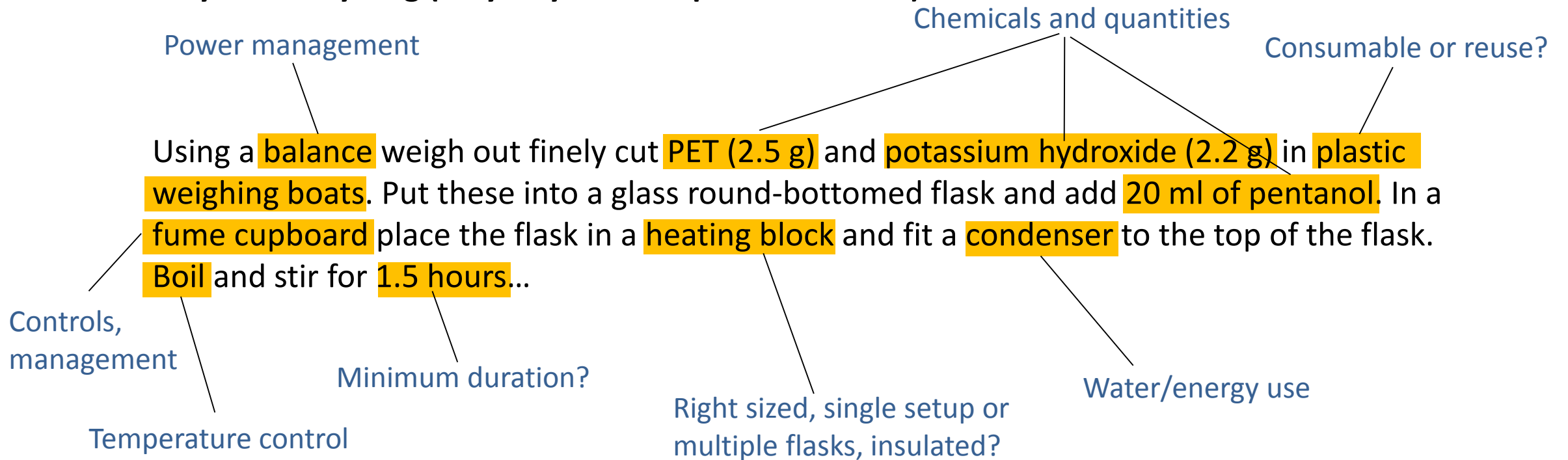
1. Read through the student protocols
2. Highlight areas where opportunities could exist – these could be relevant to equipment, consumables, chemicals, waste streams etc.
3. Don't worry about detail / knowledge of alternatives, just identify any potential opportunities!
4. Discuss within your groups and annotate which of our collaborators we could target for each opportunity. This could be (and in many cases will be) more than one group.
  - If so who could/would take the lead on this in your institutions?

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## 'Model for change' exercise - example

### Polyester recycling (Polyethylene terephthalate - PET)



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## ‘Model for change’ exercise

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**‘Model for change’ – Feedback and discussions**



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## **‘Model for change’ – UEA toolkit**

Technical Staff – Lab equipment, consumables and operations – Green Impact

Academic staff – Experiments, chemical selection, embedding sustainability in teaching in and outside of the laboratory

Sustainability team – Decision-making, assessment tools, funding options, engagement strategies, capture activity and savings in reporting mechanisms

Equipment suppliers – Alternatives and opportunities to innovate

Students – Valuable feedback, Green Impact / Living lab project investigators

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## Our take-home messages

1. Engage the key groups – seek champions everywhere!
2. Foster collaboration and innovative methods
3. Celebrate successes

**ANY QUESTIONS?**

**[www.uea.ac.uk/about/sustainability](http://www.uea.ac.uk/about/sustainability)  
E [sustainability@uea.ac.uk](mailto:sustainability@uea.ac.uk)**



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*The University and College Sector's Collective Response to the Global Goals*



**2030**

SDGs deadline



**12m**



students represented by  
Accord Endorsing partners

**34**



Countries have signed  
the Accord globally

**17  
Goals**

est. pop by 2030



**8.5 billion**

*End extreme poverty, inequality and climate change*

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