



Rijkswaterstaat  
Ministry of Infrastructure  
and Water Management



# Harnessing Procurement to Deliver Circular Economy Benefits





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# Introduction

Many reports have highlighted the potential of the circular economy to increase resilience and reduce environmental impacts of consumption and production. The European economy is becoming more resource efficient as its circularity improves but it is still far from circular. Around 3.4 million people are currently employed in circular economy activities in Europe. A growing circular economy in Europe can create jobs by reducing regional mismatches in unemployment. It is estimated that by 2030, expanding the European circular economy could create between 1.2 to 3 million jobs in Europe and reduce unemployment by between 250,000 to 520,000 by focussing on materials productivity. Central to this argument is the development and take up of more circular business models (WRAP, 2015).

The EU LIFE+ REBus project<sup>1</sup> aims to reduce product consumption by demonstrating the commercial case for European businesses to change their business models. It has estimated that around €325 billion of benefits are achievable across Europe if all the measures used throughout its pilots in textiles, electricals & ICT, construction and furniture are consistently adopted throughout Europe. As a REBus partner, the Dutch Rijkswaterstaat has aligned these resource efficient business models with public procurement budgets, tendering, asset management and legislation across the four sectors. The Rijkswaterstaat pilots have been undertaken in collaboration with the Dutch Green Deal Circular Procurement, and adopts a learning by doing approach to developing and implementing circular procurement principles.

<sup>1</sup> [www.rebus.eu.com](http://www.rebus.eu.com)

## Key recommendations

1. Scaling successes from pilots requires a systematic and coordinated approach. Initiatives, like both Green Deals on Circular Procurement in the Netherlands and Belgium, provide useful frameworks to encourage the development of pilots, build momentum and create scale. They are also potentially helpful in capacity building, knowledge sharing, training and enable more robust monitoring success of circular policy implementation.
2. Collaboration with markets and suppliers is essential. Procuring for more circular economies is still new and there is a gap between current market availability and what it is capable of offering. Category planning provides a framework for market engagement and dialogue, setting ambition and targets, and in working with the supply chain on delivering future as well as current needs.
3. More governments and cities are developing circular roadmaps and policies. Public procurement has been shown to measurably accelerate the delivery of these circular ambitions through a strategic, circular approach to procurement. Circular procurement is a demonstrable way of leading by example and encourage to provision of more circular goods and services from the private sector.

### Lessons circular IT

For the IT sector the possibilities for procuring equipment in a circular system with a lower environmental impact is explored. Read more about the opportunities and learnings from the REBus pilots relating to IT in the category report and factsheets of Dutch projects.

- Sectorreport: <https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreportictlessonsoktober2017.pdf>

# Circular procurement principles

Public procurement can play a key role in transitioning to a circular economy. Including 'circular principles' in procurement practices from the first stages of a procurement to the end of product life can help public sector buyers deliver sustainability goals through an active, cost effective and accountable approach.

The European Commission good practice guidance on procurement for a circular economy (EC, 2017) outlines three approaches for implementing circular procurement. The first is at the 'system level', addressing the contractual methods that the purchasing organisation can use to encourage circularity. The next, 'supplier level', approach covers how suppliers can build circularity into their own systems and processes, in order to ensure the products and services they offer meet circular procurement criteria. The final, 'product level', approach focuses on the products that suppliers to public authorities may themselves procure within the supply chain.

**Each approach draws on the following circular principles:**

1. **Avoiding waste**, e.g. through over purchasing. Optimising use of resources by clients, including reassessing the need for ownership; increasing workplace utilisation through models such as shared space; and procuring adaptable buildings as a client.
2. **Circular design** thinking by clients and design teams, including designing for disassembly and for reuse and recycling.
3. **Material choice**, e.g. recyclable products and materials, including use of non-toxic materials; reused products and components (e.g. from demolition) and recycled content to encourage circular markets for secondary materials.
4. **Regenerative use of natural resources** by suppliers and contractors, including actively encouraging lifetime optimisation throughout the use phase by enabling repair, reuse and remanufacturing and finally recycling.

# Key lessons from circular procurement pilots

- » The EU LIFE+ REBus project has shown that realising the benefits from procuring more circular products is hindered more by existing processes and financial structures, e.g. separate capital, operational and waste disposal budgets, than by policy. The linear nature of many procurement projects acts as a barrier to circular thinking within the supply chain and highlights the role that clients can play in creating demand for circular solutions.
- » Closing product and material loops through strategic circular procurement increases resilience as well as economic, environmental and social benefits. However, EU public bodies and many member states often have little capacity to influence some goods and services categories, e.g. those with extended global supply chains. Pan-European sectoral approaches for some categories could help realise circular benefits particularly where global supply chains are involved in order to close product and material loops within the EU.
- » Public sector bodies in the EU often only exert limited influence in terms of design and production for some products sourced from global markets, despite being large consumers at a national level. Market engagement may often be limited to suppliers and not the manufacturers. Therefore, circular ambitions may initially need to focus on other areas like in-use and end-of-life for 'quick wins'. Another option is for public sector bodies to combine procurement interest in these areas to achieve economies of scale.
- » One 'quick win' is encouraging the incorporation of recycled materials in new products. Specifying recycled content as a procurement target encourages greater demand for recycled materials which helps close material loops as well as realising value from waste.
- » Improving asset utilisation rates provides another quick win. Utilisation rates for publicly procured products are poor, particularly in construction, transport and some areas of ICT. The average European office is used only 35-40% of the time, even during working hours. Improving utilisation

can also help encourage reuse and product life optimisation.

» Take-back models provide one of the most practical circular procurement models to consider, e.g. with office furniture, for maximum impact reduction. However, there are currently limited options within many markets and these need to be expanded.

» Awareness and markets for repair and reuse need to be actively promoted and developed if the benefits from product lifetime optimisation are to be fully realised. Estimates of saleable items are often unrealistic given current awareness and collection methods. There is considerable leakage - up to 24% - into other disposal routes. Better communication across public sector bodies, with suppliers, collectors and refurbishers would help in closing loops. Circular procurement can encourage the availability of more take-back options and third-party arrangements, e.g. between manufacturers and remanufacturer and/or recycling businesses.

» Large scale projects can typically embrace whole-life thinking more easily, but their size, value and complexity can also increase perceived risks when moving away from business as usual. This is also true for large scale suppliers compared with SME suppliers. Large organisations have more capacity to engage with pilots, but SMEs are more able to adapt processes, products and services when the benefits are apparent.

» Capacity building is important in accelerating the take-up of circular procurement principles within pilots and beyond. A critical mass is required to enable circular principles to become mainstream for purchasers and suppliers, so that the benefits of linking procurement to the delivery of wider organisational and national circular goals is more evident and achievable.

## » Impact from REBus circular procurement pilots

If the REBus pilot benefits from the Dutch Almere A6 motorway reconstruction project alone were extrapolated at a national level within the Netherlands this could deliver impact savings of around:

- » 45,000 tonnes of CO<sub>2</sub> equivalent; and,
- » 2,700,000 tonnes of material savings.

If these savings were extrapolated across the whole of the EU member states this could create savings of around:

- » 590,000 tonnes of CO<sub>2</sub> equivalent; and,
- » 35,000,000 tonnes of material savings.

Through the more circular procurement of office equipment and redeployment of existing assets, there is an estimated savings €6-7 million per year across the Dutch government. Extrapolating the REBus pilot benefits to a national level in the Netherlands could deliver savings of around:

- » 41,000 tonnes of CO<sub>2</sub> equivalent; and,
- » 13,000 tonnes of material.

Scaling up workwear collection and reuse by 15% across Europe would potentially save 7,000 tonnes of textiles from landfill or incineration, equivalent to a CO<sub>2</sub> equivalent savings of around 72,500 tonnes per year. Scaling up the REBus workwear pilot impacts across all EU member states would deliver impact reduction in the region of:

- » 1.5 million tonnes of greenhouse gas (GHG) emissions savings;
- » 280,000 million cubic metres of water savings; and,
- » € 17 million net financial benefit (GVA).

Scaling up the benefits from the whole REBus project could result in annual benefits at the EU level:

- » 184 million tonnes of direct material savings (avoidance) plus 172 million tonnes material diverted (e.g. through reuse);
- » 154 million tonnes of GHG emissions savings; and,
- » € 324 billion net financial benefit (GVA).

- » Procurement processes and systems are critical in bridging the 'gap' between the technical elements such as green products and the behavioural elements such as engaging the relevant stakeholders, encouraging market and supplier shifts in developing and supplying more circular products (Figure below). Enabling more circular and resource efficient business models through circular procurement helps to facilitate this relationship. Every successful circular procurement tender, of any size, creates an example of a working circular business case. Each successful tender therefore results in some degree of environmental impact reduction and potentially also in economic and social benefits.
- » Financing the circular economy opportunities through public sector procurement is still poorly understood. The impact of different financing mechanisms for some projects are complex and require individual consideration. There is currently not enough evidence in this area and financial systems, processes and risk remain significant barriers to accelerating take-up of REBMs beyond pilots in some sectors and organisations. One option is to link circular public procurement to structural and financial support, i.e. including circularity in the funding criteria.

## Procurement process findings

**Vision** - The Dutch ProRail experience<sup>2</sup> highlighted the importance of developing an internal vision and buy-in, alongside market consultation and dialogue rounds with suppliers, to improving circularity.

**Time** - Circular Procurement is still new. Engagement, internally (e.g. challenging need) and externally (e.g. market dialogue), can initially take more time than existing procedures. This can create issues as time is scarce in many procurement procedures (PWC, 2016). Time spent on market engagement early in the procurement cycle was however considered a worthwhile investment by the pilots.

**Market development** - Procurement exercises need to take account of the

time required, as well as the market capability, to deliver more circular products. The REBus pilots in the Netherlands, showed the reality of market supply does not yet match circular ambitions. This requires internal and collaboration with suppliers. It may be necessary to focus on the short-term options offered by the current market in parallel with encouraging the long terms policy goals for a more circular economy.

**Green Public Procurement (GPP) criteria** provide a useful framework for embedding green procurement goals into tenders. Core criteria align with existing market supply. To encourage circular solutions, comprehensive criteria should be developed to address gaps and enable

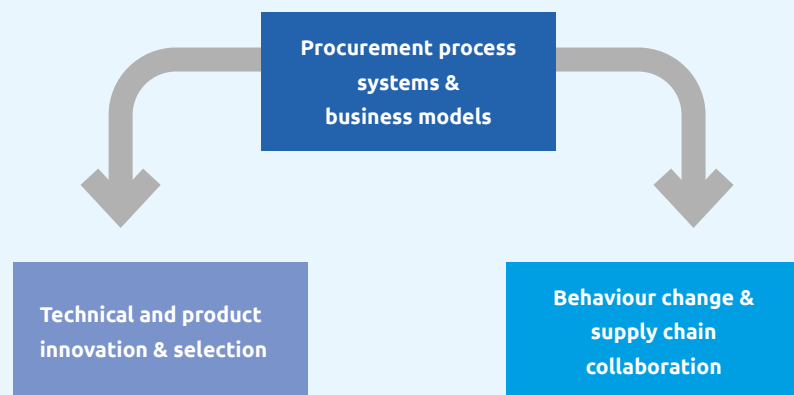
### Lessons circular Textiles

Textiles have a high environmental impact. This impact primarily lies in the beginning of the textile supply chain, with the cotton cultivation (water, pesticides and artificial fertiliser). Read more about the opportunities and learnings from the REBus pilots relating to textiles in the category report and factsheets of Dutch projects.

- Sectorreport: [https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreporttextileslessonsoktober2017\\_0.pdf](https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreporttextileslessonsoktober2017_0.pdf)

<sup>2</sup> [www.rebus.eu.com/resources/case-studies/prorail-case-study](http://www.rebus.eu.com/resources/case-studies/prorail-case-study)

Bridging the technical and behavioural divide in markets



circular principles to be more readily embedded within tenders for public bodies seeking to implement circular procurement principles. These should draw on existing best practice and emerging national criteria.

**Tendering** - Calls should be incentivised, where practical, to challenge the market to deliver circular solutions. For example, using functional or performance based specifications to address potential barriers to circular economy principles. Simple examples include not always asking for 'new' equipment, encouraging second-hand (or refurbished) options; and, avoiding prescriptive specifications that could restrict solutions from other sources, e.g. rental and service based business models.

**Verification** - The pilots have highlighted that EU member states should be encouraged to work collaboratively within certain categories - e.g. ICT & electricals, furniture and textiles - to ensure a consistent approach to global markets in terms of validation and verification of green and circular claims in tenders. These can be problematic when comparing claims against technical criteria within tenders. with global supply chains. Also, specific arrangements need to be made to ensure re-use happens because of take-back.

### Lessons circular Construction

Construction consumes more than half of resources used in the Netherlands. Read more about the opportunities and learnings from the REBus pilots relating to construction in the category report and factsheets of Dutch projects.

- Sectorreport: <https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreportconstructionlessonsoktober2017.pdf>

**Performance criteria** - These enable a progressive approach to quality through active contract management. It is important to structure leasing payments, e.g. for pay-per-use, to ensure appropriate performance from the suppliers.

**Contracting** - The two most commonly used circular economic contract forms at this point are the buy and sell-back model and pay-per-use model. An analysis carried out for UMC Utrecht in the Netherlands (REBus, 2017) shows that both models are more economical than a standard linear contract, in which pay-per-use appears to be more economical for a 5-year contract period and a buy/sell-back contract offers the best results for a 10-year contract period.

**Collaboration** - Procurement is an enabling process that is key to operations based on circular economy principles and customer-driven. The REBus pilots showed that while the procurement process is important, it is certainly not the only link in the chain that can shape circular economy principles.

### Lessons circular Furniture

Circular office furniture is a product group that have come relatively far with regard to circularity. Read more about the opportunities and learnings from the REBus pilots relating to furniture in the category report and factsheets of Dutch projects.

- Sectorreport: <https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreportfurniturelessonsoktober2017.pdf>

## Bibliography

The EU LIFE+ REBus Project was managed by WRAP, Rijkswaterstaat was partner in this project for the procurement cases. The REBus website contains a variety of reports, case studies and pilot project factsheets from which the report above was compiled<sup>3</sup>. In addition, the Dutch centre of procurement expertise, Pianoo, contains a large volume of circular procurement guidance (in Dutch and English)<sup>4</sup>.

Further case studies and guidance are also emerging from sources like ICLEI ([www.iclei.org](http://www.iclei.org)), Local Governments for Sustainable Procurement and European funded projects like SPP Regions ([www.sppregions.eu](http://www.sppregions.eu)).

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<sup>3</sup> <http://www.rebus.eu.com/resources/case-studies>

<sup>4</sup> <https://www.pianoo.nl/public-procurement-in-the-netherlands/sustainable-public-procurement-spp/spp-themes/circular-procurement/getting-started-with>

## Further information

### Contact:

Joan Prummel  
[joan.prummel@rws.nl](mailto:joan.prummel@rws.nl)



Cuno van Geet  
[cuno.van.geet@rws.nl](mailto:cuno.van.geet@rws.nl)

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*“Pilots with circular procurement are an important lever for circular economy because every circular purchase creates a working circular business case”*