Foodservice Carbon Professional

Warewashing Product Module

Course Scope

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Introduction

- **Aim:** to empower the confidence and knowledge to assess and address key energy, carbon and sustainability issues related to foodservice Warewashing products
- The Foodservice Equipment Association has brought its strength to providing a unique and comprehensive resource for the industry
- Developed and delivered by Dr Sam Mudie, of Hospitality Energy Saving and former Head of Energy and Sustainability at University of Reading

FEA Foodservice Equipment Association

Information Involvement Influence

HOSPITALITY ENERGY SAVING & SUSTAINABILITY

University of Reading

Course Delivery and Overview

- Learn-at-your-own-pace recorded slides
- Multiple choice questions throughout
- Must complete core module assessment before commencing the warewashing module

Section 1 – Scope and Application

Section 2 – How it Works

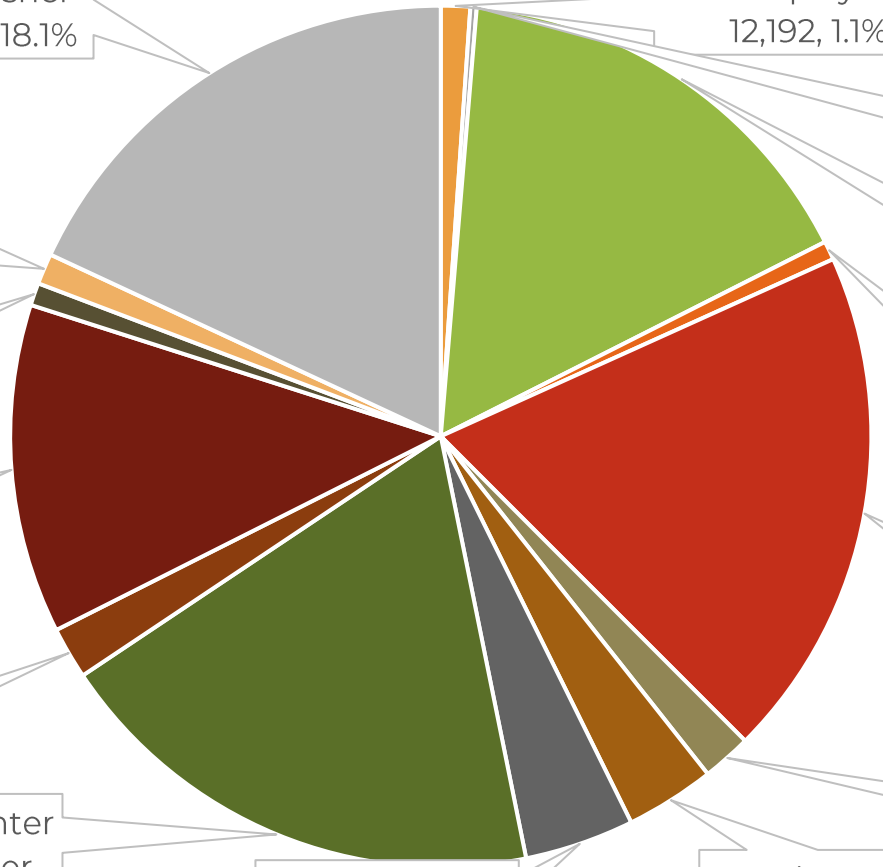
Section 3 – Legislation and Regulation

Section 4 – Lifecycle Emissions

Section 1 - Scope and Application

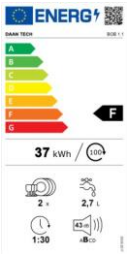
Scope	Learning outcome	Benefits	Slides
Key professional food service warewashing equipment, their applications and selection criteria.	Understand the various key professional food service warewashing products, including their specifications, intended applications, and selection criteria, such as appropriate sizing, durability, energy efficiency and features.	Participants will be equipped with the foundations to make sustainable and energy-efficient choices, alongside the broad pressures applying to the selection and application of warewashing equipment, as well as gain context for the rest of the course.	4-17

Section 1 - Scope and Application



Section 1 - Scope and Application

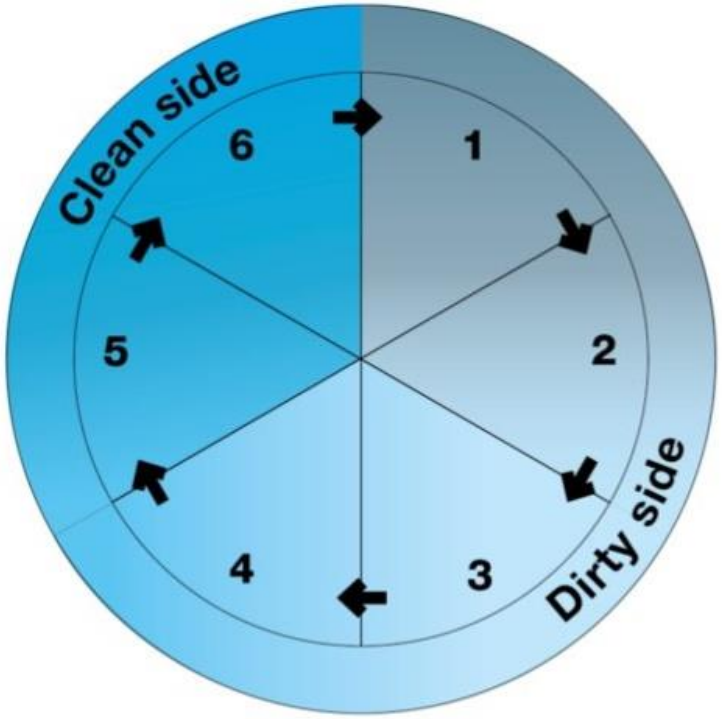
- Correct sizing, layout, capacity, space and ergonomics
- Operation efficiency – professional vs domestic units, water heating, cycle length and recovery times
- Durability, reliability and maintenance requirements, steel grade, electrical capacity and water connections
- Legislation and regulation – design, water, safety features, environmental compliance with industry standards
- Budget and lifecycle costing
- Energy usage and carbon - intuitive controls, eco modes, training requirements, heat and water recovery



Section 2 – How it Works

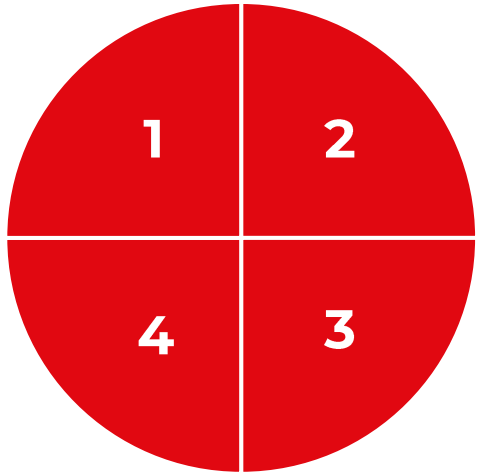
Scope	Learning outcome	Benefits	Slides
Key principles and processes of warewashing	Understand the essential principles of sanitation and cleaning	Participants will understand how commercial warewashing equipment works in order to design, apply, use and maintain equipment effectively, thereby keeping its energy consumption and emissions to a minimum.	5-25
Key components in warewashing systems	Identify and describe the functions of the major components in warewashing equipment.	Participants will be able to discuss the importance of each component in maintaining the efficiency and performance of the system, while reducing carbon emissions.	9-18
Understanding warewashing chemicals	Recognise the components of warewashing chemicals	Understanding of the component's actions taking place during sanitation will provide context for the environmental footprint of these chemicals	20-22

Section 2 – How it Works

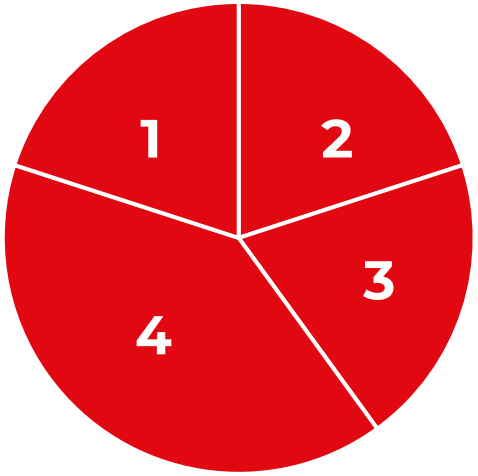


1	Dirty dishware, return/pick up	4	Cleaning/drying
2	Manual pre-sorting/pre-washing	5	Removing the clean washware
3	Loading the dishwashing machine	6	Preparing to start again

Average level of dirt on hardwearing crockery

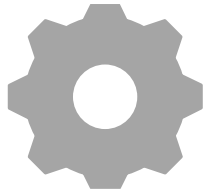


Delicate glasses



1 - Temperature

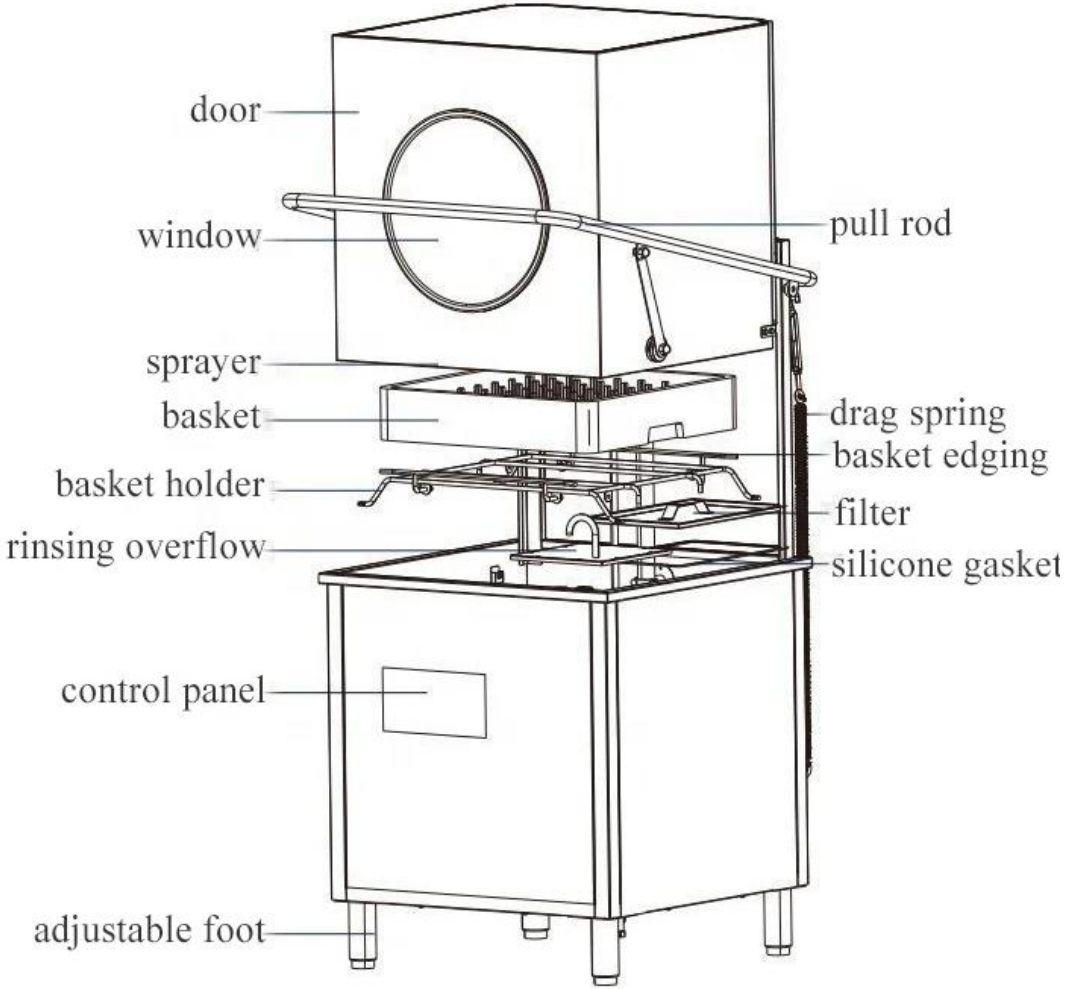
2 - Chemistry



3 - Mechanical Action

4 - Time

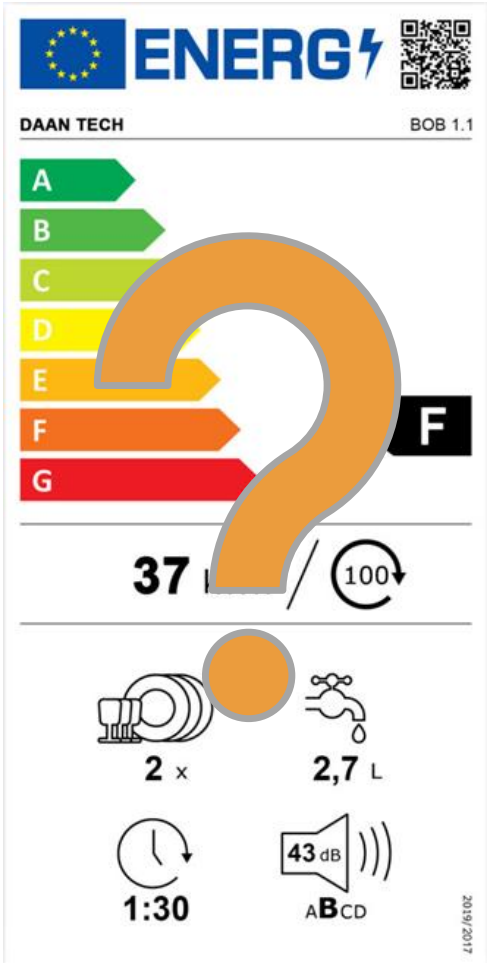
Section 2 – How it Works



Section 3 – Legislation and Regulation

Scope	Learning outcome	Benefits	Slides
The energy technology list, energy measurement and labelling for warewashing equipment	Understand how the energy and water consumption of warewashing equipment are measured and disclosed.	Gain a comprehensive understanding of energy consumption metrics to make informed equipment purchasing decisions and identify opportunities for cost reduction on behalf of customers.	5-6
Water regulations compliance	Understand various water regulations such as the water supply regulations 1999 and legionella control, and the practical actions that need to be taken to comply.	Acquire knowledge of critical compliance measures to avoid legal penalties.	8-11
Understanding electrical regulations for warewashing equipment	Understand the electricity at work regulations, electromagnetic compatibility regulations and designated standards for low voltage appliances.	Develop the expertise to accurately interpret and utilise electrical regulation, enabling informed decision-making and improved compliance.	13-15
Other environmental legislation affecting warewashing equipment	Understand other broad environmental regulation such as grease management, RoHS, SCIP, UKREACH, COSHH and other sustainability reporting requirements	Enhance your ability to navigate complex regulatory landscapes, ensuring comprehensive compliance and supporting your company's commitment to sustainability and corporate social responsibility. Provide authoritative advice to clients, partners and colleagues about the broad regulatory landscape of energy and carbon related regulations for warewashing equipment.	17-22

Section 3 – Legislation and Regulation



Section 4 – Lifetime Emissions of Warewashing Equipment

Lifetime emissions of warewashing equipment

Embodied carbon of warewashing equipment

Transport and distribution

Design for low carbon

Energy and carbon in the use phase

Operator training

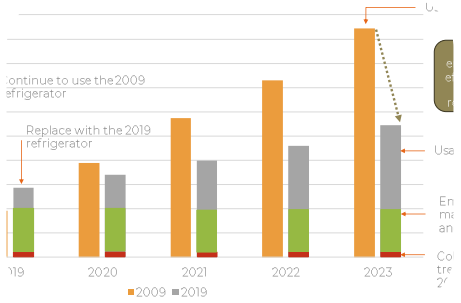
Environmental Impact of Warewashing Chemicals

Section 4 – Lifetime Emissions of Warewashing Equipment

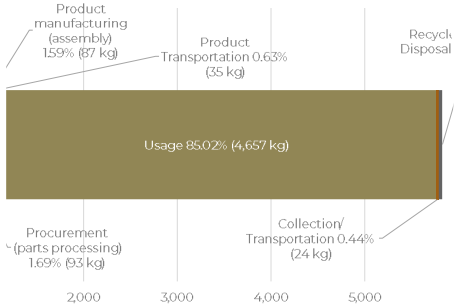
Appropriate maintenance of Warewashing equipment

Innovation and development in warewashing technology

End of (first) life of equipment

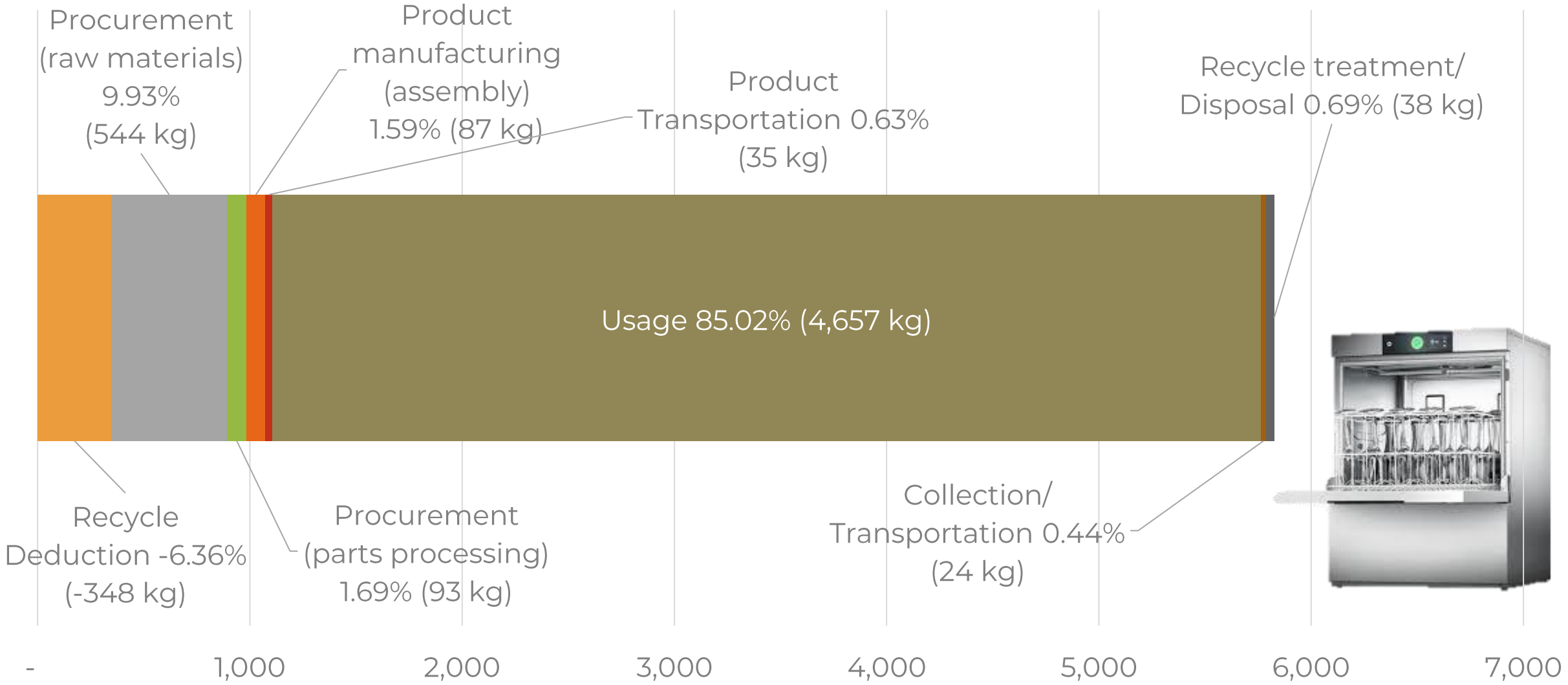


Lifecycle costs



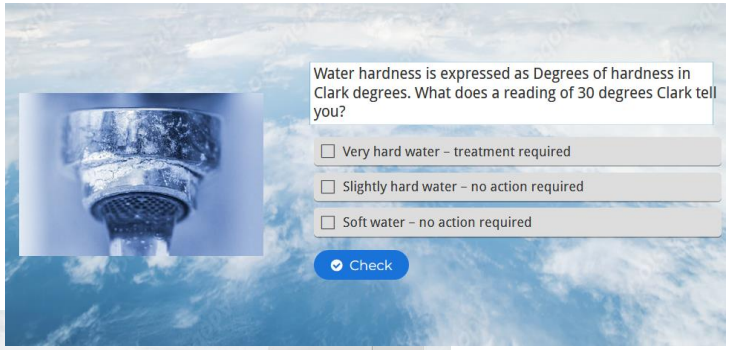
Case studies of whole lifetime emissions

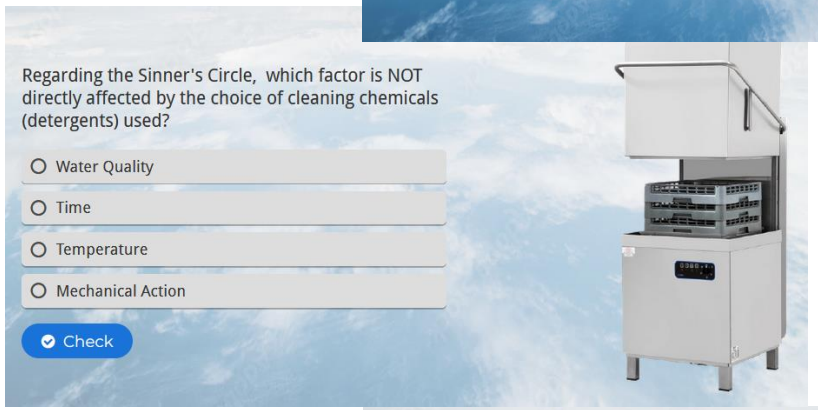
Lifetime Emissions – Undercounter Glasswasher 5,477 kgCO_2e

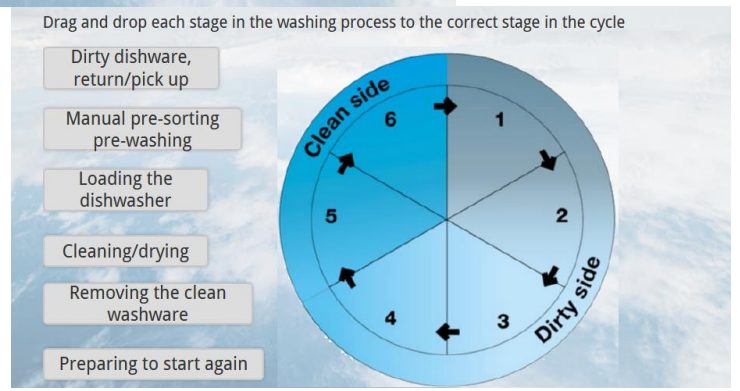


Assessment

- This module should take you 10-16 hours of study
- You should be aiming to be prepared to take the assessment in 2-3 months' time
- Assessing your knowledge
  - In-lecture interactive questions
  - End of course quiz questions
  - End of course long-answer questions
- Feedback is gratefully received!







Warewashing Product Module Overview

Section 1 – Scope and Application

- Types of equipment, specification and intended use
  - Pot and Utensil Washers
  - Pre-Rinse Sprays
  - Cutlery Retrievers
  - Undercounter Dishwashers and glasswashers
  - Detergents Dispensers
  - Rack Machines
  - Pass through/Hood Machines
  - Flight Machines
  - Conveyors and Wash Up Systems
- Considerations for the specification and application of warewashing equipment

Section 2 – How it Works

- How warewashing equipment works
- The main components of professional foodservice warewashing equipment
- The principles and processes of sanitation
- How warewashing chemicals operate
- Foundations of making environmentally conscious decisions regarding reduced energy consumption and emissions

Section 3 – Legislation and Regulation

- Legislation and regulation relating to energy and carbon in foodservice warewashing equipment
- Energy technology list and Ecodesign
- Working with electricity
- Data regulations
- Grease management
- Sanitation
- Water supply and fittings regulations
- Other sustainability reporting and compliance

Section 4 – Lifecycle Emissions

- 4a (Part 1)
  - Manufacturing
  - Design and selection
  - Specification of energy saving features
  - Use phase and practical action
  - Reducing emissions from chemicals
- 4b (Part 2)
  - Maintenance
  - Research and Innovation
  - End of Life
  - Reduction of carbon equivalent emissions from foodservice warewashing equipment

Thank you, and enjoy

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