

# ***FROM WASTE TO RESOURCES***

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Implementing Sustainable Resource  
Management in Your Business

June 2014

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## Acknowledgements

This report has been developed with the valued input of a number of parties. In particular IEMA, wishes to thank the following organisations and individuals for sharing case studies of their actions:

We wish to thank all parties involved in its development and, in-particular, the following organisations and individuals for sharing case studies of their actions in this business briefing:

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Rolls-Royce

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Read more about their work at [www.iema.net/rm](http://www.iema.net/rm)

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- Martin Baxter, Director of Policy & External Engagement, IEMA
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## Foreword

Businesses worldwide can achieve trillion dollar savings in little over a decade through effective resource management. Statistics like that make a very compelling business case for a wholesale shift in the way we source, use, re-use and dispose of materials. It will not only save money, it can make you money. And if that's not enough of a case, it contributes to saving the planet.

All businesses can benefit – financially and reputationally – from heeding the recommendations made in this report. Regardless of their starting point every single organisation has the opportunity to make small changes to achieve massive results. 84% of businesses already recognise that better resource management is their biggest opportunity to create value. That mass need help to make it a reality and the remaining 16% need convincing. I am confident that this report will do that job.

This report shows that skilled, experienced and qualified Environment & Sustainability Professionals can lead resource management which transforms the face of modern business. This in-depth report provides immersive detail for the professional, speaking their language and directing them towards not just best practice, but innovative new practices. The Business Briefing speaks directly to those at the decision-making end of business, giving them the scope and potential of what their Environment & Sustainability Professionals can achieve if empowered to make the right changes.

I'm very excited about the publication of this study which has surveyed multiple businesses facets to establish where many sectors and professions are currently reacting to resource challenges. It offers, for the first time, much-needed support, assistance and direction to catalyse action on resource management.

**Tim Balcon**

**CEO, IEMA**

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## Transform your business - From Waste to Resource - management

Sustainable resource management is a business critical issue; an under recognised opportunity for growth. Effective waste management is no longer sufficient; leading organisations are changing their thinking and turning this opportunity into advantage by exploring the potential. Sustainable resource management delivers clear business benefits:

- **Driving Competitive Advantage**
- **Reducing Business Risks**
- **Enabling Growth Opportunities**

And the rewards are substantial. Government research has identified that tens of billions of pounds of savings are available to business annually across the UK, many derived from no or low cost actions.

Progress is open to all organisations, no matter their: IEMA findings demonstrate that nearly two thirds of SMEs, employing skilled Environment & Sustainability professionals, are already saving over £5000 a year.

Achieving these benefits requires action to:

- **Generate savings through efficiency**
- **Mitigate price volatility while maintaining reliable supply**
- **Explore new business models within a clear strategic vision**

This report sets out the opportunities of sustainable resource management.

It demonstrates the value being unlocked by organisations that have tapped into the abilities of Environment & Sustainability professionals to catalyse progress across an organisation.

It recognises the need for strong leadership and strategic support from senior management.

It identifies the core systems, including procurement and supply-chain management, which must be engaged to enable the next step in your organisation's journey to sustainable resource management.

**It sets you a challenge...** To review your organisation's progress to date and identify the next steps on its journey to realising the benefits potential of sustainable resource management.

Complete IEMA's Resource Action Maturity Planner (RAMP) as the first step to improved organisational resource management: [www.iema.net/rmramp](http://www.iema.net/rmramp)

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This report provides an overview of the key elements of resource management, the response already being made by business and the types of action any organisation can take to progress their transition.

It is designed with business in mind, but aimed at Environment & Sustainability professionals whose roles enable them to catalyse organisational action to deliver real and rapid progress.

**Chapters 3, 4 and 5** present resource efficiency and effectiveness, security, and cycling. Each chapter sets out an introduction to the topic, evidence of existing trends from business, and advice on practical actions organisations can take to start, progress, or take a lead in this area.

**Chapters 6 and 7** provide information on wider business factors that need to be aligned to embed the transition to resource management in an organisation.

**Chapter 8** challenges organisations to take action, through the introduction of IEMA's Resource Action Maturity Planner (RAMP). It also summarises the reports key messages and outlines the support available on the Institute's online resource management hub ([www.iema.net/rm](http://www.iema.net/rm)).

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# CHALLENGE & OPPORTUNITY

## Why Resource Management?

The numbers speak for themselves.

£23 billion<sup>1</sup> a year is the reward available to UK organisations through low or no cost actions to manage resources more efficiently. Of which, 80% of these potential benefits will be gained by using raw materials more efficiently and minimising waste.

Defra's 2011 analysis<sup>2</sup> identified potential UK annual savings of £55-56bn when measures with a longer-term payback period are included.

Globally, an estimated trillion US dollar saving per annum is believed achievable by 2025<sup>3</sup> by moving towards a circular economy.<sup>4</sup>

**So how can we get there?** Firstly, a circular economy requires that all organisations must be engaged in the transition to resource management, to ensure they begin viewing wastes and unused/end-of-life products as viable raw materials. Secondly, organisations need to be engaged - their understanding of the risks and opportunities related to resource management, and how this translates into enhanced financial and sustainability performance, must be improved.

However, many organisations still remain focussed on managing waste, rather than recognising it is the consequence of an ineffective system. To truly create a more circular and sustainable economy, organisations need to follow the leaders in this field and transition to a mindset based around resource management.

After all, improving material resource management is good for the environment and business, enhancing the bottom line, reducing supply-chain risk, delivering efficiencies and protecting corporate reputation.

**Our report takes on the challenge with an intentional focus on material resources (raw materials, packaging and waste), the risks related to their use, and actions to improve their management.**

<sup>1</sup>. Defra & Oakdene Hollins (2011) <sup>2</sup>. IBID

<sup>3</sup>. Towards the circular economy – Volume 3: Accelerating the scale-up across global supply chains (Ellen MacArthur Foundation, 2014)

<sup>4</sup>. See Chapter 5, Box 5a for a definition of the circular economy

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# HOW DID WE GET HERE?

## The Transition to Resource Management

As we head towards 2030, a year that will define our global response to fundamental sustainability challenges, a series of unstoppable global trends will reshape the way organisations view resources:

- Substantial growth in demand for all resources, led by the growth in middle class consumers and rapid urbanisation, particularly in the Asia Pacific region (see [Box 2A](#)).
- Exceptional demand for key enabling materials to support the significant and ongoing expansion in technologically advanced products and services (eg. smart phones, renewable energy, hybrid and electric transport).
- Increasing costs of resource extraction and supply; as accessible high grade deposits are exhausted and extraction moves to more challenging locations with higher associated costs.
- Increasing constraints on production both within countries - where environmental factors (eg. competition for water) will limit production - and on the international market - where resource politics and trade restrictions already influence the flow of resources around the globe.

**Box 2A:****The resource management consequences of the growing global middle class****The Game Changer:****Significant growth in middle class consumers**

The proportion of the world's population identified as middle class consumers (US\$10-100/capita/day<sup>1</sup>) is predicted to more than double in just over 20 years, from **1.9 billion people in 2009** to an estimated **4.9 billion in 2030**.

**The Consequences for business:**

**- Increasing prices:** Demand for the basic resources from which goods are created and which services rely upon will continue to grow. This will put pressure on supply and lead to increasing commodity prices, unless supply of primary or recycled materials can keep pace.

**- Risks to supply:** The majority of this growth (85%) is projected to occur in Asia and will shift the centre of global middle class spending from Europe and the US (54% in 2009) to Asia (59% in 2030). This geographic shift has the potential to disrupt existing material supply chains, with the risk that resources become more difficult/costly to source.

1. OECD Development Centre, Working Paper 285 (Kharas, 2010)

The outcome of these game changing trends is that organisations will be exposed to increasing risks related to the materials they rely upon. From increasing costs and price volatility, through potential supply shortages and disruption of existing supply chains, to reputational risks (eg. conflict materials).

### The 20th Century Approach

1900-2000 saw a gradual fall in the relative cost of the major material resources used to support the global economy, facilitating global economic growth. The cost of disposing of the growing volumes of waste produced, which accompanied economic growth, also remained relatively low.

Increasing concern about the environmental consequence of low cost waste disposal (eg. landfill), led to the development of the waste hierarchy, where waste production is avoided in preference to lower level action, such as reducing and re-using material and energy recovery. However, despite increasing recycling rates in the latter decades, organisational management activities arguably remained focussed on what to do with waste, rather than how to avoid it.

Legislative action in the 1990s saw many governments<sup>5</sup> take action to correct market failures associated with waste disposal. This drove up the cost of landfill disposal, making waste treatment approaches (higher up the waste hierarchy) financially viable and providing organisations with greater impetus to avoid producing waste.

By the end of the century, the EU had enacted the Landfill Directive (1999/31/EC) providing a common basis for protecting the European environment from the negative effects of waste disposal to landfill.

### The 21st Century Response

The 1990s legislation had a significant effect on the way organisations approached waste management in the early 21st Century. Increasing waste disposal costs have driven many organisations to focus more time on waste management, which has generated significant investment in energy recovery, waste treatment and recycling facilities. While this has generated significant change and helped ensure some materials are reused within the system, the overall result has been that businesses focus on the management of waste.

However, these early decades have been increasingly dominated by a number of global trends in the demand and supply of resources, which will make recent changes in waste management appear small scale when compared to the response needed now.

5. In 1996, the UK introduced Landfill Tax, increasing the cost of disposing of each tonne of waste sent to landfill.

## 2. HOW DID WE GET HERE?

To respond to these increasing risks, organisations must evolve how they purchase and use materials, and how they perceive waste (/secondary materials).

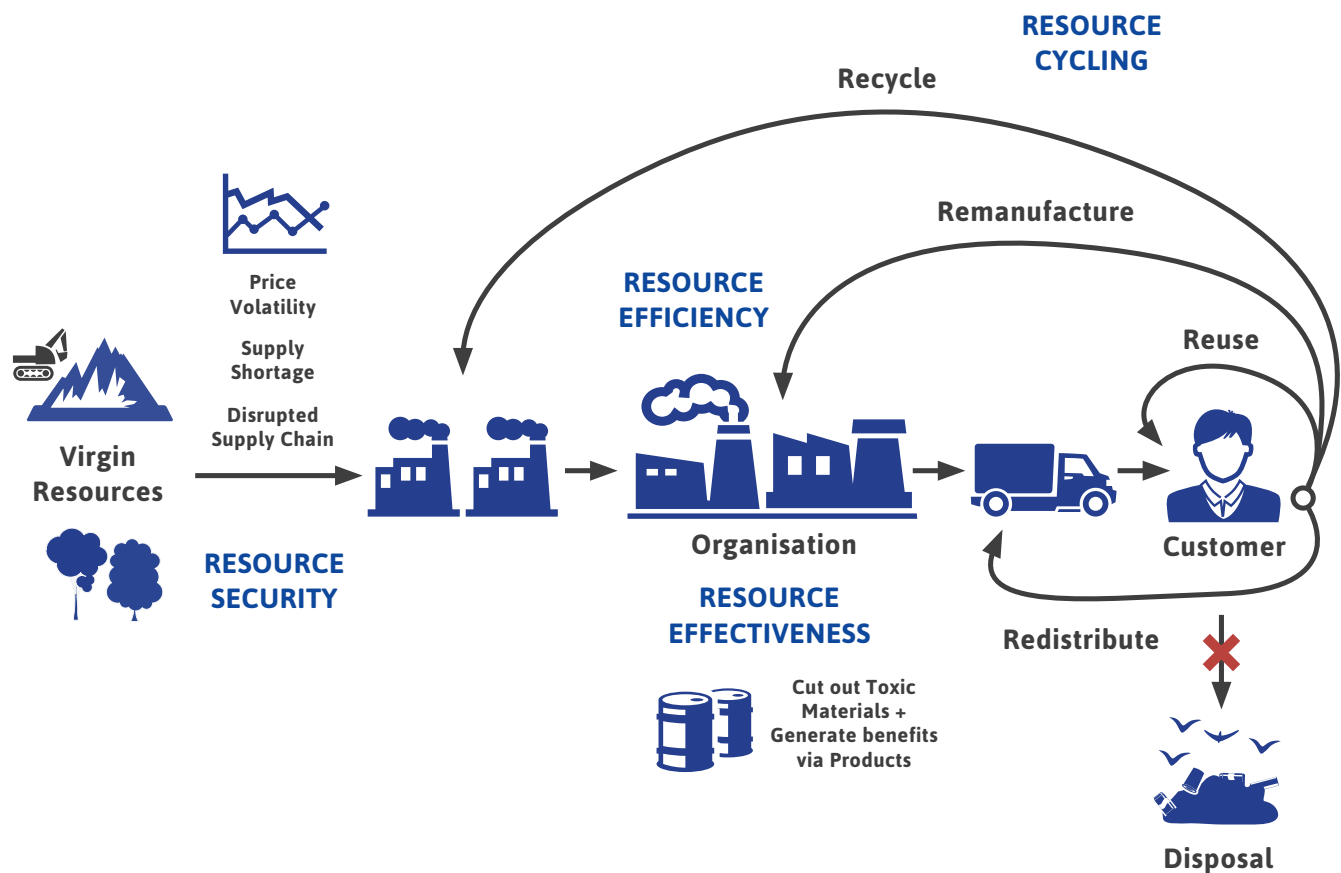
Firms need to change their approaches and develop integrated strategies that allow them to understand the flow of materials:

- into their organisation,
- within its systems,
- through its clients and on to the end user and
- how these can be brought back into productive use

In recent years, there has been an increasing focus on the need for action across the various aspects of resource management with many reports produced by Government, trade bodies, NGOs and business. Environment & Sustainability professionals recognise the need for change and also the significant opportunity it offers to business. In 2011, 84% of respondents (to IEMA's sustainable business practice survey) ranked better use of resources as the biggest opportunity for organisations to create value through sustainability.

To grasp this opportunity, organisations will be required to take action in three key areas:

1. Resource Efficiency and Effectiveness
2. Resource Security
3. Resource Cycling



# RESOURCE EFFICIENCY AND EFFECTIVENESS

Taking action to optimise the sustainable use of materials



## CONTEXT

AN INTRODUCTION TO ORGANISATIONAL  
RESOURCE EFFICIENCY & EFFECTIVENESS

What is resource efficiency and effectiveness? Resource efficiency is about maximising the use of materials with minimal waste production. Whereas resource effectiveness goes further in optimising the efficient use of resources across their lifecycle to minimise harm to the natural environment and society and increasingly generate sustainability benefits.

Organisations face challenges such as the need for research and development to phase out toxic materials. There are also opportunities, including enhancing financial and sustainability performance.

It is clear that companies can become more competitive through resource efficiency. Taking action can save significant amounts of money, streamline operations, enhance productivity, increase profitability and generate environmental benefits.

**Low cost resource efficiency actions make up 80% of the £23bn a year<sup>6</sup> potential saving available to UK business.**

Material resource efficiency has traditionally focussed on an organisation's activities at its own sites; moving materials up the waste hierarchy. This placed an emphasis on minimising waste disposal by preventing its production, reusing and recycling by-products, with any remaining material being sent for energy recovery, in preference to landfill.

However, taking such a [waste centric approach to resource efficiency prevents organisations from focussing on making the most efficient and effective use of resources](#). Today's businesses must [rebalance their actions from bottom-up actions, based on managing waste, to a more top-down resource stewardship approach](#). A resource led approach is based on reducing the intensity of an organisation's resource use ([see Box 3A](#)) and minimising any negative effects associated with their use from cradle to cradle ([see Chapter 5, Box 5B](#)). The approach should not only

drive improved performance within the organisation, but also contribute to improved resource efficiency and effectiveness of the system as a whole.

Resource effectiveness is based on the need to avoid negative environmental and social impacts that are related to the use of certain material resources (eg. encapsulating toxic materials in a product can limit their potential for reuse and recycling). Organisations adopting resource effective practices aim to use resources as efficiently as possible, while avoiding negative sustainability effects. The concepts have the same relationship as efficiency and effectiveness have in traditional business management models, with the optimal solution being achieved by organisations balancing resource efficiency benefits with resource effectiveness characteristics.

**Box 3A:**  
**Key metrics to understanding  
an organisation's material  
resource Intensity:**

- The total amount of material required across the lifecycle for a given unit of output.
- The ratio between virgin material and secondary (circular) materials used to deliver the same unit of output.

### **Box 3B:** **Unilever making products drive effective resource use in the value-chain**

Most of Unilever's water footprint is created by customer use of its laundry and skin products. One response it has taken is to develop a One Rinse product range for developing markets, where clothes washing is often done by hand.

The products ensure detergent residues are removed with a single bucket of rinsing water, rather than the three required for a traditional product.

This saves time, effort and money for the customer and allows twice as many clothes to be washed in the same amount of water as standard products.



Unilever

There is an increasing need for organisations to look beyond their own facilities and processes into their value chain, including their suppliers, clients and consumers (see: [Section 7.3](#)) to understand the whole life effects related their products and services.

The need to demonstrate action beyond the traditional 'factory gates' is fast becoming an essential component of an effective and credible organisational response to resource efficiency (See Box 3B).



## **EVIDENCE**

### **BUSINESS ACTION ON RESOURCE EFFICIENCY**

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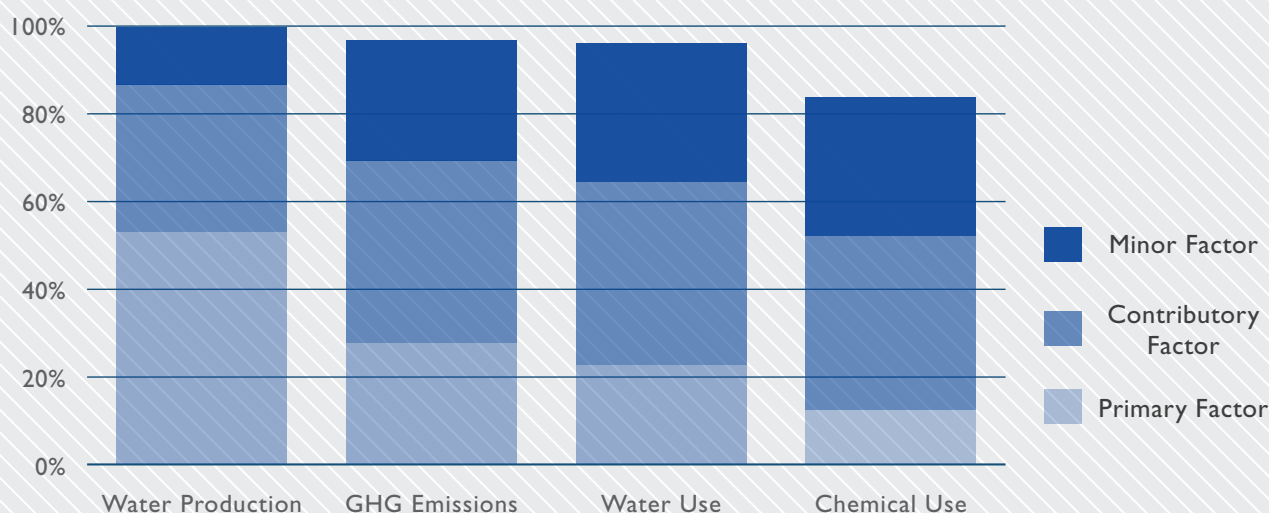
Organisations that grasp the opportunities provided through resource efficiency are rewarded with direct cost savings associated with reduced purchase and waste management costs, and additional business benefits, such as:

- Improved sustainability performance (see Box 3C);
- Improved resilience to price volatility (see Chapter 4 - Resource Security)
- Improved staff engagement (see Chapter 6 - Getting the Business Onboard).

Box 3C demonstrates that environment and sustainability professionals recognise that enhancing an organisation's resource management activities has a multiplier effect, contributing to improvements in wider sustainability performance.

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**Box 3C:****Material resource efficiency drives wider environmental performance improvement****The contribution of Resource Management to improving wider environmental performance**

IEMA's research indicates that organisations employing skilled and qualified Environment & Sustainability professionals are already achieving significant benefits by taking action on resource efficiency.

Over 500 respondents indicated that their company had achieved the following financial benefits:

- Very large<sup>7</sup> companies: 19% of respondents indicated their company saved over £1,000,000 per year.
- Large companies: over 20% of companies saved £100,000 per year.
- SMEs: 63% saved at least £5,000 per year, with nearly 70% of those saving over £10,000 per year.

Combining these savings infers that over £108m in savings have been achieved by the organisations these professionals work with.

This provides corroborative evidence to support broader, economy-wide studies of the potential for resource efficiency savings.

For example: Defra's 2011 analysis<sup>8</sup> of the UK market identified the potential for annual savings of £55-56bn from resource efficiency actions, including measures with a longer-term payback period.

Defra identified that over 80% of such savings derive from smarter raw material use and waste minimisation activities and offer a payback period of less than a year.

Taking action on resource efficiency can improve competitiveness and enhance profitability - providing a clear case for organisations to commit to continually improvement in managing their materials.

7. The following definition was used to aggregate company size Very Large = >1000 employees, Large = 250 to 1000 employees, SME = 1 to 249 employees (SME definition based on European Commission's work found here <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:EN:PDF>)

8. IBID

## Starting at the End: Zero Waste to Landfill

Government advice from WRAP indicates that resource efficiency is based on the application of the waste hierarchy.

IEMA's research has found that most (78%) organisations are taking such action through a zero waste to landfill approach (see Graph 3D). A further 12% of respondents indicated their organisation is actively considering the adoption of this approach.

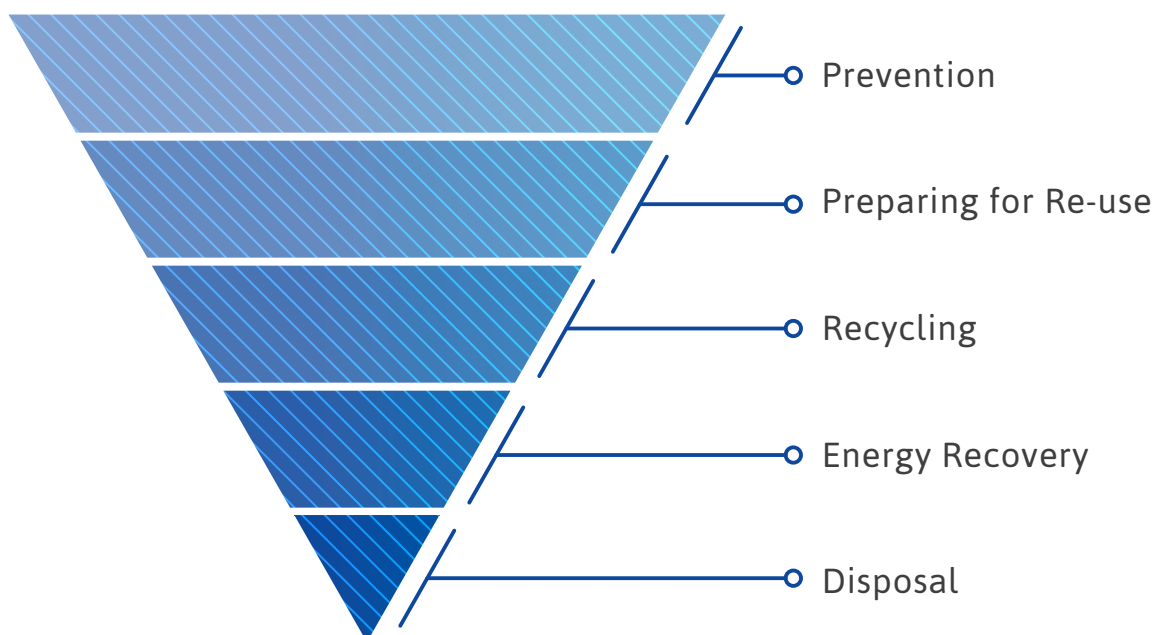
IEMA's evidence also demonstrates that for environmentally aware organisations zero waste to landfill has become the common bottom line for resource efficiency activity.

IEMA research workshops found that a zero waste to landfill approach commonly leads to contracting changes with an organisation's waste management service provider. The most common outcomes resulting from a zero waste to landfill approach are presented in Graph 3E. The principal result is an improvement in an organisation's recycling rate (54% of respondents); however, encouragingly, 28% indicated it influenced them to focus on avoiding waste production. Adopting a zero waste to landfill approach is an initial step to improving environmental performance. However, for the majority of organisations, related to this research, it has not proved transformational in moving their approach to resource management.

While improvement in recycling rates is important, they are only a first step for organisations that are interested in reaping the significant benefits available through resource efficiency.

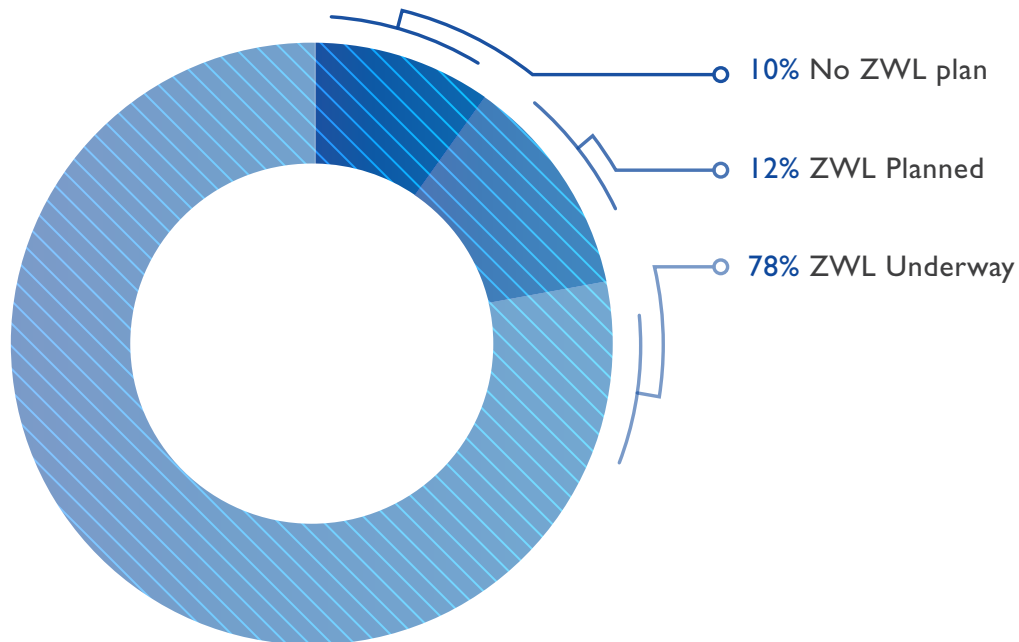
Furthermore, placing too great an emphasis on improving recycling rates may lead to missed opportunities to improve resource effectiveness and reduce resource intensity (Box 3A). In terms of the transition to resource management, *improving an organisation's recycling rates will limit resource efficiency benefits unless combined with actions to reduce the intensity of resource inputs and waste arising from its activities.*

## The Waste Hierarchy

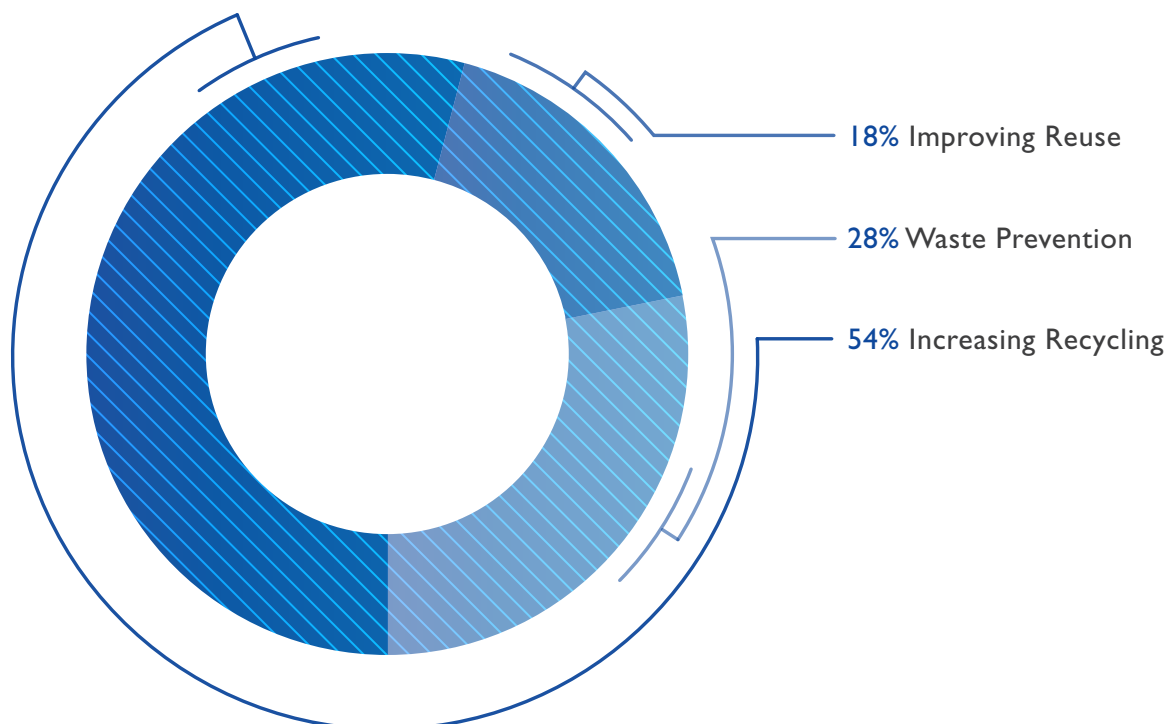


**Graph 3D**

**Zero waste to landfill (ZWL) the bottom line in an organisation's journey to resource efficiency**

**Graph 3E**

**Zero waste to landfill's main influence on organisational resource efficiency**



## Starting at the beginning: A Resource Led Approach

A series of IEMA workshops in July 2013 aimed to identify the common factors that enabled 28% of respondents to use the zero waste to landfill approach to drive a resource-led waste avoidance response. Environment & Sustainability professionals identified

three elements that have helped them form the essential foundations for the success their organisations achieved:

- CEO / senior management buy in (see Section 6.1)
- Working to engage everyone in the process (see Section 6.3)
- Effective data and reporting (see Section 7.1).

In addition, IEMA identified two key actions that enabled organisations to achieve more:

### 1. Ensuring an organisation takes ownership of its resource effectiveness and efficiency actions.

There is a risk that organisations that adopt a zero waste to landfill approach become overly reliant on their waste management contractor to deliver performance improvements. Organisations that are truly committed to taking action to improve resource management must ensure they have their own objectives and internal commitments in place. By placing greater reliance on their own actions, (Based on a Resource Hierarchy - see; [www.iema.net/rm117](http://www.iema.net/rm117)) organisations can ensure they consider the effective use of resources, as well as using resources efficiently. This involves developing an action plan, assigning departmental and individual responsibilities, creating a focus and positive culture around a common goal across the organisation (see Chapter 6).

### 2. Put time and effort into renewing contracted waste/resource management services.

The key here is to develop an understanding of what the organisation wants to achieve within resource efficiency and how the contract for these services can help to support this. The workshops indicated that organisations need to put more consideration into the type, specificity, frequency and quality of data to be reported back through such contracts.

IEMA members highlighted that data provided by waste management contractors was sometimes generic, based only on the combined output of materials recycling facilities where their organisation's material is taken to by the contractor. Such generic data can be misleading, as it is unlikely to represent the waste of any single firm. That means any action taken in response is likely to be sub-optimal when compared to action based on organisationally specific data.

Chapter 6 provides further advice on data and reporting for effective resource management.

*On average, the true cost of wasted materials<sup>9</sup> is about ten times the cost of disposal*

WRAP<sup>10</sup>

<sup>9</sup> The true cost of wasted materials also includes unseen costs: lost materials, energy costs, liabilities and risks, and lost labour / productivity.<sup>10</sup> Business Resource Efficiency Guide: Resource Efficiency for Managers (WRAP, 2013)

**Paper usage reduced from 29 to 16 tonnes a year predominantly by working out printing requirements, double siding and employee engagement. Alongside this, the repairs division achieved a 99.25% recycling rate for the waste it produced.**

Andrew Fletcher, AIEMA, ESP Ltd

Read more about Andrew's work at [www.iema.net/rm192](http://www.iema.net/rm192)



## RESPONCE

TAKING RESOURCE EFFICIENCY  
ACTION IN YOUR ORGANISATION

IEMA research shows that adopting a zero waste to landfill approach to organisational waste management is now standard practice among companies that employ skilled and qualified Environmental & Sustainability professionals. While this does help to drive resource efficiency performance, the research has highlighted that internal action must be the key driver to achieve higher value outcomes.



## GET STARTED

FOR ORGANISATIONS NEW  
TO ACTION IN THIS AREA

The initial step for organisations that want to improve their resource efficiency is to determine the reason why waste material arises across the organisation and tracing these materials back through the organisation to their original purchase and related supplier.

Such a systemic approach will provide opportunities to engage different departments and colleagues that are involved in the use of each material – providing opportunities to identify savings in material usage. Such an approach can identify other users of the same material across

the organisation. This knowledge can highlight opportunities to redistribute unused materials between departments or enable the reuse of off cuts in separate processes. As a result, the total volume of material purchased by an organisation can be reduced.



### RAMP IT UP FOR ORGANISATIONS ALREADY ENGAGED IN THIS AREA

For organisations that already have a proactive understanding of the way the materials they purchase become waste, the next step is to focus on reducing the resource intensity (Box 3A) of the materials they rely upon.

Organisations place an increasing focus on understanding and reducing the amount of material used per unit of output and increasing the proportion of secondary material used as an input.

This stage involves investing in research and development to explore and exploit further opportunities for material reuse and designing processes to optimise the efficient use of materials. At this stage, organisations have moved beyond a singular focus on the proportion of waste materials being sent to different recycling, treatment and disposal facilities.



### LEAD THE WAY FOR ORGANISATIONS LEADING MORE SUBSTANTIVE CHANGE IN THIS AREA

Organisations that are already driving changes in this area are those that are looking at the whole life environmental and sustainability implications of the materials they use across their value chain. Such **resource effectiveness activity** often requires deeper thinking into the approach an organisation takes to the design and development of products and services. Actions often include working in partnership with clients, suppliers and wider stakeholders and can require more holistic approaches to encourage behavioural change often in the consumer of products/services.

The ultimate goal is to deliver products and services with the minimal use of resources, which are derived from systems that avoid generating negative environmental or societal consequences and also provide a net positive contribution to the wider value chain.

*Is your organisation  
ready to take further action  
on resource efficiency?*

.....  
Complete IEMA's  
Resource Action Maturity Planner  
(RAMP) as the first step to improved  
organisational resource management:  
[www.iema.net/rmramp](http://www.iema.net/rmramp)

# RESOURCE SECURITY

## Maintaining a reliable supply of key materials



### CONTEXT

#### AN INTRODUCTION TO ORGANISATIONAL RESOURCE SECURITY

The global economy has enabled raw materials, products and services to be easily traded across borders and has resulted in many organisations, including SMEs, having diverse global supply chains.

All organisations are aware of the price they pay for the materials they use, feel the effect of changing prices and struggle to source materials from their normal suppliers on occasions. However, until recently, few organisations, except the very large and those using chemicals subject to authorisation under REACH,<sup>11</sup> would have considered access to the key materials they rely on, as a key business risk.

Since 2000, an increasing array of commodities have seen significant price volatility and constraints in short-term supply, from oil and steel to rare earth minerals (essential to modern communication, electronics and renewable technology). Alongside this, there has been increasing focus on responsible sourcing of materials (eg. palm oil and conflict materials) to avoid businesses contributing to negative environmental and social effects associated with their extraction or production.

More recently studies have begun to identify that more common materials may be at risks of future global shortfalls in supply (eg. a potential global timber shortfall of up to 30% by 2030).<sup>12</sup>

While a well managed forest can supply timber over the medium-term, as a naturally regenerative raw material, there are genuine concerns that increasing global demand (see Box 2A) could outstrip supply. The consequence would include: increases in the price of timber, paper and related materials; disruption to existing supply chains; and the potential for accelerated deforestation.

***The effective use of resources, energy and social capital is a pre-requisite for long-term economic success***

Technology Strategy Board<sup>13</sup>

<sup>11</sup> EU Registration, Evaluation, Authorisation and Restriction of Chemicals legislation

<sup>12</sup> Net Positive – the start of the journey, report for 2012/13 (Kingfisher, 2013) [www.iema.net/rm209](http://www.iema.net/rm209)

<sup>13</sup> Delivery Plan 2013 - 14, page 28 (Technology Strategy Board, 2013) [www.iema.net/rm290](http://www.iema.net/rm290)

There is a clear need to raise awareness among businesses of the threat posed by resource security. Where organisations identify themselves as being at risk, they must recognise that there are actions they can take to prepare for and manage these risks. An organisation's specific resource risks, and the drivers

behind these, will be unique to its circumstances. However, there are sufficient common factors of risk, both within and between sectors, to allow common features to be identified presenting the opportunity for all businesses to enhance their resource security resilience.



## EVIDENCE BUSINESS ACTION ON RESOURCE SECURITY

The need to raise business awareness of the risks of resource security and scarcity has been increasingly recognised by global governments and wider bodies. In March 2012, the UK Government launched its Resource Security Action Plan (RSAP) jointly authored by the Departments for Business, Innovation and Skills (BIS) and Environment, Food and Rural Affairs (Defra).

The document identified key groups of materials most immediately associated with resource risk (eg. iron ore, aggregates, cobalt, rare earth oxides) and sectors of the economy most exposed to these risks (eg. construction, automotive, electronics & IT hardware, chemicals). It went on to establish a series of actions to co-ordinate Government, research and business initiatives to raise awareness and manage resource security risks.

IEMA worked with Government to develop the RSAP, in particular highlighting the need for organisations to have access to the strategic, cross cutting, environment and sustainability skills needed to help identify, plan, manage and respond to resource risks.

While Government action is valuable, there is a limit to what individual nations can do when organisations, and their supply chains, are increasingly global in nature. As such, [organisations must recognise the need to take responsibility to understand their own resource risks and the actions they need to take in response.](#)

To help drive business to take such action, IEMA helped found the Material Security Working Group in the UK. This group is chaired by EEF (the manufacturer's organisation)

and brings together professional bodies, materials trade associations, NGOs and other interested parties to promote positive action in response to increasing resource security risks to individual business, business sectors and Government.



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*Resources are the life blood of manufacturing. Without a clear view of supply risks and an active and ambitious strategy to manage those risks, **businesses will be increasingly vulnerable to price volatility, supply chain disruption and business continuity risks.***

Susanne Baker,  
AIEMA, EEF and Chair of Materials Security Working Group  
**Read more about Susanne's work at [www.iema.net/rm111](http://www.iema.net/rm111)**

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HEMA's research has found that many Environmental & Sustainability professionals are already aware of key resource security risks faced by their organisation.

69% of respondents indicated their organisation had identified key materials that were vulnerable to price spikes or supply constraints. 28.7% identified metals as a key material that was a resource risk for their organisation and 18.6% indicated chemicals that they rely upon have resource risks associated with them. The research workshops identified a range of approaches used by Environment & Sustainability professionals to help establish whether their organisation had resource security risks.

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The majority of these began with an initial review to identify the key materials the organisation relied upon, both internally and in its supply chain, to produce its goods or services; followed by an assessment as to whether any of these materials were considered to be at risk.

Based on the research, IEMA identified two key statements that organisations should consider to evaluate their preparedness for resource security risks, as set out in [Box 4A](#).

**Box 4A:*****Determining whether an organisation is prepared for resource security***

Organisations that are prepared for current and future resource security risks are able to firmly agree with one of the following statements:

1. The organisation's on-going success is not reliant on any key materials remaining available or affordable (key materials = those required to deliver its products/services).

2. The organisation is aware of all relevant resource security risks and has effective systems in place to ensure key materials remain accessible and affordable

Organisations unable to agree with either statement should review whether their current activities are sufficiently developed to recognise and respond to resource security risks.

HEMA's research found a less positive picture in relation to organisational responses to resource risks. 18.9% of respondents were aware of action being taken by their organisation to manage the resource security risks that had been identified. Those that were aware of actions identified a significant range of responses in three clear areas:

- Research risks and strategic planning
- Supply chain initiatives
- Internal systems improvements

The most common organisational response identified was implementing a supply chain related response with strong links to procurement teams (see Section 7.2 and 7.3).

Approaches included strengthening supplier relations through long-term contracts, hedging to manage price volatility, supplier diversification, stockpiling, and greater forward planning in ordering.

For improving internal systems, common responses fell into two categories:

- Resource management, including: reuse, closed-loop systems and resource efficiency measures (see Chapter 3).
- Resource replacement, including: substitution for other materials, replacing virgin materials with recycled raw materials, self-production of specific key chemicals and planned cessation of use.

The latter category was regularly linked with the need for organisational research and development activity to ensure that processes would continue to deliver the required quality of output.

The research has found that initiatives related to improving business resilience are often closely associated with those needed to improve resource efficiency and effectiveness and resource cycling (Chapters 3 and 5). Further to this, IEMA found evidence of positive actions organisations are already taking to deliver innovative solutions that manage risk, enhance business opportunities and improve sustainability performance, as demonstrated in Box 4B.

# 28.7%

identified metals as a key material that was a **resource risk** for their organisation and **18.6% indicated chemicals** that they rely upon have resource risks associated with them.

## Box 4B:

### **Rolls-Royce Revert programme - a response to resource security**

Rolls-Royce has developed relationships across its operations, resource and waste management service providers and raw material suppliers. Contracts between all parties ensures that the off-cuts, turnings and unused materials related to certain metals and alloys are returned from Rolls-Royce sites back to the supplier, via the resource and waste management service provider.

By returning an agreed amount of this used, high quality material, Rolls-Royce receives a discount on new material purchases from the same supplier. As such, Rolls-Royce has effectively become part of its own raw materials supply chain, ensuring that it avoids treating key materials as waste within its systems.

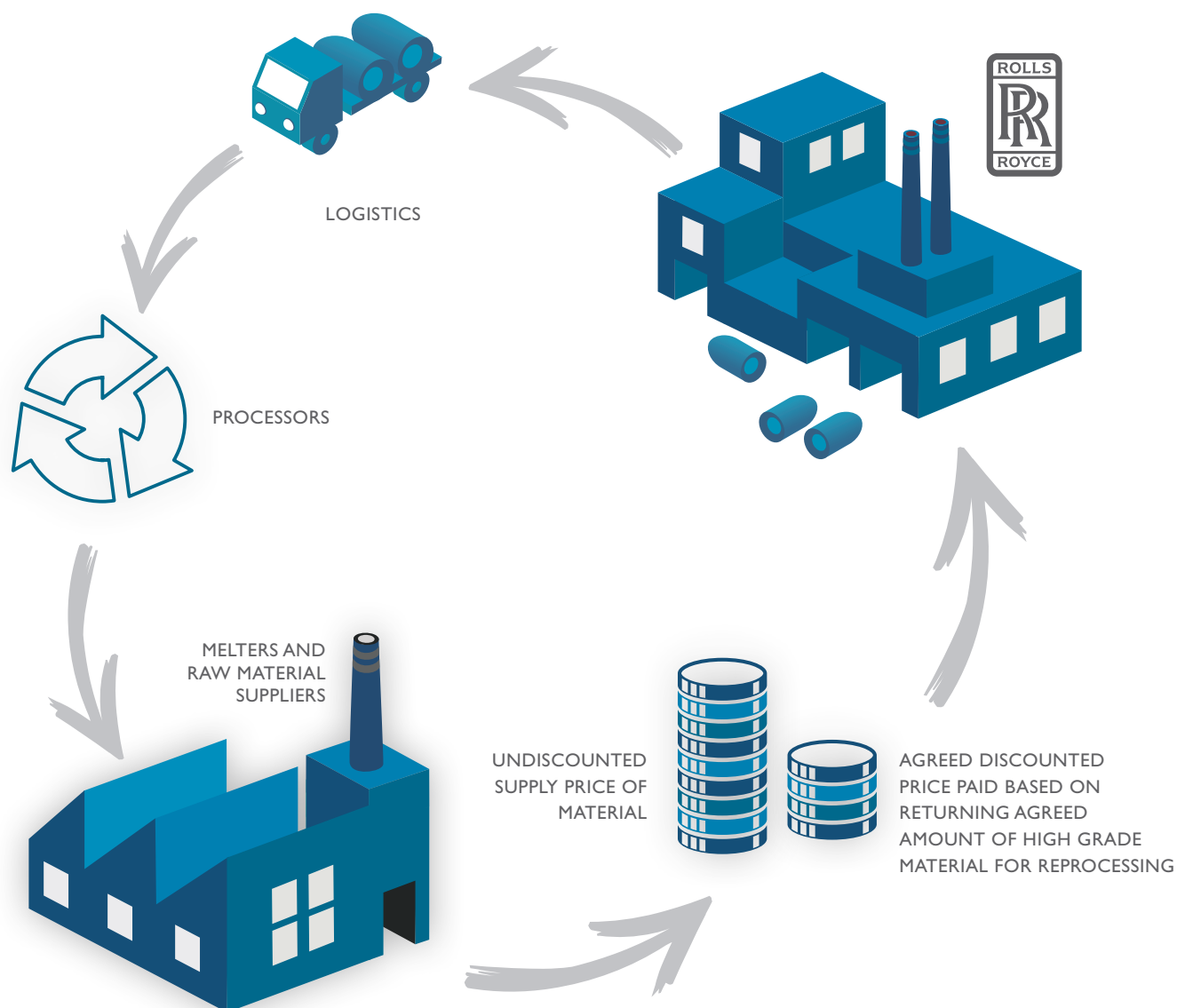
The result is that: Key materials are retained within the aerospace industry (i.e. sectoral closed loop);

- lower grade materials can be more effectively cycled through evaluation, grouping into common materials / grade and where practicable 'upgraded' by combining them with alloying materials to allow future use;
- this arrangement benefits both the supplier and Rolls-Royce as the returned material is of higher quality than traditional recyclate, resulting in discounts that are greater than would otherwise be obtain from selling the used material on the open market
- service providers are allowed to sell less strategic material on open market to ensure non-essential materials are reused in other sectors.

[www.iema.net/rm216](http://www.iema.net/rm216)



# Rolls-Royce



Action should be taken to **ensure the organisation maintains a clear understanding of its exposure to resource security risks**, which are dynamic in their nature.



## RESPONSE

### TAKING RESOURCE SECURITY ACTION IN YOUR ORGANISATION



## GET STARTED

### FOR ORGANISATIONS NEW TO ACTION IN THIS AREA

The initial step for any organisation wanting to review its resource security resilience is to develop an effective understanding of the materials it relies upon. Such a review should not be limited to the materials used on its own sites, but also those that are key to the delivery of its products and services in its supply-chain. For example, water for irrigation is a key material input in farming, which then supplies raw materials to the food and drink industry – so, for instance, a crisp manufacturer is at risk from future supply constraints from the farming sector.

Conducting a resource security resilience review requires work to identify the materials used across the organisation and how important each is to its operations. Once this list of key materials has been produced it should be reviewed against publicly available lists of materials considered to be insecure or at risk (eg. the list contained in Table 1 of the resource security action plan<sup>14</sup>).

The UK Government has also funded the development of a Resource Dashboard<sup>15</sup>, which will produce a standardised methodology for identifying and evaluating resource security risks in any product. The project raises the prospect of the development of a public database designed to provide readily accessible and consistent information on resource security for many different materials.

The key risks identified through the resilience review should be included in the corporate risk register and action should be taken to ensure the organisation maintains a clear understanding of its exposure to resource security risks, which are dynamic in their nature.

Organisations should therefore ensure that their Environment & Sustainability teams track developments in the understanding of resource security risk and those materials considered to be insecure or at risk.

Furthermore, when developing new products/services or when existing lines are substantially redesigned, resource security issues should be considered in the design phase when determining the most appropriate materials to be used in production and delivery.

<sup>14</sup>. Resource Security Action Plan (BIS and Defra, 2012) Table 1: [www.iema.net/rm275](http://www.iema.net/rm275)  
<sup>15</sup>. ESKTN Resource Dashboard project: [www.iema.net/rm234](http://www.iema.net/rm234)

To improve understanding, **questions must be asked about the organisation's supply chain, the opportunities to use substitute materials and the potential to reduce reliance on at risk material through minimisation.**



**RAMP IT UP**  
FOR ORGANISATIONS ALREADY  
ENGAGED IN THIS AREA

For an organisation to effectively manage resource security, it must develop an understanding of its ability to adapt to the resource risks it is exposed to. To improve understanding, questions must be asked about the organisation's supply chain, the opportunities to use substitute materials and the potential to reduce reliance on at risk material through minimisation. Beyond this, an organisation should look to improve the way they it reuses and recycles to ensure valuable material is not being lost.

#### 1. Review the supply of current 'at risk' materials:

- How well does the organisation understand the drivers of the availability of each material?
- Does the material have diversity of supply, or is it limited to a single source?
- Does the organisation, or its supply chain, have sufficient reserves to avoid the need to purchase the material during periods of high price volatility?

#### 2. Consider whether alternative materials can be used:

- Are substitute materials readily available?
- Are any resource risks associated with the substitutes identified?
- Can organisational systems easily adapt to use substitute materials?
- How would substitution affect efficiency of the organisation's processes and the quality of the output?

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Organisations should also review internal processes with the aim of changing the way key materials are managed after their primary usage. Initial activities regularly include improving segregation and sorting of materials to enhance reuse and recycling either internally or in the value-chain (see [Box 4B](#)).

These actions have strong links with activity related to resource efficiency ([Chapter 3](#)) and resource cycling ([Chapter 5](#)), and involve reviewing and optimising existing systems to drive improved performance.

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To be successful, Environment & Sustainability professionals will need to work with colleagues to ensure new approaches to managing key materials are owned by the most relevant parts of the organisation, see [Section 6.2](#) and [6.3](#).



## LEAD THE WAY

FOR ORGANISATIONS LEADING MORE  
SUBSTANTIVE CHANGE IN THIS AREA

Advanced steps in organisational resource security involve taking a broader range of actions to manage resource risk and include exploring the potential for new business opportunities. Three key action areas include:

*The ability to trace, understand and verify **the ethical and environmental sourcing of materials** is increasingly important*

### 1. Act to manage reputational risks associated with key materials:

Organisations increasingly need to understand the reputational risks associated with materials they rely upon. The use of materials, in particular primary materials generated by extraction of virgin supplies, can have significant environmental and social impacts related to them. A large range of issues can be associated with the virgin materials an organisation relies upon. **The ability to trace, understand and verify the ethical and environmental sourcing of materials is increasingly important.** For example: issues related to the use of conflict materials are an increasing priority after the USA's 2010 Dodd-Frank Act and the European Commission's proposals for voluntary self-certification, in March 2014.

### 2. Develop networks to build understanding and co-ordinate action:

It is important for organisations to understand wider trends in demand both within their sector, geographic region and globally. Working the organisation's value-chain to improve its combined understanding of resource risks across the system. Where relevant, they need to explore the development of networks that act together to improve knowledge and co-ordinate action. Having access to resilient networks of supply will help protect the business and its partners.

### 3. Explore opportunities to improve the value of materials:

Act to improve the functional quality of materials no longer needed for their primary usage. This can lead to opportunities to retain resources in the supply-chain – by redistributing materials and improving the potential for the reuse or remanufacture of components. Alongside this, they should explore the benefits of enhancing the quality of the materials being sent for recycling, such action can improve the value of the materials recycled and may increase opportunities to sell current 'waste – for recycling' as secondary material on the open market or via a materials brokerage company. However, organisations must comply with legal duties in the handling and transfer of waste.



**Is your organisation  
ready to take further action  
on resource security?**

.....  
Complete **IEMA's Resource Action  
Maturity Planner (RAMP)** the first  
step to improved organisational  
resource management  
[www.iema.net/rmramp](http://www.iema.net/rmramp)

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# RESOURCE CYCLING

## Managing material flows so they replenish supply



### CONTEXT

#### AN INTRODUCTION TO ORGANISATIONAL RESOURCE CYCLING

Resource cycling is about moving business thinking beyond the current system of linear material use, within which virgin materials are extracted, used once and disposed of. On a large scale, this concept is increasingly termed the circular economy (see [Box 5A](#)) and is associated with numerous other concepts each with their own focus: eco-efficiency, cradle-to-cradle, industrial ecology, closed-loop, industrial symbiosis.

While understanding terms and techniques is important for those directly engaged in promoting action, the abundance of terminology adds complexity, which can deter businesses eager to implement initiatives to improve their stewardship of resources. Essentially, resource cycling is about organisations understanding that all the materials they utilise and dispose of can be part of a broad market for commodities.

### Box 5A: What is the Circular Economy?

An approach to material use that aims to replace the wasteful linear model of resource use with a regenerative model that is deliberately designed to continuously cycle the materials already in use within the system. Materials are divided into two groups - biological (eg. food) and technical (eg. manufactured components). The cycle of biological materials is generally considered to operate in a relatively rapid cycle and has strong links to cycling materials through natural processes (eg. composting). Whereas technical materials are generally designed to cycle in a high quality state for longer periods (eg. through maintenance, reuse and redistribution of goods) before their components are eventually remanufactured, or, where this is not possible, recycled as base raw material inputs to the system (eg. plastics).

The circular economy is designed to minimise future reliance on the use of virgin technical material inputs (eg. metal ores and fossil fuels) and thus aims to avoid the negative environmental and social effects often associated with extracting these raw materials. It also aims to avoid inefficiencies that are currently generated through the loss of materials from the system as a result of disposing of waste to landfill or burning recyclable materials for energy recovery.

Find out more about the circular economy, cradle-to-cradle and closed loop systems at IEMA's resource management hub ([www.iema.net/rm-further](http://www.iema.net/rm-further)).

By also **collecting recycling** from our customers, when delivering orders, **we have created opportunities to re-engineer the value-chain to better support closed-loops;** this helps to differentiate our business in a competitive market.

Toby Robins,  
AIEMA, Wiles Greenworld  
Read more about Toby's work at [www.iema.net/rm171](http://www.iema.net/rm171)

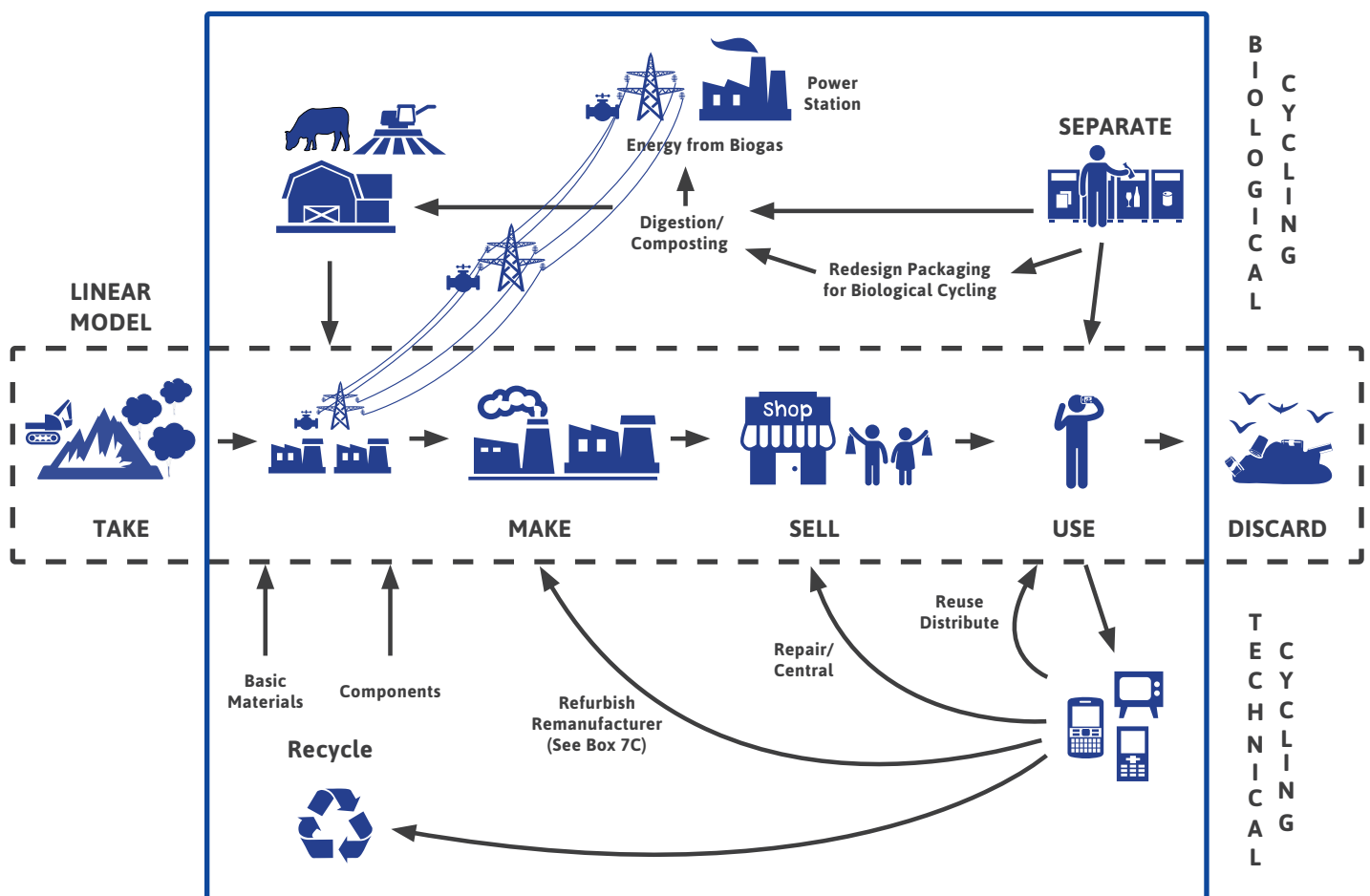


Through effective stewardship, organisations can maximise the potential that their products are able to be reused or redistributed at the end of their initial use phase. Beyond this, organisations can take action to deliver products that are capable of being returned for remanufacture or easily recycled, at the end of their useful life, so as to ensure the materials within them are reinvested into the economy.

In this context, the continued use of toxic materials in the production and delivery of goods and services requires particular attention. The use of toxic materials can create specific difficulties to the reuse of products and recycling of materials, and can therefore act to slow the development of closed loop systems. As such, organisations should consider undertaking research and development that aims to eventually

phase out toxic materials to ensure that the technical and biological 'nutrients' essential to a circular economy can continue to effectively and efficiently cycle within the system (Box 5A).

### CIRCULAR ECONOMY MODEL





## EVIDENCE

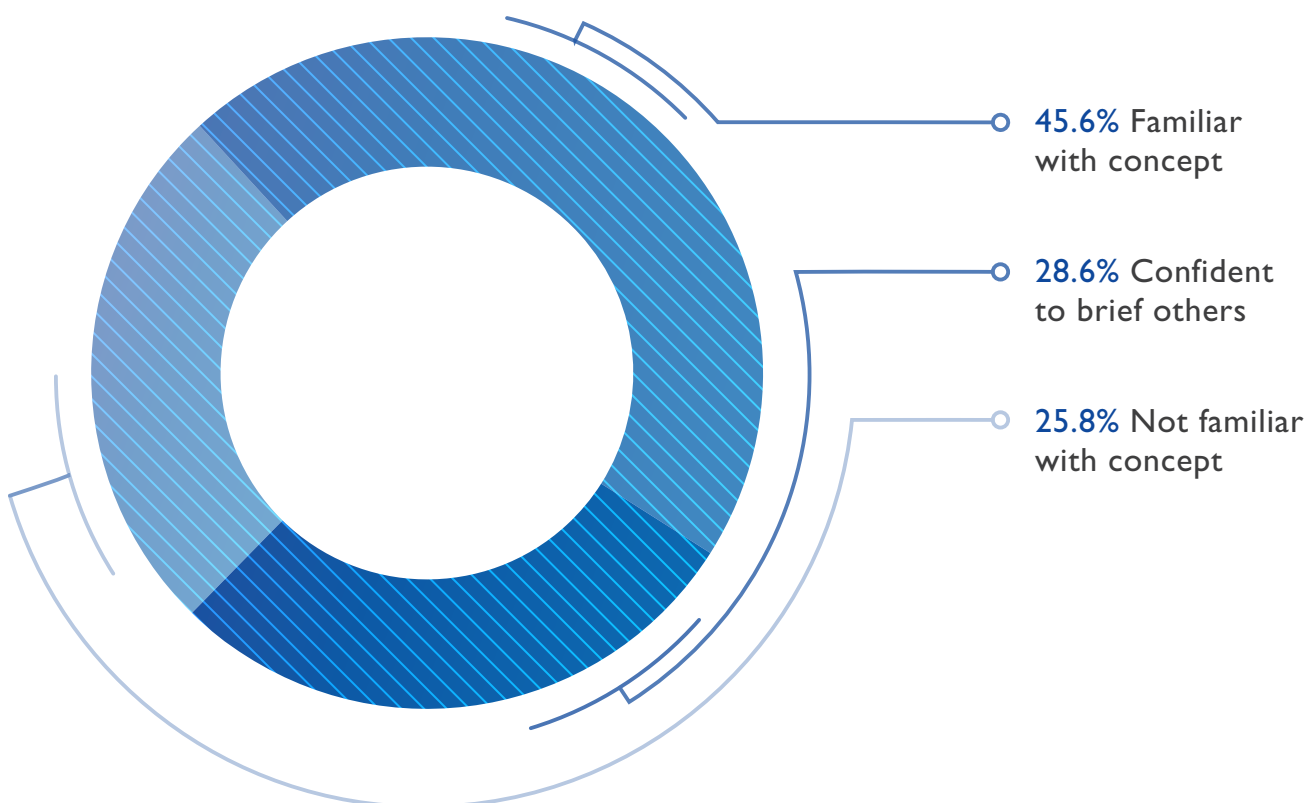
### BUSINESS ACTION ON RESOURCE CYCLING

The research found that 28.6% of survey respondents (**Graph 5B**) indicated they could effectively brief others on the concepts and benefits of a circular economy.

This finding demonstrates that Environment & Sustainability professionals are well placed to act as change agents to increase knowledge of the circular economy within organisations (see Section 6.2).

#### Graph 5B

**Understanding of the circular economy amongst environment and sustainability professionals.**



Beyond this leading group, there is a greater proportion of Environment & Sustainability professionals (45.6%) that understand the concepts of the circular economy, but need more confidence to take on the role of briefing colleagues in the wider business. Other respondents (25.8%) indicated they were not familiar with the circular economy concept, showing that further training and awareness-raising is needed with this core group of professionals.

Given IEMA's findings relate to organisations already employing Environment & Sustainability professionals, much work is still

needed to ensure the majority of businesses are engaging in this transition. The circular economy and its concepts are the fundamentals of effective resource cycling. Environmental & Sustainability professionals should act to enhance the recognition and understanding of this area among their colleagues and across the organisations they work with. However, there is also a clear need for the profession to strengthen its confidence to ensure it is well placed to speak with authority in this area and help change the business thinking needed to accelerate this essential aspect of effective resource management (see Section 6.2).

***The circular economy and its concepts are the fundamentals of effective resource cycling.***

Multiple research projects have been published that highlight the significant potential financial advantages to economies and organisations from enhanced resource cycling and the circular economy.

In summer 2013, Accenture and M&S estimated the circular economy to be worth £15-18bn a year<sup>16</sup> to the UK economy, achieved through:

- Closed-loop supply chains;
- Extending asset life;
- Promoting re-use, remanufacturing and repairing products
- Adapting design to allow for the effective and efficient disassembly of products that cannot be salvaged

Alongside the policy reports, substantive research effort is being undertaken across the global academic community. **The European Union has committed £80Bn to fund European research to 2020**, part of which will support its Roadmap to a Resource Efficient Europe initiative. A significant amount of world leading research is already being undertaken in the UK, including the EPSRC funded Centre for Industrial Sustainability (Box 5C).

***The UK economy is only 19% Circular***

*Circular Economy Taskforce, 2013<sup>17</sup>*

<sup>16</sup>. Fortune Favours the Brave (Marks & Spencer and Accenture, 2013) see: [www.iema.net/rm273](http://www.iema.net/rm273)

<sup>17</sup>. Resource Resilient UK (Green Alliance and the Circular Economy Taskforce, 2013) see: [www.iema.net/rm262](http://www.iema.net/rm262)

### Box 5C: UK Centre for Industrial Sustainability

The Centre combines key UK Universities and leading manufacturing businesses to research into the three core areas of management practice, technology and policy that will drive UK industry to sustainable and resilient future: See [www.iema.net/rm241](http://www.iema.net/rm241)

- **Resource Efficient Operations**

- How to make current products in a low-carbon resource efficient manner - for example:

“Why environmental performance varies between factories?”

- **Sustainable Manufacturing Technologies**

- How to transform our factories:

“What new technologies are required for end of life disassembly?”

- **Systems Innovation**

- The conditions and capabilities required for the transformation of industrial systems - for example:

“How business models can innovate in circular economies?”

Wider initiatives, such as the UK's Circular Economy Taskforce and the work of the Ellen MacArthur Foundation, are also driving significant change. Evidence related to the work of leading businesses in this field is also becoming increasingly available (see Box 5D). The aim of all this activity is to share the experience and learning of these trailblazers to identify the core elements that will enable a larger wave of organisations to take substantive action to improve the cycling of resources.

### Box 5D: Bold ambitions driving innovation

In 2012, Kingfisher Group set out its ambition to have 1 000 products with closed loop credentials available to consumers by 2020. Working with leaders in the field, they developed a closed loop calculator made up of 10 criteria and a clear scoring system.

By early 2014, this process had allowed them to identify that 90 existing products have credible closed loop elements.

See [www.iema.net/rm252](http://www.iema.net/rm252)

**Kingfisher**

Leading companies in this area have **embraced the circular economy** within their **long-term business strategy** and have **substantive support** from senior figures across their business.



## RESPONSE

TAKING RESOURCE CYCLING  
ACTION IN YOUR ORGANISATION



## GET STARTED

FOR ORGANISATIONS NEW  
TO ACTION IN THIS AREA

It is clear that the initial step for organisations is to ensure they have a sound understanding of the concepts behind resource cycling and the potential opportunities it offers. A great way to develop understanding and gain inspiration is to review case studies of the actions being taken by organisations leading the way on resource cycling. These are particularly useful where they relate to organisations or activities in similar sectors, or are from organisations in the wider value-chain. Alongside this, organisations

need to understand their current performance on resource cycling, which involves reviewing internal systems related to waste and resource related data collection; procurement; and stakeholder engagement.

Chapter 7 provides advice on initial action in each of these areas.

The outcome of these activities will highlight numerous opportunities to take action to improve an organisation's contribution to resource cycling.





### RAMP IT UP FOR ORGANISATIONS ALREADY ENGAGED IN THIS AREA

The next step is to start taking action to improve performance in this area. These initial actions can be internal (eg. identifying opportunities to enhance the recyclability of a product or its component parts) or within the supply-chain (eg. by specifying minimum recycled content in key raw materials purchased). Alongside this, improving knowledge related to the use of key materials across the organisation will often identify opportunities to reuse or redistribute materials between processes and teams (see Section 6.3).

It should be noted that organisations can run into multiple barriers when attempting to take such actions, which hamper progress. A common issue is whether the use of recycled raw materials will affect the quality and safety requirements of the product (eg. material safety specifications related to medical equipment and baby products). A further potential barrier in this area is waste legislation - so organisations must ensure that action taken to cycle resources continues to comply with relevant regulatory requirements.



### LEAD THE WAY FOR ORGANISATIONS LEADING MORE SUBSTANTIVE CHANGE IN THIS AREA

Leading companies in this area have embraced the circular economy within their long-term business strategy and have substantive support from senior figures across their business. As a result, they are increasingly identifying profoundly ambitious targets and initiatives that actively seek to disrupt the traditional approach their organisation has taken to resource management.

Activities in this area include exploring product design (eg. to enable remanufacture or rapid disassembly), and creating closed loop systems. A further key area for innovation is around the development of new business models (Box 5E), including servicisation, reverse logistics, buy-back / deposit schemes and social enterprises.

**Box 5E:****New business model archetypes to enabling resource cycling.****1. Maximise material and energy efficiency**

(eg. lean manufacturing, Factor 4/Factor 10)

**2. Create value from 'waste'**

(eg. industrial symbiosis parks such as Kalundborg; cradle-to-cradle)

**3. Substitute with renewables**

and natural processes

(eg. novel solar-based business models)

**4. Deliver functionality, rather than ownership**

(eg. servicisation based models, such as Zipcar)

**5. Adopt a stewardship role**

(eg. sustainable sourcing, full transparency such as Puma's EP&L)

**6. Encourage sufficiency**

(eg. frugal business models, second hand, durability)

**7. Re-purpose the business for society/environment**

(eg. social enterprises, benefit / b-corporations)

**8. Develop scale-up solutions**

(eg. collaborative models)

Source: Centre for Industrial Manufacturing, available in an open access article: [www.iema.net/rm280](http://www.iema.net/rm280)

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# GET THE BUSINESS ONBOARD

## Practical Steps

IEMA's research identified that progressing to resource led thinking requires colleagues across an organisation to be engaged.

Of course, the need to get key groups of staff and systems working effectively are the usual preconditions for delivering effective change management in any organisation.

However, the IEMA research identified three groups as playing a core role in enabling the transition.

The first is the organisation's leadership, particularly the CEO, but also the wider directors or senior management team. This group play an essential role in ensuring resource thinking becomes embedded in the company's ethos and strategy.

The second is the organisation's environmental and sustainability professionals who, through their knowledge and cross-cutting roles have the potential to act as change agents catalysing action to ensure the businesses systems adapt to meet the new strategy.

The final group is the rest of the business, who need to be fully engaged and incentivised. This is to ensure that those teams and individuals whose activities change to improve resource management feel ownership over the new approaches to ensure their success.

## 6.1 Make it Strategic

To realise resource management's potential to improve performance, manifest opportunities and manage risk requires a change in thinking across an organisation. Such strategic change is only achievable with the support of the organisation's top levels of management. That's why recognising the strategic importance of the transition from waste to resource led thinking is such a vital element of building competitive advantage, business resilience and increasingly, reputation management.

IEMA's research indicates that recognition and support from the top of an organisation is a primary driver in enabling business to treat their waste as a resource and a key to removing barriers that contribute to unnecessary resource use. After cost savings, professionals identified CEO support and the establishment of a strong vision as key internal drivers. Over 90% of respondents indicated such actions are at least a contributory factor, with nearly half of those indicating they act as a principal driver (See Box 6A).

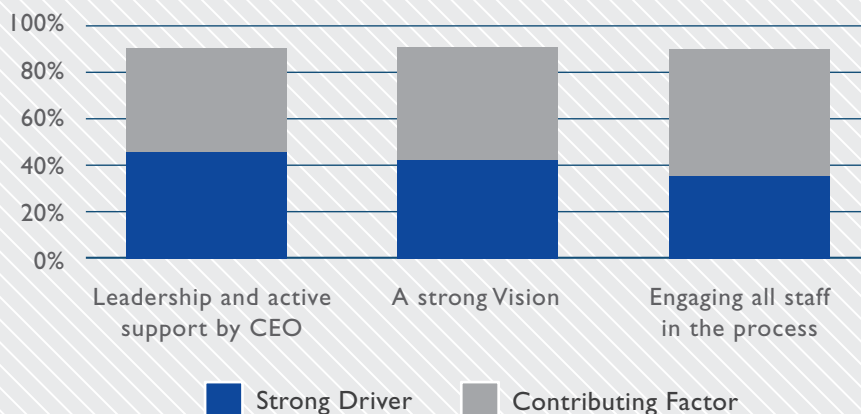
When it came to barriers, the same need for a change in strategic business thinking was evident, with the a lack of perceived benefit and limited support from the board / senior management identified as two of the top three barriers (See Box 6D).

The call from professionals is clear: organisations that want to compete in the globalised market cannot continue to treat resource management as an operational matter. They must be proactive by ensuring resource-led thinking is part of their business strategy and provide support to deliver this.

### Box 6A:

#### The key internal drivers for improved resource management

**Key internal factors helping organisations avoid unnecessary resource use and consider waste as a resource**



**We see closed loop innovation as a major business opportunity. By opening up new materials streams and designing out waste we can help to cushion our business from price volatility, to enter new markets and build better relationships with customers and suppliers.**

Becky Coffin, IEMA,  
Kingfisher (Net Positive)

Read more about Becky's work at [www.iema.net/rm125](http://www.iema.net/rm125)

The number of organisations that have truly embraced resource management as a core component of their business strategy is relatively limited, but the potential for growth is significant.

Kingfisher is a prime example of a business that has recognised the need to strategically look at its approach to resource management. Ian Cheshire, Kingfisher's Group Chief Executive, has established a clear vision within its Net Positive initiative - We would like to see a world in which creating and using products wastes nothing.<sup>18</sup>

The leading work of major companies is both innovative and ambitious. But for such approaches are to become the future norm, there are steps an organisation must follow to establish resource management within its strategic approach.

By dividing resource management into the three clear themes: efficiency & effectiveness, security and cycling (Chapters 3, 4 and 5), IEMA has set a clear framework but further action is needed as follows:

Understanding strategic resource risks faced by the organisation and its value chain (in particular suppliers and clients). Where vulnerabilities are identified these should be included, as appropriate, in the company's risk register and actions established to improve business resilience (see Chapter 4: Resource Security). This work may involve engaging key stakeholders, to discuss resource risks and understand global trends (e.g. demonstrating products are free from conflict materials<sup>19</sup>).

Beyond this, IEMA's research has found that there is still limited action on longer-term planning to manage issues related to resource use, waste management and resource security. When planning resource use (77%) and waste management (81%) four out of five respondents indicated their organisation focuses on a short-term horizon of three years, or less (See Box 6B). Only one in twenty respondents indicated that their organisation takes a long-term view beyond 10 years.

<sup>18</sup>. Kingfisher 2013: The Business Opportunity of Closed Loop Innovation

<sup>19</sup>. The United States 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act

### Box 6B: Planning ahead for Resource Management

	Waste Management	Resources Use	Resources Security
<b>Short Term</b> (0 - 3yrs)	81%	77%	69%
<b>Medium Term</b> (4 - 10yrs)	13%	17%	20%
<b>Longer Term</b> (>10yrs)	6%	6%	11%

The findings become a little more positive in relation to managing resource security; where more than one in ten look to the long-term (>10 years); however, 69% remain focussed only on the short-term. These results indicate that most organisations are still operating reactively to resource management issues, perhaps dominated by managing regulatory compliance, rather than addressing strategic resources risks or proactively pursuing opportunities.

Perhaps most concerning is that the approach to forward planning for resource management appears relatively static, with Box 6B's results broadly unchanged from the findings of IEMA's 2011 survey on Sustainable Business Practice.

However, there is cause for optimism, as the 2011 research found that organisations already take a longer-term view on some strategic sustainability issues. For example: IEMA found 50% of organisation's looked beyond a three year horizon when planning for climate change, with one in five looking beyond 10 years. These results demonstrate that organisations already have the capacity to take a strategic view.

IEMA members described initiatives that give senior managers/directors an advocacy role related to a key resource management issue. By challenging senior figures to take responsibility for championing a resource across the business, an element of healthy competition often emerges.

Such competition can drive substantial progress as well as helping identify previously unseen resource opportunities. Taking a cross-functional approach helps ensure that responsibility for action on resource issues does not fall between operational functions.



## GET STARTED

ACTIONS FOR ORGANISATIONS  
NEW TO THIS AREA

The first step to enable action is to work across the organisation to identify evidence of how resources already influence existing strategic business issues. To do this effectively requires building an understanding of an organisation's existing knowledge and actions related to resource efficiency, security and cycling; this can be achieved by following the advice on chapters 3, 4 & 5 and through the use of IEMA's Resource Action Maturity Planner (RAMP - see Chapter 8).

The aim of this process is to determine the maturity of an organisation's response to resource management. These findings can then be presented to senior management to make the case for actions that will move the business towards a proactive approach.

*Where is your company  
on its journey to making  
resource management a  
strategic business issue?*

.....  
Complete IEMA's Resource  
Action Maturity Planner (RAMP)  
as the first step to improved  
organisational resource management  
[www.iema.net/rmramp](http://www.iema.net/rmramp)

*Previously my role was about efficiency and cost savings; now it is about **developing and bringing to market new business models, products and services**, through this work I help my company drive green growth*

Mike Robey, AIEMA,  
WRAP

**Read more about Mike's work at [www.iema.net/rm107](http://www.iema.net/rm107)**

## 6.2 Use Change Agents

IEMA's research has found that the initial actions required to begin the transition to resource management can often be driven by a small number of staff, or even a single individual. Such personnel often have cross-cutting roles in their organisation allowing them to see waste and resources issues across the company. This provides them with the opportunity to enable action within and between different parts of an organisation.

To initiate wider changes, there is a need for a compelling business case that clearly demonstrates the benefits of improved resource management. Individuals in cross-cutting roles are well placed to enable no and low cost activities (with payback

of a year or less) that demonstrate cost, time, resource use savings and sustainability benefits. By reporting and communicating the success of such initiatives, the case for developing a wider plan of resource management improvements can be established.

Environmental management and sustainability roles are cross-cutting, providing the professionals who deliver them with an understanding of resource management performance across their organisation. For example: professionals whose primary role is environmental management have ten additional areas of responsibility on average<sup>20</sup>, which include environmental regulation (75%), waste management (72%), auditing/verification (69%) and environment & sustainability training (57%).

Environmental & Sustainability professionals regularly act as change agents within their organisations, working with colleagues to develop and mainstream initiatives that improve performance and deliver business benefits (see: [www.iema.net/rm146](http://www.iema.net/rm146)).

They have the skills and knowledge to help catalyse the transition to resource management (Box 6C).

<sup>20</sup> Environment and sustainability professionals salary survey (IEMA, 2013)



**Box 6C:****Core competencies to catalyse resource management**

- 
1. Understand Environmental & Sustainability issues from global to local and from short to long-term
  2. Collect, analyse and report data effectively
  3. Communicate a compelling case for action across different parts of a business
  4. Provide leadership that positively influences the culture of individuals and the organisation
  5. Apply core environmental and sustainability tools, including: environmental management systems, life cycle thinking and sustainability reporting
- 

For further information about mapping organisational environment and sustainability skills visit [www.iema.net/skills](http://www.iema.net/skills) and see how

IEMA's Skills Map links the above competencies into professional development.

Beyond this, IEMA identified that substantive change is often linked to the application of systems thinking. By reviewing systems and ensuring an organisation's processes consider managing resource efficiency, security and cycling, new ideas and opportunities will emerge that improve the performance of current and future business models, products and services.

Three key systems that must be enhanced to deliver the transition to are presented in Chapter 7.

While an environmental manager or corporate sustainability team can provide the impetus for change, they cannot change an organisation's systems alone. This makes the need to engage the business (see 6.3, below) vital for progress. Such work involves ensuring that resource management related activities become owned by different parts of the organisation.



## GET STARTED

ACTIONS FOR ORGANISATIONS  
NEW TO THIS AREA

A common first step is to recognise the need to track resource management initiatives in a collective manner to assess their cumulative performance. Two thirds of respondents indicated that this action was best built into existing environmental management systems to provide a clear and centralised mechanism for reporting progress across the business.

Chapter 3 identified that resource management measures often generate wider environmental performance improvements (see Box3C).

By linking resource management initiatives into the duties of existing environment and sustainability personnel, organisations gain a better understanding of the combined environmental and financial performance benefits achieved.

However, approaches to resource management in terms of technology, products, services and business models and the role of other professionals are rapidly developing. As such, organisations must ensure that their Environmental & Sustainability

professionals keep up-to-date with developments and the wider field.

### Where is your company on its journey to making best use of its change agents for improved resource management?

Complete IEMA's Resource Action Maturity Planner (RAMP) as the first step in improved organisation resource management: [www.iema.net/rmramp](http://www.iema.net/rmramp)

#### Box 6D:

#### **Environmental and sustainability professionals perspective on the key internal drivers & barriers to the adoption of resource management in organisations**

##### Drivers

1. Clear CEO support for action
2. Strong vision of action needed
3. Effective staff engagement

##### Barriers

1. Competing priorities
2. Lack of perceived business benefit of action
3. Lack of Board / senior management support

### 6.3 Engage the Business

Resource management has multiple business benefits from direct financial savings, through environmental and sustainability performance improvements, to reputational enhancement. While sizeable improvements can be made by individuals, broad scale actions to deliver profound changes in resource management that maximise business benefits cannot be realised without effective engagement across the organisation.

It is compelling that IEMA's research identified that the majority of the key drivers, which enable the adoption of resource management activities, and the barriers, which hold back progress, directly relate to engaging staff (see Box 6D).

It is clear from the key drivers listed in Box 6D that there is a need for strong engagement and support on resource management from the most senior levels of an organisation. By combining this leadership with effective staff engagement (the third key driver), there is significant potential to create the momentum needed to drive rapid progress in improved resource management performance. There are increasing examples of businesses that have taken this approach and established bold targets to manifest rapid change in their resource management. See Box 6E

To establish such targets, an organisation must have an effective understanding of the data related to the resources it uses and the waste produced (see Chapter 7).

IEMA's research identified that only a third of organisations that report waste data actively feedback on either their successes in preventing waste or the savings generated through effective actions. Without significant improvements in the collection and communication of such information, it is likely that organisations, which lack strong CEO leadership in this area, will struggle to overcome the barriers identified in Box 6D.

Highlighting enhanced environmental performance can play a key role in helping to engage staff to improve resource management. However, as only a third of organisations regularly report cost savings achieved through their existing activities, it is perhaps unsurprising that CEOs and boards do not provide greater support.

As such, there is a clear need to ensure financial savings and performance benefits related to resource management actions are captured and reported. This is particularly the case as 97.5% of survey respondents indicated that greater evidence of savings would act as a strong contributory factor to taking future actions.

In the short-term, it is clear that a core aspect of engaging the wider business on resource management will involve establishing and communicating the cost savings and bottom line benefits to different teams and the whole business. However, while environmental and sustainability messages may not always prove the best way to engage all parts of a business, IEMA members should not be ignored and often act as strong motivators.

#### Box 6E Case study: Philips Tonnes of savings

Royal Philips (the leading technology company, based in The Netherlands) aims to double the collection and recycling of its end-of-life products and has established a target of using 3500 tonnes of recycled plastic in its products by end of 2015, from a starting point of just 35 tonnes in 2010. By establishing this bold short-term target, Philips has driven the need to implement radical changes in the approach to purchasing materials within its supply chain across the business<sup>21</sup>.

# PHILIPS

21. [www.iema.net/rm246](http://www.iema.net/rm246)



## GET STARTED

ACTIONS FOR ORGANISATIONS  
NEW TO THIS AREA

A good first step in engaging the business is to identify people in the organisation who are already interested in improving resource management performance. Once identified, they can deliver a defined resource management action, which is likely to rapidly achieve demonstrable business benefits comparable to the cost savings data (Chapter 3).

The findings of this initial improvement must be analysed, reported and communicated to the wider business to establish wider future action to facilitate continuous improvement. The results of such studies will need to be communicated in different ways to engage different parts of the business.

**Where is your company on its journey to engaging the business on resource management?** Complete IEMA's Resource Action Maturity Planner (RAMP) as the first step in improved organisation resource management: [www.iema.net/rmramp](http://www.iema.net/rmramp)

***Don't underestimate people's willingness to engage actively and eagerly in projects where they see no direct benefit for themselves, but do so in the spirit of environmental sustainability.***

*Bob Cox, IEMA Affiliate, Siemens*

**Read more about Bob's work at [www.iema.net/rm156](http://www.iema.net/rm156)**



# GETTING THE SYSTEMS RIGHT

## Practical Steps

IEMA's research identified three key organisational systems to prioritise in transitioning a business to resource management. These systems must be aligned with the company's strategic approach to resources and the ambitions of its engaged workforce to ensure the success. These systems are:

- **Data and Reporting**
- **Procurement**
- **External Engagement**

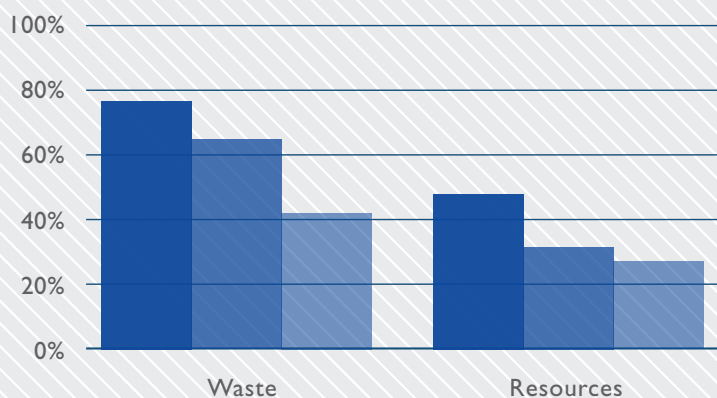
### 7.1 Gather Effective Data and Report it

For organisations to effectively manage the materials used and wastes produced through their processes, they must first have access to meaningful data. However, simply collecting the data is not enough. It needs to be reported, in a way that is understandable, across the business to those who can implement an appropriate response.

IEMA's research explored the extent to which Environmental & Sustainability professionals are linked into their organisation's data and reporting ([Box 7A](#)). Given the key role these professionals play ([see 6.2](#)) in catalysing actions to help transition from waste to resource management, their ability to access, analyse and communicate is vital.

Box 7A indicates that Environmental & Sustainability professionals are far more likely to be aware of their organisations waste management data than the equivalent for resource management.

**Box 7A:**  
**Organisational Reporting on Waste and Resource Management**



- Report on Waste/Resources
- Annual Consumption/Production
- Comparison to a base year/target

*The current focus on **waste data** and reporting poses **significant risks** to an organisation's **ability to efficiently transition to resource management**.*

#### **The research workshops indicated two main reasons:**

The first relates to environmental management systems (EMS), which often focus on compliance issues. This often results in the more heavily regulated waste side of an organisation's environmental performance forming a key component of the aspects register within an EMS. As a consequence, more organisations report waste data, through their EMS, than raw material use.

The second is that current organisational practices mean that data on the materials an organisation purchases is not frequently available to those in cross cutting roles, such as Environmental & Sustainability professionals. It is clear that many organisations could identify substantial opportunities for savings by improving shared data on raw material and resource use. Emphasis should be placed on ensuring such data and information is communicated to environmental and sustainability personnel to enable collaborative action that optimises organisational systems for resource management.

The current focus on waste data and reporting poses significant risks to an organisation's ability to efficiently transition to resource management.

This is because the professionals responsible for driving performance improvements base their decisions on evidence. With access to waste data, and little equivalent information on material usage, many of their actions will inevitably prioritise waste management (eg. increasing recycling rates) over resource management initiatives (eg. [reducing resource intensity - Box 3A](#)). The result can lead to ineffective performance in management of resource use and missed opportunities to make financial savings and develop new approaches (see [Box 5E](#)).

The research ([Box 7A](#)) also indicates that the quality of both waste and resources data available to professionals is often inadequate. While the overall level of waste and resource management reporting is relatively high ([76% and 48% respectively](#)), the proportion of organisations reporting annualised performance data against a baseline year, or target, was found to be much lower ([42% and 27% respectively](#)).

Such information is vital for an organisation to understand its overall performance on waste and resources management.

To effectively manage resource use and waste production, organisations need to be able to compare their annual performance against an established baseline or a future target. This approach allows organisations to review their performance in a meaningful way and identify whether their actions provide them with sufficient control over their use of resources and management of waste. Where organisations fail to understand their performance, their response to managing both material use and waste is likely to be ineffective.

HEMA's research indicates that the majority of Environmental & Sustainability professionals lack access to the key data they need to make an effective assessment of their organisation's waste and resource management performance. However, the research also highlighted many examples where these professionals have worked to ensure the resource management information systems generate high quality data.

#### Examples include:

- Organisations ensuring that zero waste to landfill contracts provided data directly related to their organisation's own waste production, as opposed to the average waste processed by the materials recycling facility the waste is taken to.
- Linking waste production reporting to procurement costs to demonstrate savings / lost value to the business from waste – eg. reporting weight of recycled metals removed from site in relation to the original purchase price for the material entering the businesses.

HEMA's research identified clear examples of Environmental & Sustainability professionals leading change in this area. By collaboratively working across organisations and with support from senior figures, they are driving a fundamental shift in resource management data and reporting. For example, those leading the field in cradle-to-cradle metrics, are demonstrating sustainability performance through understanding the whole life financial, environmental and societal implications of products or services and the materials used. Companies can then develop products that are less harmful and have fewer impacts as well as begin to design products and services that deliver a net positive effect.

*It is encouraging to see the discussion around **'Waste to Resource'** advance beyond the **'hygiene factors'** of efficiency and material cost savings to the much more effective approach of **smart innovation and sustainable growth, where eco-efficiency and eco-effectiveness work hand in glove.***

Daan Elffers,  
HEMA Affiliate, EMG CSR Consultancy  
Read more about Daan's work at [www.iema.net/rm115](http://www.iema.net/rm115)





## GET STARTED

FOR ORGANISATIONS NEW  
TO ACTION IN THIS AREA

Where an organisation is unsure whether it is collecting, analysing, reporting and communicating resource and waste data effectively, the following steps can be taken to review resource management metrics:

### Basic steps:

- Review the environmental management system to identify whether basic resource and waste data are reported within the system (eg. annualised data on key raw materials and waste production is reported against a baseline year or future performance target).
- If this data is not clearly available within the environmental management system, identify other organisational systems that might contain crucial data (eg. purchase records of volumes of key material and weight of waste produced).
- Where data is found to exist, cross-departmental action is needed to identify how it can be usefully extracted and reported within the business, ensuring it is accessible to those leading action on resource management performance improvement.

**Beyond the basics, the following steps can help ensure an organisation can start making effective decisions on managing their resource use:**

- Ensure the organisation has access to data that can be used to produce information on key materials used per unit of output and the equivalent in relation to waste. Initially such information may only be available for the organisation as a whole; however, as systems advance they can be refined to produce data for specific product or service lines to better understand material flow and usage across individual processes.
- Where information on material usage and waste production per unit of output is available, it should be annualised to compare the organisations performance year on year. This will improve understanding of trends in its resource management performance, which can be analysed to build understanding.

**How well do your systems combine to deliver and report the data your business needs on its use of resources?**

Complete IEMA's Resource Action Maturity Planner (RAMP) as the first step in improved organisation resource management: [www.iema.net/rmramp](http://www.iema.net/rmramp)



### Box 7B: Key factors when considering suitability of materials for purchase

- The materials performance in use, including: delivering required function, safety, weight, energy performance, etc.
- Effects related to the sourcing of the material - both positive (eg. fair-trade) and negative (eg. conflict materials).
- Risks associated with its supply (see Chapter 4).
- Ability for the material to be returned back into the system after its primary use has ended, through reuse, redistribution, remanufacture or recycling (see Chapter 5).

## 7.2 Prioritise Procurement

To effectively manage the risks and opportunities associated with resource use (Chapters 3-5), organisations must significantly improve their understanding about purchased materials. While all organisations understand the products and services they purchase, it is unclear how many have a strong understanding of the wider sustainability implications of these purchases.

IEMA evidence on the collection and reporting of resource and waste management data (Box 7A) indicates that a much higher proportion report waste data to their Environmental & Sustainability staff than report the equivalent on material resources (see Section 7.1). Without greater focus on sustainability information, there is a significant risk that organisations will fail to apply the waste hierarchy appropriately, let alone effectively transition to resource led thinking.

The current focus of organisational sustainability metrics on waste and recycling fails to focus on the origins of these unintended by-products – the initial purchase of materials by an organisation. For organisations to improve their resource use and avoid waste production, they must develop a deeper understanding of the implications of purchased materials and the procurement process.

The need to improve organisational understanding of the materials they purchase extends beyond its own operations to activities, risks and opportunities across the value chain (see Box 7B). As such, the approach taken to purchasing these materials is key to enabling more effective resource management.

IEMA evidence<sup>22</sup> indicates that over 75% of organisations employing Environmental & Sustainability professionals have some form of green purchasing criteria, with 25% indicating they apply their criteria to all products purchased<sup>23</sup>. However, discussions in IEMA's research workshops indicated that such criteria can often be broad and may fail to provide useful resources data to enhance the sustainability of purchasing decisions. For example: while many organisations include questions on suppliers' environmental policy or EMS in their pre-qualifying questionnaires (PQQs), responses fail to provide information on the key factors in Box 7B.

# Over 75%

*of organisations employing **Environmental & Sustainability professionals** have some form of **green purchasing criteria***

<sup>22</sup>. 2012 Sustainable Consumption and Production survey in response to EC consultation on product and organisational environmental footprinting.  
<sup>23</sup>. Sustainable consumption and production survey (IEMA, 2012)

### Box 7C: Ricoh's strategic response to resource management

In response to resource security risks and the benefits of efficient resource use, Ricoh has committed that by 2020 it will have reduced its overall input of virgin materials by a quarter. It will achieve this through reuse of parts and products, extending the lifetime of products in its range, through remanufacturing and substitution for lower risk materials. In working towards this target it has numerous initiatives including:

A EcoLine product range, where previously leased printers and copiers are inspected, dismantled, renewed, provided with replacement component and updated software before being sold as remanufactured products; delivering the same performance as a new printer, but with a far lower reliance on virgin materials.

Comet Circle is a system Ricoh operates to embed closed-loop resource use across its business, which acts to move the design of all products to factor in reuse capacity.

Ricoh, IEMA Corporate Partner -

Read more about RICOH's approach to resource management at [www.iema.net/rm184](http://www.iema.net/rm184)

# RICOH

Even where resources related data is collected, IEMA members have found that it is not always effectively used in the purchasing decision or communicated to other teams. The cause of this appears to be a lack of understanding among procurement teams about why they are collecting the data or how it should be applied within the purchasing decision and shared with colleagues.

**Developing a strong working relationship between the Environment/Sustainability team and the procurement team within an organisation is a fundamental step in the transition from waste to resource management.**

IEMA's 2012 research indicates that many organisations begin this process by introducing purchasing criteria related to environmental and ethical standards (eg. fair trade) or seek to use of suppliers with certified EMS. However, the 2013 workshops demonstrated many examples of organisations looking towards more resource management focussed approaches, including:

- Understanding cost, quality and risks related to the materials they purchase (see Chapter 4 - Resource Security) and comparing the performance of virgin versus recycled materials across these criteria for their key material needs.
- Establishing minimum requirements on the recycled content within materials purchased.

- Requesting suppliers provide take back schemes, which return unused product / unwanted packaging for re-use, re-distribution, re-manufacture, or recycling.
- Utilising service contracts, as opposed to direct ownership
- Exploring the lifecycle effects of key materials to develop purchasing criteria based on total cost of ownership as opposed to initial purchase costs.

For organisations supplying good and services this increase in resource related procurement criteria provides significant opportunity to develop a competitive advantage see Box 7C and further examples at: [www.iema.net/rm](http://www.iema.net/rm)

*I add value through our supply chain by bringing **lifecycle costing into the conversations** between the procurement department and our suppliers, **facilitating innovative approaches to the way we do business.***

Clare Day,  
MIEMA, Skanska

Read more about Clare's work at [www.iema.net/rm113](http://www.iema.net/rm113)



## GET STARTED

ACTIONS FOR ORGANISATIONS  
NEW TO THIS AREA

The first step in enhancing an organisation's procurement criteria related to resource management is to organise a meeting with the procurement team and understand how far sustainability related criteria are already incorporated within purchasing. The outcome of these discussions will identify whether any of the key information (Box 7B) is already collected and which materials it relates to.

Where an organisation's existing procurement processes do not use such criteria or the information gathered is generic, it should identify new criteria based on its resource management priorities, across resource efficiency, security and cycling (see Chapter 3-5).

Organisations should identify key materials and introduce an initial set of resource related procurement criteria to the purchasing process. The criteria should be developed with input from the procurement and Environment & Sustainability professionals and may include discussion with suppliers (see Section 7.3).

*How well do your  
procurement systems  
operate to manage resource  
risk and deliver improvement?*

.....  
Complete IEMA's Resource  
Action Maturity Planner (RAMP)  
as the first step in improved  
organisation resource management:  
[www.iema.net/rmramp](http://www.iema.net/rmramp)

### 7.3 Engage the Value-Chain

To truly manage resources, organisations must understand the impacts, risks and opportunities of the lifecycle of the materials they rely upon. This cannot be achieved without strong relationships and communication across the value chain. It involves going beyond conventional thinking to consider a material from its source, through the supply chain and the organisation's activities, onto clients and the end user and the

potential for it as a future resource. While detailed analysis of these factors for all materials used will remain beyond the capabilities of most organisations, the need to adopt lifecycle thinking and improved knowledge across the value chain is increasingly becoming the norm.

This trend can be clearly seen in the calls from business to see lifecycle thinking embedded in ISO 14001, as established in IEMA's influential 2012 position statement<sup>24</sup>.

This call has been positively received by the many countries contributing to the ISO working group revising the standard, as shown by its inclusion within the committee drafts.

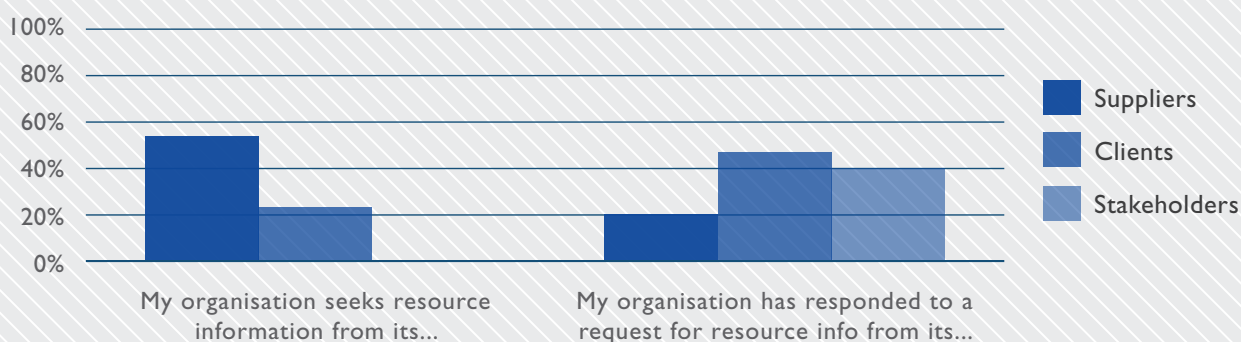
This encouraging trend provides a strong indication that more than 285,000 certified<sup>25</sup> global organisations, and sites will focus on these areas from 2015.

*The revised **ISO 14001** standard should deliver a **much needed wake-up call** to many businesses to embed **lifecycle thinking** and **value chain engagement**.*

#### Box 7D:

#### Information flows between organisations related to resource management

Resource Management communication in the Value Chain



***We changed waste from a cost of approximately £80k a year to a co-product with an annual income stream in excess of £200k, this action has acted to meet the supply-chain goals of our key customers and strengthened our reputation.”.***

Andrew Maguire, MIEMA, Kepak -

**Read more about Andrew’s work at [www.iema.net/rm148](http://www.iema.net/rm148)**



IEMA’s research has found that many organisations employing Environmental & Sustainability professionals have already begun to explore opportunities to improve resource management through engaging their value chain. A positive message is apparent, with 39% of respondents indicating their organisation had attempted to apply some aspects of materials re-use within their company’s value chain. However, this action is lagging behind internal progress with a third more organisations (57%) indicating they already applied aspects of reuse. A much greater level of communication and activity between organisations is required to enable continuous improvements in resource efficiency, security and cycling across the value chain. Such actions will be enabled by those organisations with access to staff with clear communication, leadership and systems thinking skills who look at resource issues along their lifecycle, skills already embedded in IEMA’s standards<sup>26</sup> (Box 6C).

The research also considered communication on resources across the value chain (eg. between a company, its clients and supply chain). The results highlight potential threats to the establishment of effective resource management across material lifecycles (Box 7D).

Firstly, Environmental & Sustainability professionals currently have little knowledge of such communications related to resource efficiency, security and cycling issues between their organisation and its value-chain. The findings indicate 54% are aware that their own organisation has requested resource management relevant information from its suppliers and that only 47% have received requests from their clients. The overall finding is concerning as it indicates that either these key change agents are not effectively engaged in their company’s resource management actions with its value chain, or, perhaps more likely, the level of communication on resource management remains relatively low.

However, the findings do indicate evidence of a positive relationship between organisations employing Environmental & Sustainability professionals and a higher level of resource related communications with both clients and suppliers. For example: **Organisations employing Environmental & Sustainability professionals were 7% more likely to seek resource management information from their suppliers,** compared to resource management related requests from their clients, who are likely to be representative of the wider market.

The second finding is more worrying. While over half of respondents indicated their organisation requests resource related information from their suppliers, only 23% made similar requests to client (Box 7D). While this may not appear to be a surprising result, as clients tend to specify their needs and suppliers respond to such requests, it could have significant implications for establishing effective resource management in the value-chain. If resources are to be managed more effectively - to establish a circular economy - suppliers need to better understand their initial client's and end customer's needs in the usage and disposal of the service, product, component or material being supplied. Without such knowledge, it will prove difficult for designers<sup>27</sup> to access the information to design products and services to use materials in an optimal manner, limiting their influence towards a circular economy.

IEMA found that companies are seeing significant benefits from responding to client requests for action to improve resource management through the supply-chain. These include direct financial returns, from reducing waste disposal costs and the creation of new income streams (eg. turning what was once considered waste into a saleable by-product and secondary resource). However, there is increasing recognition of wider indirect benefits from proactive engagement on resource management across the value-chain, including:

- Establishing closer and longer-term relationships with key clients and suppliers
- Enhancing reputation in relation to sustainability performance
- Improving knowledge and, through this, resilience to market changes
- Meeting growing shareholder expectation around transparency in material use and sustainability performance

In its widest form, value-chain engagement involves engaging with all stakeholders relevant to an organisation's use of resources. Action is still relatively infrequent, but organisations are increasing developing an understanding of how their by-products could benefit the local community.

Organisations employing IEMA members have already identified and implemented numerous schemes to share unneeded materials with local charities; however, compliance with waste regulations must be managed in such cases.

<sup>27</sup> For further information about the role of design in establishing a circular economy see the RSA's work on The Great Recovery – Redesigning the Future at [www.iema.net/rm230](http://www.iema.net/rm230)



## GET STARTED

ACTIONS FOR ORGANISATIONS  
NEW TO THIS AREA

Initial steps in this area involve developing an understanding of how an organisation currently communicates on resource efficiency, security and cycling issues. This involves two key areas:

1. Looking up the value-chain to establish whether the organisation receives any communication on resource management issues from clients (existing/prospective) or wider stakeholders. If so, it is vital to review whether and how well the organisation has been able to respond. Even where resource related communications have been limited, it is also valuable to explore whether any key clients have resource related corporate sustainability objectives. This can identify opportunities to enhance client relations, by seeking engagement on how an organisation can supply enhanced resources related data to better contribute to their sustainability goals.

2. Understanding how effectively the organisation currently communicates about resource efficiency, security and cycling issues with its supply chain. This activity has substantial crossover with the initial activities to improve procurement processes (Section 7.2). Action must be developed in partnership between an organisations procurement and environment/ sustainability teams to ensure a common understanding of the goals and outcome of any new activities and identify future opportunities.

**How well do your  
systems operate to engage key  
stakeholders in your resource  
management strategies?**

.....  
Complete IEMA's Resource Action  
Maturity Planner (RAMP) as the your  
first step in improved organisation  
resource management:  
[www.iema.net/rmramp](http://www.iema.net/rmramp)

# WHAT NEEDS TO HAPPEN NOW?

## 8.1 Our Conclusions

Organisations **must** transition their thinking from waste to resource management.

Many are already beginning to do this and are gaining significant competitive and productivity advantages. However, there is a need for all organisations to pick up the pace, or face the threat of being left behind or out-competed by new entrants with innovative business models.

Effective organisational resource management involves understanding, planning and taking action in three areas: resource efficiency and effectiveness, resource security and resource cycling. However, enhancing one of these areas often improves overall resource management and sustainability performance.

To maximise the potential improvements, organisations should ensure their personnel are engaged in the process and their systems can deliver.

Key personnel include the CEO, board and senior management (to ensure resource management is recognised as a strategic business issue) alongside environment and sustainability teams with their ability to enable collaborative action. Beyond this, all colleagues should be involved in resource management initiatives could affect their roles, particularly those in research and development and product and systems design.

An organisation's systems must also be aligned to deliver effective performance improvements in management of resources. The key systems are involved in resource data collection, analysis and reporting; the procurement of materials and control activities related to stakeholder engagement across the value-chain.

All organisations can take action to improve resource management. That's why each and every action should be encouraged, championed and celebrated - from initial steps to ramping up initiatives that lead the way.

**IT'S WITHIN OUR POWER TO  
MAKE A MASSIVE DIFFERENCE.**

## 8.2 Our call to action - see how you measure up...

We're calling upon all Environmental & Sustainability professionals to champion the transition to resource management in your organisation.

Our simple resource management maturity analysis tool - the RAMP (Resources Action Maturity Planner) [www.iema.net/rmramp](http://www.iema.net/rmramp) - will help evaluate your organisation's current progress.

This is your opportunity to transition - From Waste to Resources - management.

**GET INVOLVED, TODAY.**



### 8.3 Supporting you all the way

IEMA will continue to actively support members through regular webinars, workshops, conferences and our online Resource Management hub ([www.iema.net/resources](http://www.iema.net/resources)).

#### Visit the hub to:

- Complete the RAMP for your organisation ([www.iema.net/rmramp](http://www.iema.net/rmramp))
- Sign-up to join the **Resource Management Network**
- Volunteer to help develop IEMA's **Resource Management Workbook series** to provide a practical toolkit to help organisations advance their activities
- Get further support, from articles, links to other useful resources or catch up on resource management webinars

### The Research

IEMA undertook an online survey of its membership in 2013, receiving 940 responses from Environment & Sustainability professionals working / interested in resource management. A resource management leader's forum was hosted by WSP in London (May 2013) to define the key themes of the research, including presentations from Rolls-Royce, Wiles Greenworld and WSP.

Concepts developed through this initial work were tested with Environment & Sustainability professionals to ensure the outcomes focussed on practical steps to enable change. IEMA member workshops were held in London, Cardiff, Birmingham and Lincoln during July 2013 and discussion continued at IEMA's annual Resource and Waste Management Conference in Birmingham (October 2013).

The direct research findings are supported by relevant aspects of wider IEMA research into the environment and sustainability profession, specifically:

- 2013 IEMA practitioners' Salary Survey ([2120 respondents](#))
- 2012 Sustainable consumption and production survey ([516 respondents](#))
- 2011 Sustainable Business Practice Survey ([1348 respondents](#))

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## About IEMA

The Institute of Environmental Management & Assessment (IEMA) is the professional home of over 15,000 environment and sustainability professionals from around the globe. We support individuals and organisations to set, recognise and achieve global sustainability standards and practice.

Our members are equipped to collaborate, lead and deliver sustainability in their organisations, using IEMA standards as their foundation. They improve environmental performance and drive competitiveness, productivity, resilience and growth.

As an organisation we are independent and international, enabling us to deliver evidence to Governments, information to business and inspiration to employers that demonstrate how to transform the world to sustainability.

- Find out more about IEMA here: [www.iema.net/about-us](http://www.iema.net/about-us)