

SUPPLIER WEBEX

Resource Efficiency: Finding waste reduction opportunities



Nigel Marsh
Global Head of
Environment



Matthew Payne
Environment
Manager

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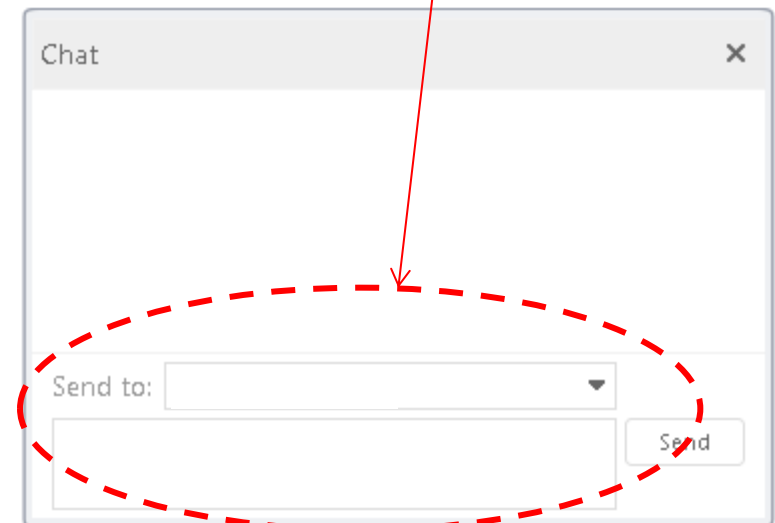
This session

- Introduction and the case for action
- The waste hierarchy
- Where do we start?
 - Generic process
 - Supporting tools
- Summary



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To ask a question ...



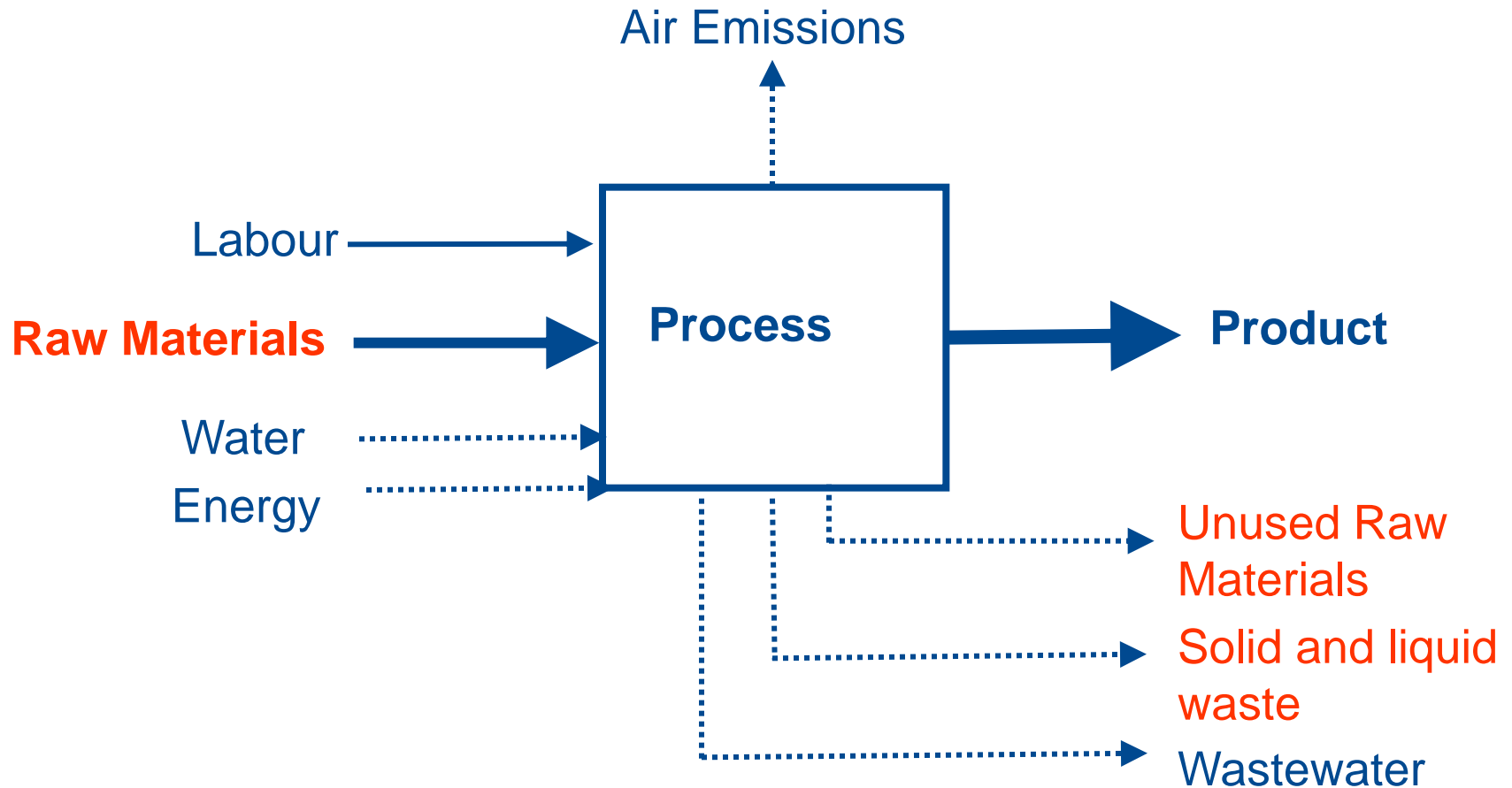
Send questions to: -----(Host)

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Focus of today's webex



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The case for action

- Waste represents a significant, mainly hidden cost of waste to the business



True cost:

- Typically 4-5% of annual revenue
- On average 10 x disposal cost

- Often higher costs than energy (but largely hidden)



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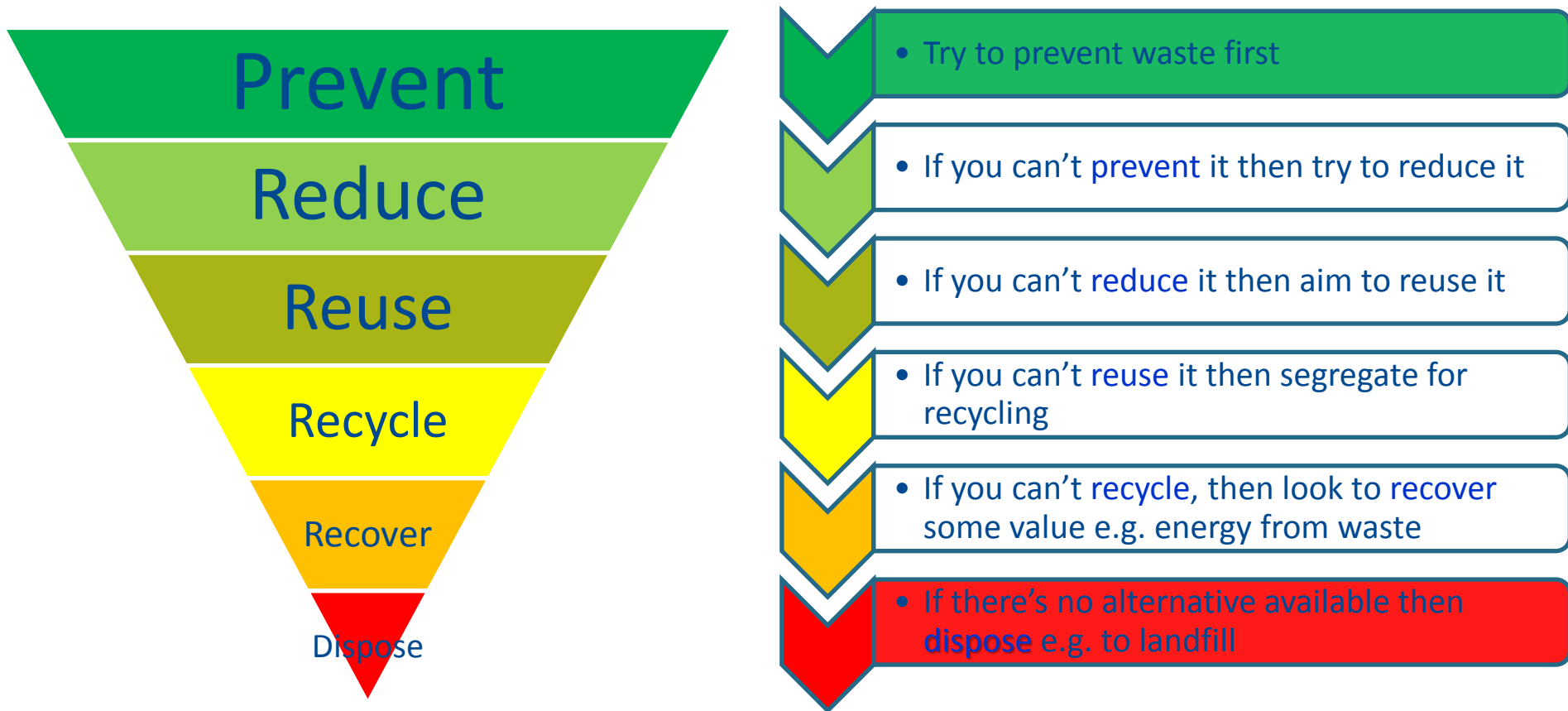
Key findings from external studies

- Widely recognised that resource efficiency, security of materials and a circular economy are critical to our future economic competitiveness and resilience
- In many companies, especially SMEs, resource efficiency improvements are often reactive and ad-hoc rather than systematically built into processes
- Many businesses don't have resource efficiency as part of their business strategy
- Major barriers:
 - Lack of Senior leadership engagement
 - Poor access to good quality data
 - Limited availability of staff to focus on resource efficiency
 - Short term view on opportunities (e.g. linked to funding and payback thresholds)



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Making improvements – applying the Waste Hierarchy

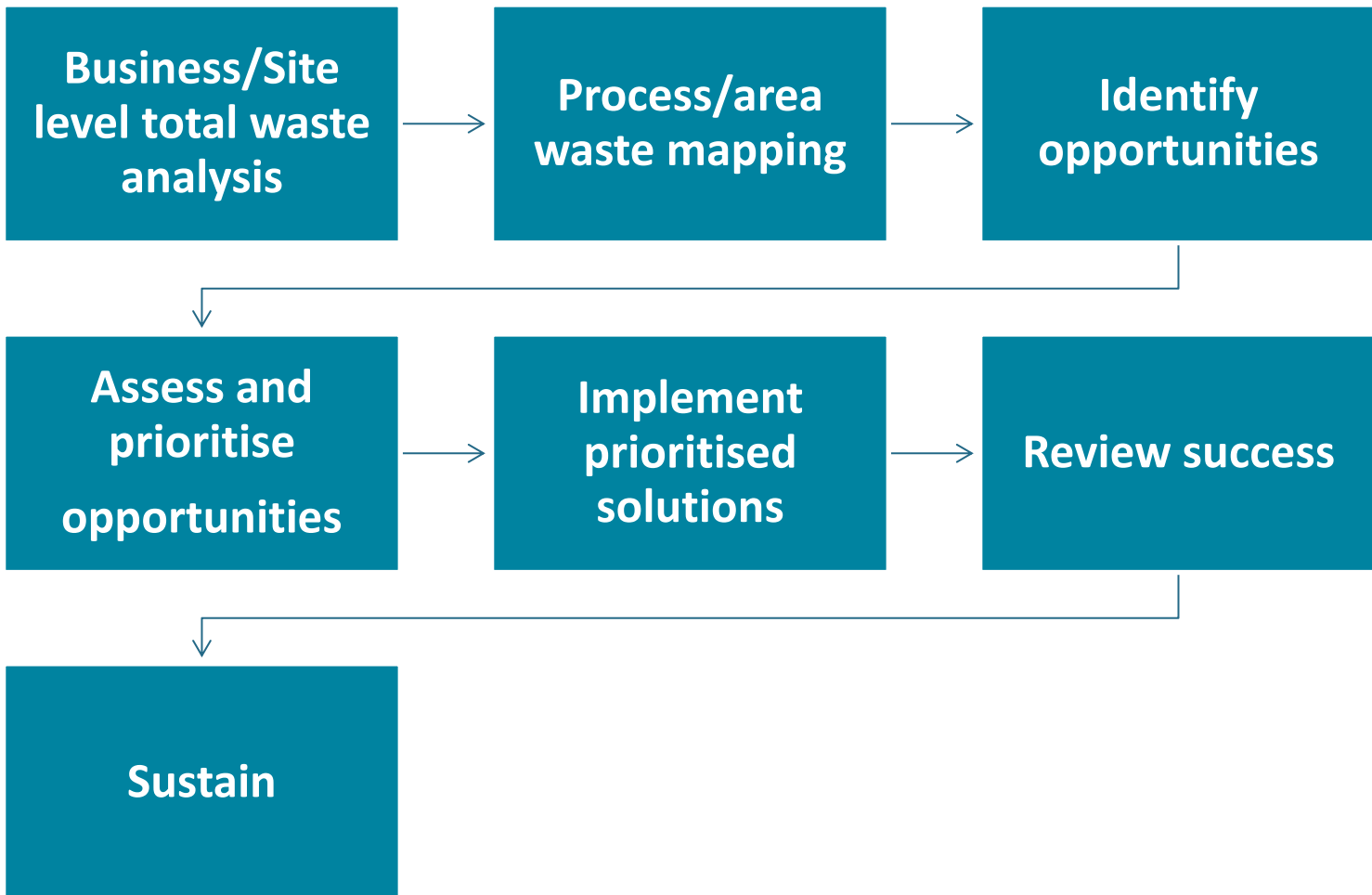


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Where do we start?



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Supporting tools

Map wastes and
identify
opportunities



Prioritise
opportunities



Develop business
cases



Implement
solutions and
capture benefits



Waste cost
analysis template

Waste mapping
template & checklists

Resource Efficiency
Simple cost/benefit calculator

Section/Business: Sector:
Site: Site:
Project/Initiative: Project:
Payback period:
Costs expressed in:

Cost / Benefit Area	Year 1	Year 2	Year 3	Year 4	Year 5
Costs					
Capital investment					
Training					
On annual maintenance					
Benefits					
Total cost					
Increase in recycling revenue					
Waste disposal savings					
Operating cost savings					
Raw material savings					
Total benefits					
In year net benefit / cost					
Cumulative net benefit / cost					

Note: Care must be taken to assess...

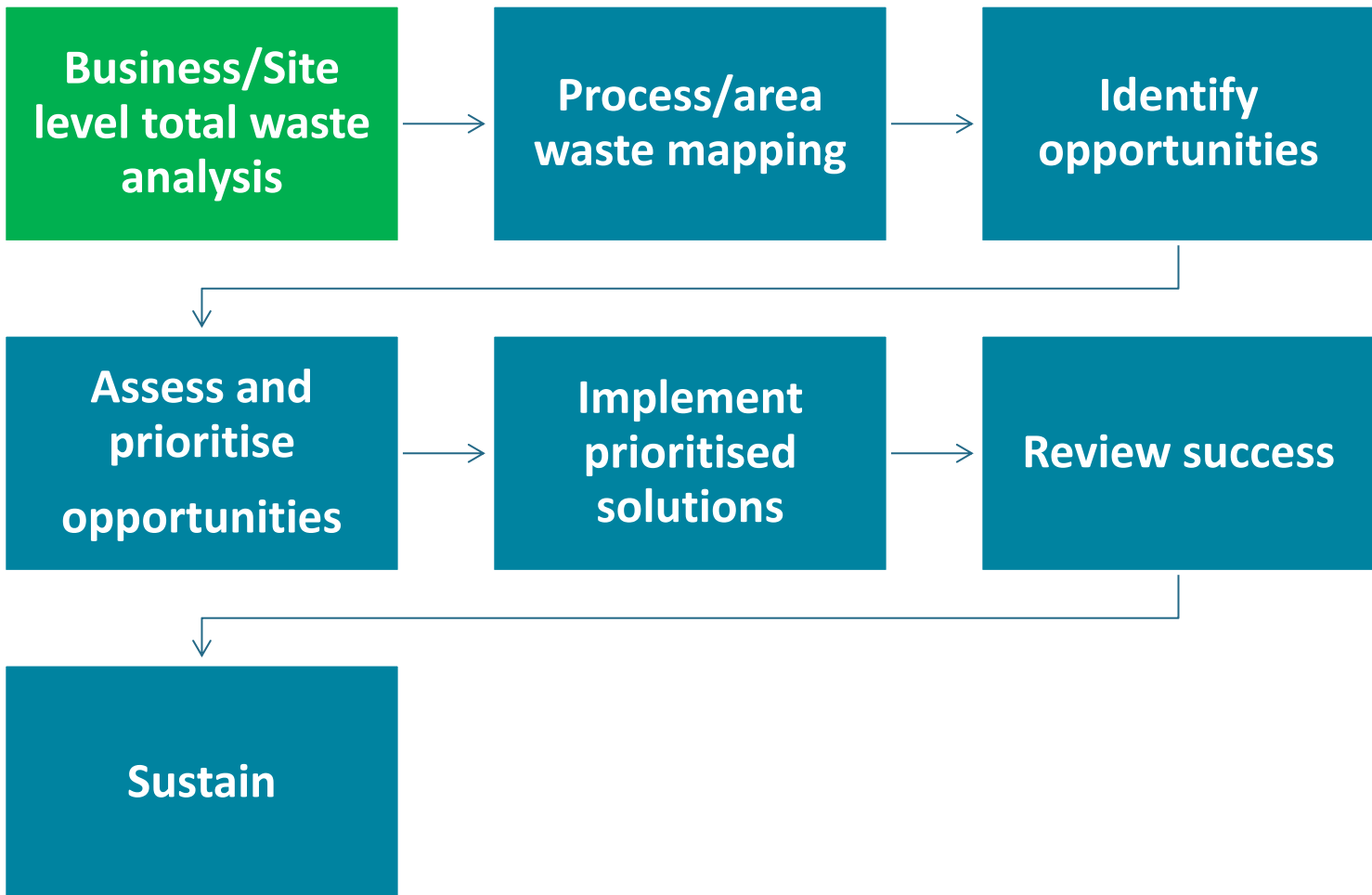
Simple cost/
benefit sheet

Available from:
<http://www.rolls-royce.com/sustainability/better-business/suppliers/supplier-resources.aspx#waste>



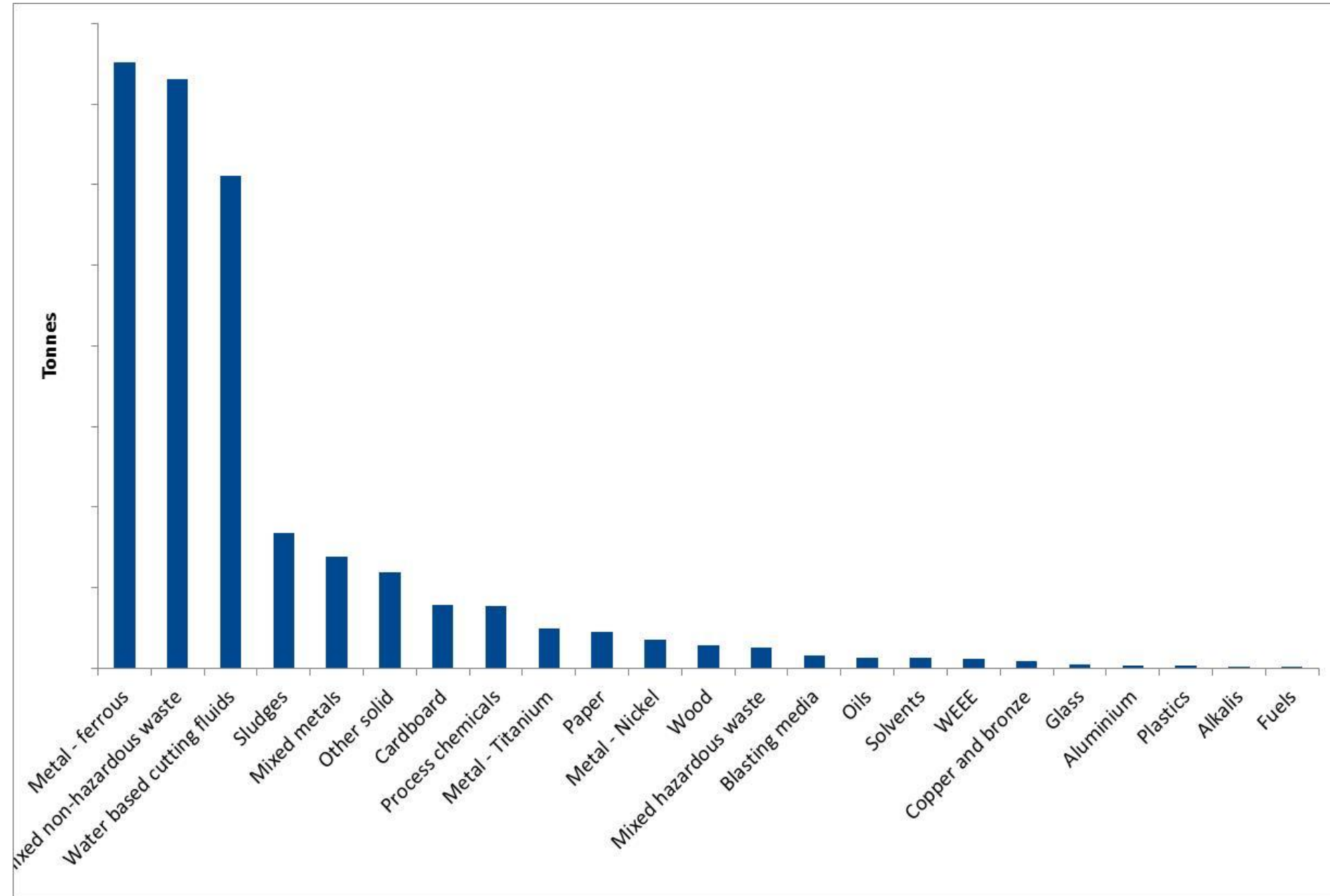
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Where do we start?



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Where to focus by size of waste stream



Waste cost analysis workbook



Waste cost analysis workbook



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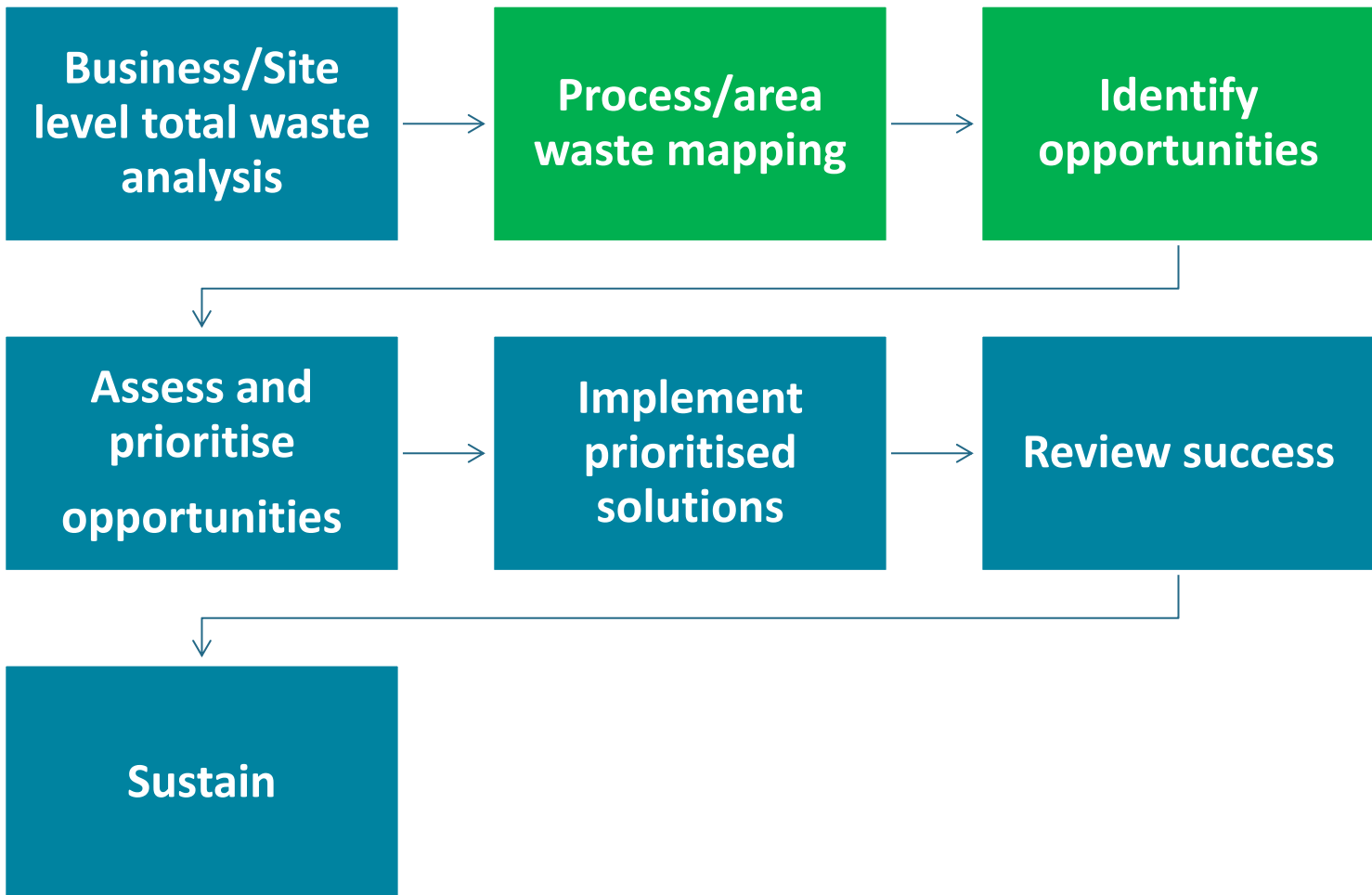
What to do with the data

- **Follow up on where large waste streams are made and potential opportunities**
- **Look for unexpected results e.g. why does the site produce so much waste paper when its mainly manufacturing?**
- **Addressing larger waste streams may be more complex than some of the smaller waste streams.**



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Where do we start?



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Applying Lean principles – thinking and seeing “environmental” waste

- Finding quick wins
- Help motivate local action
- Some wastes not readily identifiable from top level waste analysis, but would give a good local saving e.g. carbide tip segregation and recycling.



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Mapping Environmental Waste to 8 wastes of Lean

The 8 Wastes of Lean	Links to Environmental waste and waste reduction target
Transportation	Opportunities for closed-loop packaging (return/reuse)
Inventory	Purchasing processes that optimise sourcing option for ease of production. Provision and adherence to correct storage of materials to preserve integrity
Motion	Arrangements in place for the segregation and collection of all waste streams to maximise opportunities for recycling & recovery
People	Waste mapping tools available to capture opportunities for waste prevention and reduction
Waiting	Arrangements in place for the timely collection of wastes
Over-processing	Carrying out unnecessary process steps that lead to unnecessary wastes
Over-production	Any use of materials that are not part of the final product and end up as waste as part of normal business activity
Defects	Maintain focus on reducing non conforming parts (scrap reduction)



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What to look for (examples)

- Waste packaging
- Out of date consumables
- Poor inventory control
- Reuse of 'waste' materials
- Poor waste segregation
 - Behaviour
 - Lack of bins/containers
- Leaks and spills
- Poor/lack of maintenance
- Equipment on but not used
- Excessive printing
- Process rinse/cooling water used once only
- Include materials that are recycled
- Consider every output from the process except the product



Checklist



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How to do waste mapping

- Walk around your area and identify inputs (materials) and sources of waste (use waste map template)
- Talk to others in your team about their knowledge of waste streams
- Capture any immediate ideas for reducing waste
- Try to measure/estimate the amounts of each waste – record on the waste map
- Record any ideas that you might have to follow up
- Prioritise areas for action
 - What can you do yourselves?
 - What do you need help with?
 - Work with local champion/HSE Advisor or manager to develop ideas, quantify savings and look for similar opportunities on site



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Process/area waste mapping template

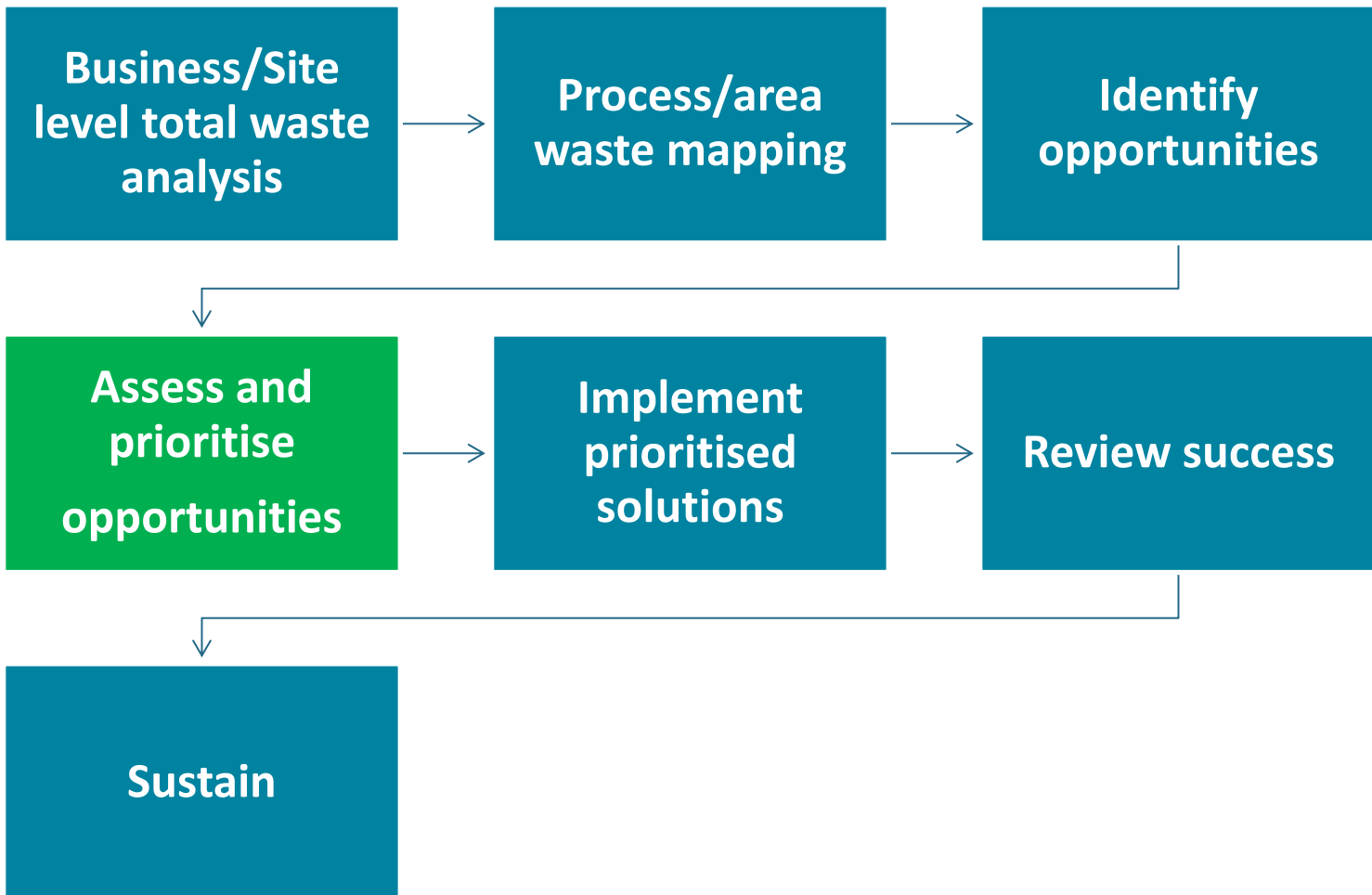
Business/site: <u>Business X</u>			Date of mapping: _____				
Location on site: <u>Plant Y</u>			Lead reviewer: <u>T Rashcan</u>				

Input materials	Quantity	Frequency of input	Process/Area Name	Waste materials	Quantity	Frequency of output	Cause of waste	Disposed in
Coolant	1 drum	weekly	Milling	Coolant	2 BCS	monthly	Out of spec/dirty	BCs
Hydraulic oils	5 litres	daily		Spill pads	1 bag	day	leaking machine	Black barrels
Metal components	5 discs	daily		Swarf	1 bin	day	Milling	Swarf skip
Cutting tips	6 tools	daily		Cutting tips	2	day	work instructions	Dedicated boxes

Immediate opportunities to reduce waste
fix coolant leaks on machine

Ideas to follow up
Drain coolant from swarf bin before putting in skip
Can we use cutting tips for longer?

Where do we start?



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Simple cost benefit analysis

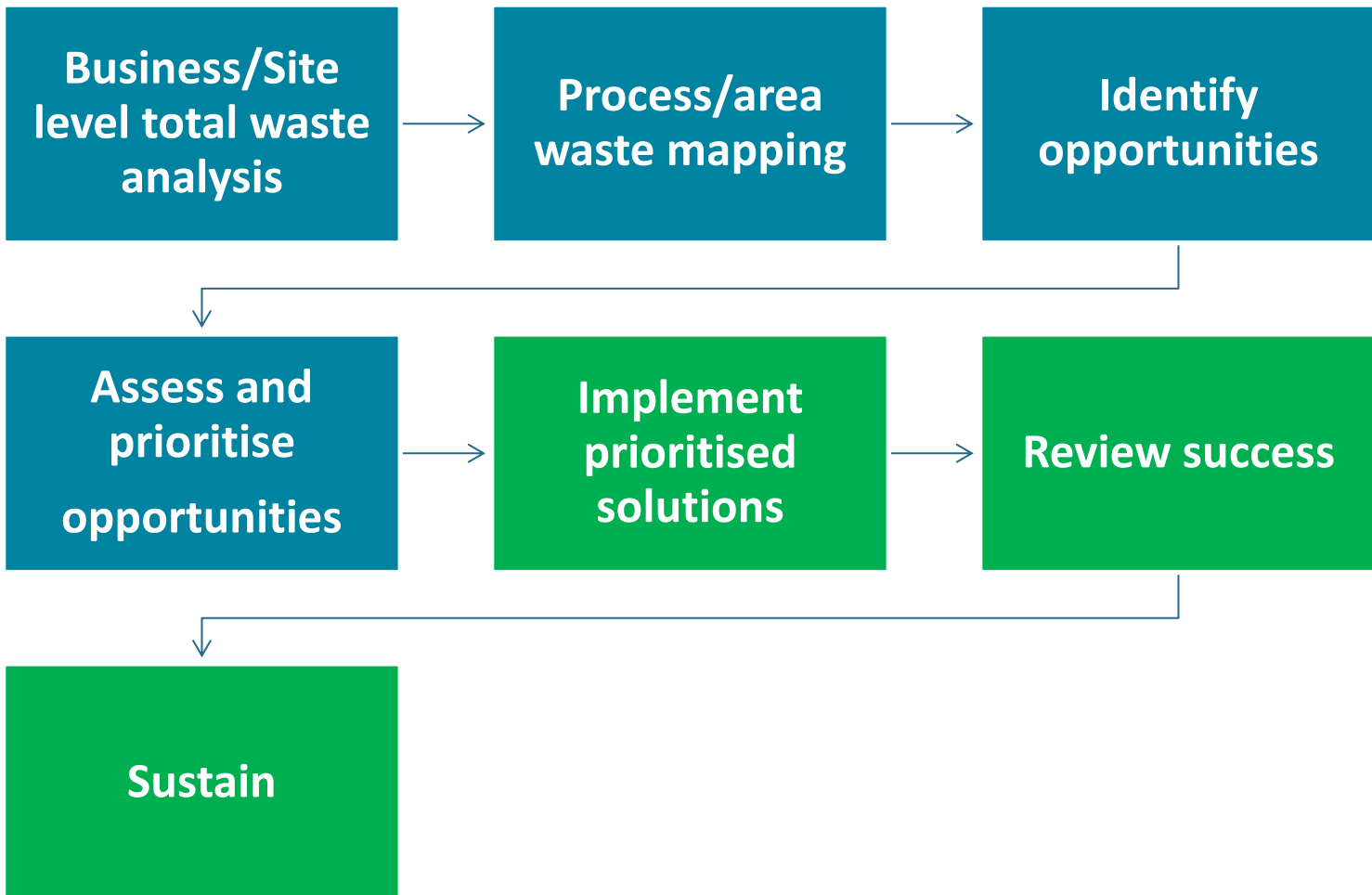


Cost benefit
calculator



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Where do we start?



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Summary

- Waste generation incurs significant and hidden costs – often taken for granted/overlooked
- Identify opportunities to reduce waste
- Develop viable business cases and implement
- Share success and lessons learnt
- Key enablers
 - Waste data (quantities & costs)
 - Leadership engagement, communications and teamwork
 - Tools can help to identify opportunities
 - (<http://www.rolls-royce.com/sustainability/better-business/suppliers/supplier-resources.aspx#waste>)
 - Identify large/key waste streams and costs and quick wins
 - **TALK ABOUT AND APPLY THE WASTE HIERARCHY**



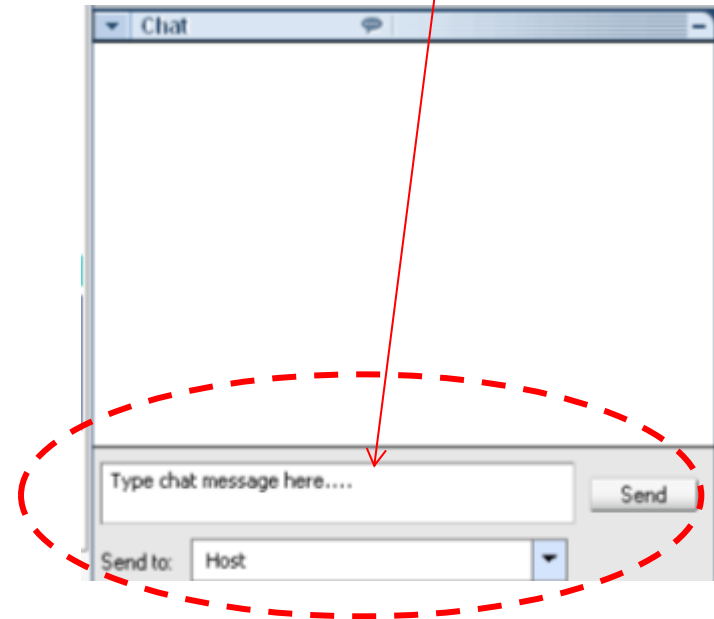
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Questions & Answers



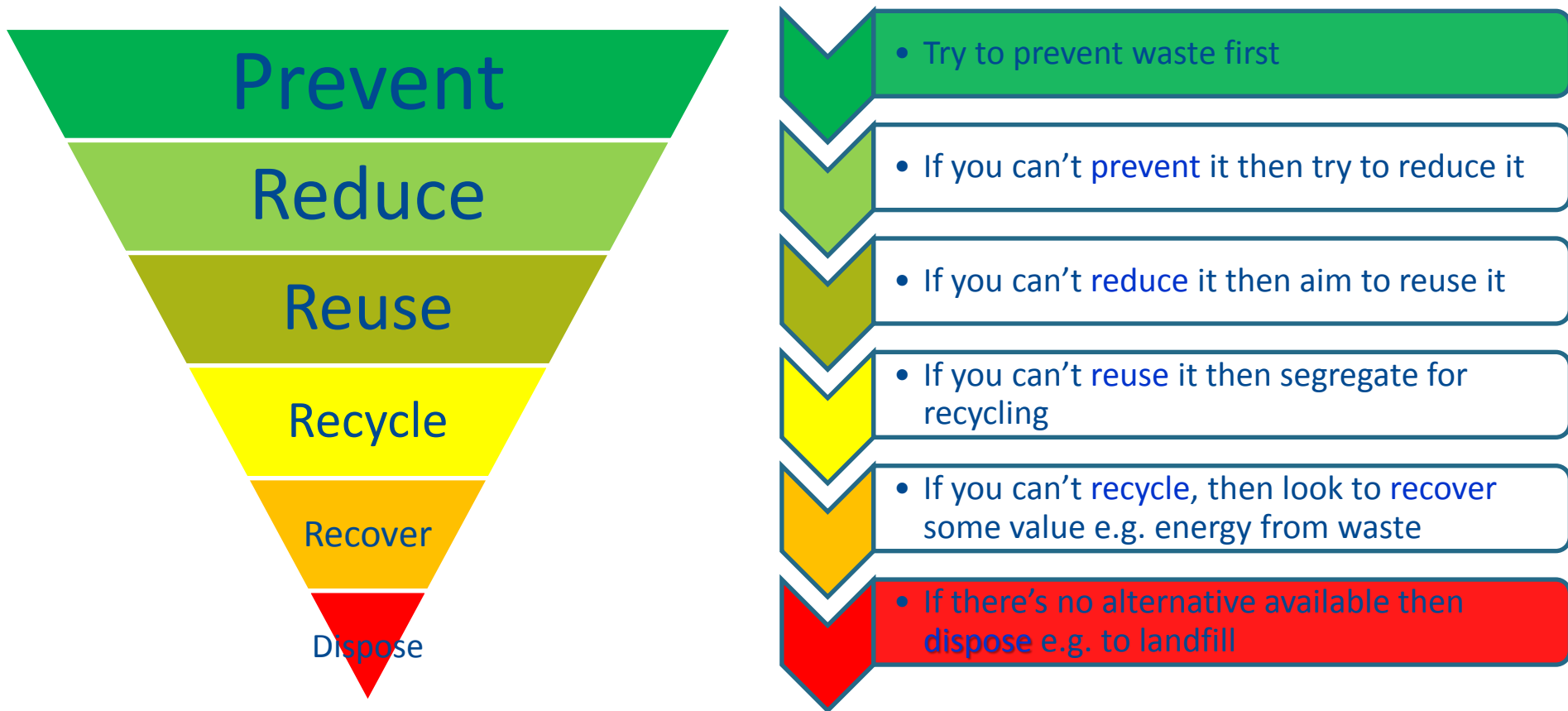
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To ask a question ...



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Making improvements – applying the Waste Hierarchy



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