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Resource Efficient Business Models
REBus Pilot: Circular procurement - furniture
ProRail Facilities Services

Project: Traffic control centre Utrecht

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Reading guide

This report is structured according to the process steps that were taken during the pilot.
Each chapter corresponds to one process step. The conclusion gives a general discussion. See the proces schart below:

Process step
1. Introduction
2. Orientation phase
3. Formulating call for bids and approaching market players
4. Dialogue rounds
5. Call for bids
6. Offers and assessment
7. Contract phase
8. Circular railway
9. General discussion

ProRail and REBus

The EU Life+ project REBus (Resource Efficient Business Models) and railway infrastructure management company ProRail have successfully completed a pilot project with circular procurement. The new traffic control centre, officially opened in Utrecht in June 2015, was furnished with 'circular' flooring and furniture. Purchasers and suppliers were encouraged in the call for tenders to think about a business model based on value retention of the raw materials throughout the entire supply chain.

The learning experiences that were gained throughout the whole process were recorded. These experiences are being shared with other market players to generate enthusiasm for them to use circular procurement as well, or to explore the possibilities for this. For example, the knowledge about circular purchasing of office furniture that was gained with this ProRail pilot project will be used in the next pilot that is being prepared with the University Medical Center Utrecht (UMC).

REBus

The ProRail pilot was supported by the EU Life+ project REBus. The objective of this project is to gain and share knowledge about the benefits of implementing resource efficient business models and to find out if these models will deliver the target of a 15% reduction in resource consumption and costs by the end of 2016. REBus is being delivered in the UK and the Netherlands. In the Netherlands, REBus partner Rijkswaterstaat is working with PIANOo, CSR Netherlands and the Netherlands Enterprise Agency to explore business models within five industries: ICT, office furnishings, construction, textiles and catering.

REBus and ProRail are two of over thirty organisations and initiatives in the Green Deal on Circular Procurement. The goal of this Dutch initiative is to get circular procurement onto the agendas of entrepreneurs and governments.

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1 Introduction

In March 2013, the project team for ProRail Facilities Services' new traffic control centre in Utrecht (NVLU) was asked to provide it as a pilot location for the government of the Netherlands. Objective: test circular business models. This chapter describes the background, NVLU pilot location and the scope of the two pilots.

1.1 Background

The circular economy is an economic system that maximises the reusability of products and resources and minimises value destruction. This differs from the current linear system, in which resources are converted into products that are destroyed at the end of their lifespan. The circular system has two cycles of materials. A biological cycle, in which residual materials flow safely back into nature after use, and a technical cycle in which products and components are designed and marketed to be used again at a qualitatively high value level. This retains the economic value as much as possible. The system is therefore ecologically and economically 'restorative'[1].

To stimulate circular procurement, the Dutch government is working on test projects within the EU Life+ project REBus (Resource Efficient Business Models) and the Green Deal on Circular Procurement.
In the Green Deal on Circular Procurement, more than 30 public and private parties agree to use their procurement policies to boost the circular economy. In 2014 and 2015, they started two circular procurement projects to learn from each other's experiences. Their aim is to have demonstrably incorporated circular procurement into their procurement processes, policy and strategy by 2016 at the latest[2].

REBus approached ProRail to take part as a pilot location. Sustainable rail is one of ProRail's strategic objectives. ProRail has the objective of consuming 30 percent less energy and reaching the highest rung of the 'CO_2 performance ladder'. This involves using more innovative rail technology, using sustainable materials and developing sustainable stations, which made it important to ProRail to agree to make a pilot location available

ProRail had the option of participating in a pilot for IT hardware, floor covering and furniture. Given the security of the IT landscape for ProRail, two pilots were started: floor covering and furniture for the new traffic control centre to be built in Utrecht.

1.2 NVLU location

Utrecht Centraal handles the most train traffic of any station in the Netherlands. This makes the traffic control centre at Utrecht one of the most important in the railway network. The existing centre badly needs to be replaced: the building is outdated and the location is also no longer adequate. The train traffic can be controlled better from a new building for traffic flow, safety and reliability.

That is why we are moving the traffic control centre to a new building in Utrecht's Cartesiusdriehoek.

[1] MVO Nederland: http://www.mvonederland.nl/circulaire-economie
[2] MVO Nederland: http://www.mvonederland.nl/publicatie/green-deal-circulair-inkopen

This moves traffic control out of the evacuation area for the railway station Utrecht Centraal, meaning that the centre can simply continue to function in the event of an evacuation of the station area. The new, sustainable building also provides more space.

Traffic control and all the systems involved must always be able to continue to do their work. Even during an emergency. That is why we separate people and technology. To be less vulnerable, part of the IT systems is housed in a data centre. The energy systems also have a redundant design and are installed at an external location. In this way, there is always a backup.

Videos of this project:
www.youtube.com/watch?v=dXGQPzeYXKc
www.youtube.com/watch?v=ARs48M4T1YE&feature=youtu.be
www.youtube.com/watch?v=bbbjYrzccZ4

Construction began in October 2013. The new traffic control centre was migrated and became operational in the night from 10 to 11 April 2015. The control centre was officially opened in June 2015.

1.3 Scope and criteria for pilots

1. Pilot project for circular procurement of furniture for the entire traffic control centre, except for the 24-hour furniture in the control room. The total floor area of the building is 4500 m^2.
2. Pilot project for circular procurement of floor covering for the meeting rooms on the 3rd floor, the part for offices on the 2nd floor and the flex space on the ground floor. The total area is 514 m^2. There are other floor finishes in the architectural specifications for the contractor

Figure 1, 2nd floor office

The basis for the pilots is that we explicitly see them as a first step toward circular operational management at ProRail. Because the pilots are too small in size and duration to have a far-reaching impact on the operational management, we primarily see the added value in the exercise for both ProRail and the tenderers to gain experience with circular operational management.

One of the objectives of the pilots is also to obtain information about possible subsequent steps, to be able to build on our experience in future pilots (at ProRail and other government agencies), and to be able to study them in more depth. That is why good documentation of the experience gained during the process is important for both ProRail and the tenderers.

2 Orientation phase

The pilot began after approval by ProRail's procurement organisation (AKI) and the 'sanctioning' during the CE Boostcamp on 26 May 2013.

Figure 2, Hans Fleer, ProRail Facilities Manager, makes the pilot project official

A team was formed consisting of Royal Haskoning DHV, an advisor from PIANOo and the Facilities project leader for the NVLU. The scope was determined in this phase, but not yet the process. ProRail still lacked knowledge regarding the circular economy.

2.1 Market meeting

On the initiative of the Dutch government, a market meeting was held on 11 April 2013. The government chose which organisations to invite in addition to ProRail's preferred suppliers. See appendix 1 for the report and the homework assignment. Participants in this meeting were ProRail, de Jong Gortemaker Algra, the Ministry of the Interior and Kingdom Relations, PIANOo, Steelcase, Interface, Maasdam, Ahrend, Turntoo, DGMI.

2.2 Reflection on the market meeting

ProRail did not find this market meeting to be as useful as it needed to be. The parties were poorly prepared and were unable to adequately explain to ProRail what the circular economy actually is and what it involves in the interior design industry. This does not mean that a market meeting cannot be very useful.

For this pilot project, the market meeting was too early in the process. ProRail didn't know enough about the circular economy yet, and had expected to get more advice about what parties could be invited to the meeting. For example, MVO Nederland could have given advice about the parties selected for the market meeting so that the smaller parties could also have taken part. More time should have been invested to give a better result.

2.3 Statement of requirements

In the period after the market meeting, we concretely stated ProRail's needs in a functional statement of requirements and an interior concept. This was done to coordinate with and obtain approval of the various stakeholders such as:

- The programme team for the "new way of working"
- Focus group
- Management of the Utrecht traffic control centre
- The steering group for the NVLU project

Some graphics from the interior concept:

Figure 3, entrance reception desk

Figure 4, office level for informal meetings

Figure 5, control room 1000 m^2

The functional statement of requirements (textual description of desired functions) included a look & feel document. The purpose of this document was to give the bidders an idea of the interior of the new centre, although the market parties were only to regard this as look & feel, and were free to develop their own concept.
This document was drawn up by the interior architect from the architecture firm that also designed the building. In this way, ProRail intended the interior to fit with the exterior of the building. The criteria for this were:

- Sustainable
- Robust
- Innovative
- Flexible

The result of this method was that the look & feel document contained a lot of custom work. Later in the process, it was found that custom work would be much more difficult to approach in a circular way than standard products. This was because circularity had not initially been included in the look & feel document. Once we knew more about the circular economy, we made this an additional focus of the procurement document at a later stage. The procurement document, including the functional statement of requirements and the look & feel document, was drawn up as a conclusion to our needs assessment.

3 Formulating call for bids and approaching the market

3.1 Drafting first version of call for bids

As a starting point, ProRail completed the functional statement of requirements and the look & feel document and issued them to the team supporting this pilot project (consisting of an advisor from Royal HaskoningDHV and an advisor from PIANOo). Upon consultation, it was decided that a regular call for bids with a circular economy chapter would not be adequate. Royal HaskoningDHV then drew up a letter/call for bids in January 2014 with the entire focus on circular procurement.

This call for bids included the following elements:

- Introduction
- Explanation of circular economy
- Scope of the contract
- Terms and conditions
- Selection procedure

The following were included as appendices:

- Functional Statement of Requirements
- “Look & Feel of furnishings” report
- NVLU floor plans
- ProRail vision of the new way of working
- ProRail terms and conditions of purchase
- Planning
- Net present value calculation model based on the TCO

The team knew that the call for bids was not 100% perfect and was looking for the right tone and criteria. Most of all, it took a lot of effort to write the chapter about the selection procedure, contract award criteria and assessment to adequately express the circular aspect.

To focus the call for bids, and especially the chapter about the selection procedure, we initially requested two dialogue rounds with an optional third round. We also asked for a traditional offer and a circular offer to be submitted so that the team could make a comparison. The bidding parties were free to determine the business model that they wanted to offer, for example pay-per-use, lease, buy back agreement, sale/return guarantee (with or without residual value).

3.2 Type of tender

ProRail wanted to have full freedom to try things out in these pilot projects, especially because it is a learning process for everyone involved. That is why we chose to call for bids for the floor covering privately to multiple parties. The volume is small enough that the total amount is below the procurement threshold of € 50.000.

ProRail also wanted to have full freedom for the circular procurement of furniture, especially because this product pallet is heterogeneous, which makes circular procurement more difficult.
This is related to the products coming from different suppliers that have different production processes.

At the same time, the products can have different lifespans and require different maintenance. That is why we purchase the furniture as a supplement to the building cost for the NVLU.

3.3 Approaching market players

In February 2014, the call for bids was ready to approach the market for the two pilots.

Floor covering supplier
After a brief market investigation, it was difficult to find another third party aside from Interface and Desso that was suitable to take part in the pilot and that would be able to provide a good bid. Searching on the internet did not produce any hits and the advisors in the team did not know any other parties either. Due to the time pressure of the project, little to no time was made available for this.

Furniture supplier
Initially, we were only going to approach our preferred supplier. However, in view of the risk of failure of the call for bids, it was decided at the last moment to ask a second party that had also participated in the market meeting.

The pilot emphatically showed that good market research always needs to be done on what parties are working on the subject of 'circular economy' and what they can deliver. In retrospect, ProRail should have taken more time on the question of what parties were best suited to take part in the pilot.

3.4 Written round of questions

Prior to the first dialogue round, the parties could ask questions about the call for bids.
The questions that we received were primarily about m^2, floor finishing, the terms and conditions of purchase and other technical details. There were no questions about the assessment method or circular economy yet.

4 Dialogue rounds

The dialogue rounds took place in the period from March to May 2014. After the dialogue rounds, the procurement team was supplemented with a facilities contract manager from ProRail. Two dialogue rounds were planned. In the end, four dialogue rounds were needed for floor covering and five rounds for the furniture. This produced a lot of information and insights and it led to considerable changes to the call for bids.

The first dialogue round in particular was somewhat awkward; the suppliers were clearly not used to actively contributing ideas to the content of the call for bids. In the beginning, they were quickly inclined to go along with ProRail's wishes, while we were hoping for critical feedback. This went more smoothly from the second dialogue round.

It took more time than anticipated and the time between two dialogues was actually too short (two weeks). This was in part because many of the documents needed to be modified and this took some time with internal preparations and consultation, and also because the tenderers needed enough time to make a response. That is why there was a month between the second and third dialogue.

Everyone involved found the dialogue rounds very valuable given their lack of familiarity with the subject. Step by step, ProRail's needs became clearer to the suppliers and ProRail gained a better picture of what was and was not possible and the opportunities and pitfalls in circular office furniture solutions. One of the furniture suppliers withdrew after the second dialogue round. Too many items that were specified were 'special work' for this party, which would have to be supplied by third parties. This meant that the contract was not attractive enough for this supplier to make an offer.

The insights from the dialogue rounds can be found in chapter 8.

5 Call for bids

The call for bids that was ultimately published with regard to the circular aspects of the pilot can be found in appendix 3.

In the call for bids, ProRail assumes that we pay for the *use* of the products to be delivered, therefore not for the products themselves (for example like a leased vehicle). Maintaining the desired quality of the products during the use period is part of the request and is the tenderer's responsibility. The NEN 2767 standard was used to maintain quality.

The regular (daily) cleaning activities were not part of the call for bids. The tenderer was free to propose a suitable payment model between ProRail and the tenderer during the use period (e.g. a one-time amount, annual or monthly installments or a combination). The planned use period is 10 years.

We asked the tenderers to make a circular offer and a 'traditional' non-circular offer. The intention was to obtain better insight into the results of circular procurement relative to the regular procurement of office furniture. Setting aside the circular offer, the traditional offer was only assessed on TCO. The offer still had to satisfy the standard criteria for sustainable purchasing of office furniture and upholstery[3].

We chose to award the contract on the basis of the most economically advantageous tender. The circular aspect of this offer manifested as a number of subaward criteria; we did not address the subject of circularity in the functional statement of requirements.

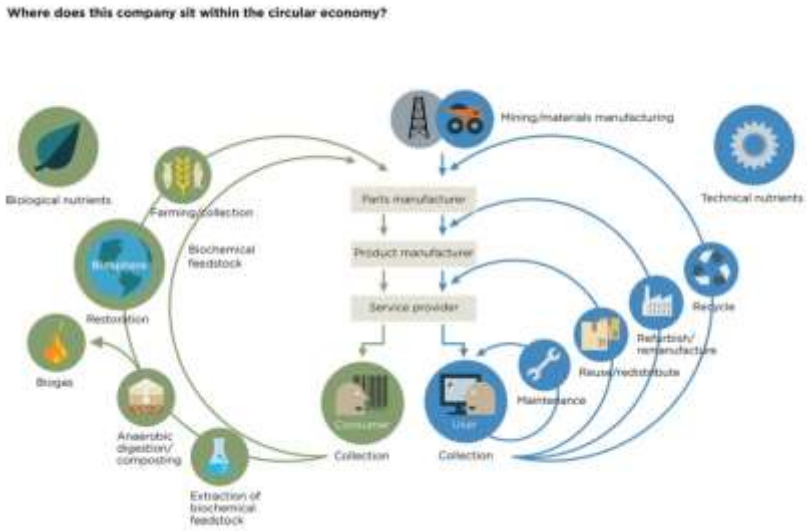
In consultation with the market parties, we chose a price/quality ratio of 30/70, in which the number of points for price was calculated on the basis of the net present value method. The offer with the lowest total cost of ownership (TCO) was given the maximum number of 30 points. However, the offer with the best circular qualities did not automatically get the maximum number of points for quality, which resulted in the price having too much of an impact. Looking back, we should have thought more carefully about a good weighting method and should also have tested this with a test calculation.

5.1 Award sub-criteria

The circular award sub-criteria were divided into a 'sustainability' part and a 'user value' part. This was drawn up as much as possible on the basis of the existing guidelines from the Ellen MacArthur Foundation and the framework '6R' based on Lie, 2010 (provided by Jan Henk Welink from TU Delft).

[3] See http://www.pianoo.nl/sites/default/files/documents/gerelateerd/volledige_criteriadocument_kantoormeubilair.pdf and http://www.pianoo.nl/sites/default/files/documents/gerelateerd/volledige_criteriadocument_kantoorstoffering.pdf

The guidelines from the Ellen MacArthur Foundation, which offer a framework for the entire circular economy:



The '6R' framework, which primarily focuses on high value re-use within the technical cycle. Figure 7

Figure 6, Ellen MacArthur Foundation framework

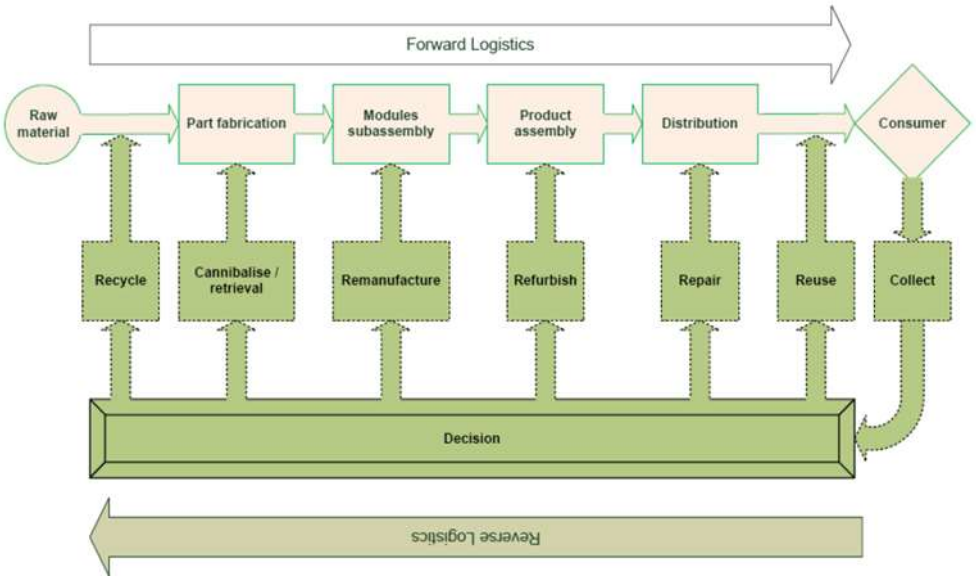


Figure 7, the "6R" and reverse logistics (Lie, 2010: graduation project at the Erasmus University under Prof. Rommert Dekker and Dr Erwin van der Laan).

1. **Re-use**: re-use of products; for example via *Rijksmarktplaats*[4]. This is no longer an option for products that have gone through the entire guaranteed technical and economic lifespan. Examples could include products such as coffee machines. For other products in which the technical lifespan does exceed the economic or contract-lifespan, re-use can be a lucrative option that saves resources. Examples could include cabinets and office tables.

[4] An online marketplace for used government office furniture provided for free for other government use.

2. **R**epair: can components be ordered? Are components standardised to make this easy? For some products, repair is included in the service contract. Is the product taken back by the producer (or third party) for a second life?

3. **R**efurbish: reupholstering, repackaging or "updating" by cleaning or renewing (fashion, styling). For coffee machines, this can for example be done by installing a new front panel. There is a grey area between refurbishment and repair. Refurbishment and repair can be part of a service contract.

4. **R**emanufacturing: "re-production": re-use of components. This involves the product being taken back to be completely disassembled and put back together with some new parts. In most cases, this involves products that are taken back by the producer, which reassembles them himself.

5. **R**etrieval: this involves components or some materials being recovered for re-use. The term "scavenging" is also used for this. A example is auto wrecking in which parts get a second life. It has long been common in agricultural equipment and excavators to overhaul old engines and to use them in new vehicles.

6. **R**ecycle: Material re-use. Examples include melting down scrap into new steel or melting down recovered plastic into new plastic granules that are used by injection molding machines to make new plastic products.

We formulated award sub-criteria based of these two frameworks.
Our award sub-criteria for **sustainability:**

- Design: Raw materials used
  - Recycled materials (as % of the weight per product)
  - Biobased resources (as % of the weight per product)
  - Critical materials
  - Toxic substances in the products
- Design: possibilities for high value re-use (to what extent was it considered in the product design to bring the product, components and materials at the end of the lifespan back into the material cycle; description using the terms from '6R'
- Production: CO_2 footprint and use of renewable energy
- Measures to extend the lifespan: a SMART description of measures that are taken to optimise the lifespan of the products, addressing the 'first three terms' from the 6R: Re-use, Repair and Refurbishment. It is also necessary to look at how the supplier will oversee the future high value re-use, even after the contract with ProRail. An indication must also be given of how the measures taken will be reported in the annual meeting with the contract manager.
- Measures for high value re-use after the end of the lifespan: A SMART description of how the supplier provides high value re-use after the lifespan of the products has ended, which goes into the last three terms from the 6R: Remanufacturing, Retrieval and Recycling. Here too, the supplier must explain how it will oversee the future high value re-use, even after the contract with ProRail ends. The supplier must also give an indication of how the measures taken will be reported in the annual meeting with the contract manager.
- Long term plans and vision of the organisation for circular operational management.

Our award sub-criteria about **circular utility value**:

- Guaranteeing the desired quality level based on NEN2767 quality level B mentioned above.
- The warranty.
- Possibilities to modify the appearance (for example colour selection) of the product during the term of the contract.
- Possibilities to modify the length of the use period.
- Unique product characteristics.

6 Offers and assessment

'The proof of the pudding is in the eating': As we have said, we spent a lot of time on focusing the call for bids further together with the suppliers. However, only the actual offers really showed whether this way of calling for bids actually leads to the most circular possible offers. A point by point summary is given below of how parties reacted to the specifications and what lessons we were able to take from this.

General

- Clear definitions for many terms are not yet available. For example, what do we understand by 'critical materials', where are the boundaries between the terms upcycling, recycling and downcycling?
- It was (and still is) unclear what elements of circular procurement are more important than others. For example: is circular design just as important as actual high value re-use? Is a long lifespan better or worse than great options for high value re-use, for example a long lifespan but no/limited re-use versus short lifespan and many options for high value re-use?

Design: raw materials used

- We only asked for insight into the amounts of recycled materials used, critical materials, etc. All the parties gave insight into this; we had to give everyone the maximum number of points.

Tips:

- Formulate the criteria more qualitatively, for example: the more recycled content, the better.
- Investigate the options to request a 'product passport' to gain insight into the materials used and the extent to which the product has a modular construction.
- Think more consciously about how you want to deal with the theme of biomaterials. A metal chair is 0% biobased but can be fully circular. This means that a criterion like 'the more biobased materials the better' can miss the point.
- We did not sufficiently think about what exactly we mean by critical materials. Nor did the suppliers ask any questions about this. An EU overview could provide a solution regarding critical raw materials.[5]
- The term 'toxic substances' also needs to be defined more precisely.
- Think more carefully about how you can check the data provided.

Design: possibilities for high value re-use

- A number of suppliers had difficulty providing a SMART description that addresses the question of the extent to which their products are designed for future re-use in terms of 6R. They often referred to existing brochures or certificates. Nevertheless, this was found to be an interesting criterion, which could possibly be focused more.

Tips:

- Investigate the possibilities of adopting parts of the Cradle to Cradle certificate.
- Investigate how you can work out the concept of 'modular design'.
- Another issue is the ability to monitor this.
- Make a distinction between upcycling, recycling and downcycling.

Production: CO_2 footprint and use of renewable energy

- We only requested information on the CO_2 footprint and using renewable energy in this regard. The offers contain complex and extensive overviews of emissions, etc. that could not be assessed properly by laypeople.

[5] http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm

Tips:

- Choose a qualitative assessment: the lower the CO_2 footprint, the better.
- Bring in an emissions expert who can assess the offers.

Measures for extending the lifespan

- Market parties had difficulty describing the measures they concretely take to extend the lifespan of products, especially in combination with maintaining the quality level stated in the NEN2767 standard, which was new for many parties. The standard is still open to various interpretations. What is quality B in the eyes of the supplier, could already be quality level C for the contractor. How do you make agreements with regard to quality audits, etc.? And what do you do in case of a conflict about the quality level?
- Many market parties also remain vague about measures to extend the lifespan after the contract expires. What do they do with the products that are still in excellent condition (quality level B = management level)? The furniture will probably be resold. But what happens with it after that? Haven't we just built in one more step before the products still land on the scrap heap abroad somewhere?
- None of the parties went into the questions surrounding 'overseeing re-use', also not in future cycles.
- None of the parties went into the question of how they will report on extending the lifespan to the contract manager.

Tips:

- Consider including certain aspects as a hard requirement instead of in a subaward criterion, such as the description of overseeing re-use or about how the supplier will report to the contract manager each year. This prevents market parties failing to provide the details for certain components. The quality of these descriptions can still be assessed later in a subaward criterion.
- In a future pilot, think carefully about how you can obtain more certainty about what the supplier does with products, components and materials in subsequent cycles (2^{nd}, 3^{rd}... user). We were not able to gain insight into this in this pilot.

Measures for high value re-use after the end of the lifespan

- The same points as listed under 'measures for extending lifespan' also apply here. A number of parties remain vague about the measures that they will take. An argument we heard often is that we can't predict how technology will progress in a number of years: perhaps much better forms of re-use will be possible than are currently available.
- None of the tendering parties indicated how they will handle oversight on re-use and annual reporting to the contract manager.

Tips:

- In the same way as for the previous point: include the descriptions in a requirement.
- What makes this subaward criterion extra complex is the fact that most high value re-use only occurs after the contract has ended. The possibilities to control the supplier as a purchaser after that seem to be very limited. This issue is one of the bigger questions that remains unanswered in the pilot.

The organisation's long term plans and vision for circular operational management

- A number of parties were able to make clear and ambitious plans about this. However, they did sometimes refer to brochures in the appendix instead of writing a piece with highlights relevant to the call for bids. A number did not reach a concrete vision for circular operational management. This resulted in a lower score.

Tips:

- Adopt a requirement and/or award criterion on how the supplier responds to new innovative circular developments during the term of the contract.

Guaranteeing the desired quality level

- The request for this quality level based on NEN 2767 did not lead to problems in the offers for floor covering. For the furniture, guaranteeing this quality level is a more difficult point, for instance because much of the furniture to be supplied was 'special work', which was often also supplied by third parties (i.e. furniture not from their own factory and interior design). This emerged from the fact that ProRail re-uses its own standard furniture (desk + chair). This made the call for bids very heterogeneous and few basic items of furniture remained. It was difficult for the bidding party to give guarantees about the quality level of products from third parties, especially over such a long contract duration. For example, will such a third party still exist in ten years?
- At the same time, the bidding party gave little response to the question of whether they wanted to take the furniture back to re-use the materials, even if the furniture was still at quality level B. Collecting furniture and finding a new use leads to extra costs, and it appears that the bidding parties do not expect to do this.
- There is a major difference between furniture that lasts for 10 years, such as a standard workstation, and fragile acoustic slats. The result of this is that the bidding party prefers not to issue warranties on the slats, or if they do give a warranty in the maintenance component, they provide the total replacement of the slats. The risk profile that this is based on misses the circular concept. Totally replacing something instead of maintaining it so that this is not necessary is something completely different.
- There was a discussion about clustering various product groups and determining the contractual quality level according to this. In the end, this idea was not further developed and one maintenance amount was given for the entire product range.

Tips:

- Take the time to work with the market parties to understand what guaranteeing a certain quality level means in actual practice. The NEN standard provides a reference, but it does leave room for miscommunication. Do we have the same image of what is understood by a certain quality level? How are we going to audit the quality level? What are we going to do if we have a conflict about the quality level?
- Consider making a distinction between a supplier's own products and custom work and specials from secondary suppliers. Suppliers seem to give guarantees on maintaining the quality level much more easily for their own products.

The warranty

- The question can be asked about what a 'warranty' means in a service contract in which agreements are made about maintaining a certain quality level. In any case, there is a difference between a warranty on the technical lifespan (does the furniture still function) and presentability (how does the furniture look, guaranteed in this pilot with the NEN standard and the required quality level B).
- The warranty should give an idea of the expected lifespan of the product.

Possibilities to modify the appearance (for example colour selection) of the product during the term of the contract.

- The reason this was specified is that there are ongoing developments in the field of the new way of working. The flexibility to have the furniture continue to fit with the current trends is worth a lot. The subject of flexibility came up again in every dialogue round. The bidding parties indicated that there are countless possibilities; however they leave the costs out of it because these depend completely on the change to be made and the moment at which this occurs during the contract.
- For example, exchanging 5% of the product portfolio was not up for discussion with the bidding party either.

Tips:

- Explicitly state that modifications need to fit within the budget, or include that the cost implications of everything need to be specified. It can then be decided to make a sample case in which the units to be discounted are worked out, so that the bidding party can discount them (compare apples with apples). The risk is that only the bidding party takes the example in order to limit the return.
- Stipulate the requirement beforehand that 5% of the product range can be exchanged or returned. Make what must be possible at what time very clear in the contract. Giving examples can lead to limitations for the return.

Possibilities to modify the use period

- A number of parties gave good input to this; others indicate that it is possible, but with unclear additional costs.
- The form of financing was often linked to the use period. For instance, there are parties that work with an intermediary, such as the Lage Landen, which also places limitations on the use period, for example a maximum contract term of 7 years in case of a lease.

Tips:

- Think carefully about how you can gain insight into the financial consequences.
- For instance not every party can offer a lease for every possible contract duration. Therefore if you only ask for lease forms, this can lead to exclusions.

Unique product characteristics

- The market parties did not have any difficulty in giving good details for this (for example carpet tiles that absorb dust). However, these criteria have no relation with circularity.

TCO

- In consultation with market parties we chose a price/quality ratio of 30/70. Ultimately, the price was still decisive in awarding the floor covering contract. Looking back, we should have thought more carefully about a good weighting method and should also have tested this with a test calculation to put the focus more on quality/circularity.

- The price ceiling for the purchase value of the products was also made known. We did not have an overview of the maintenance costs, which made it difficult to assess whether the bidders would come out high above that amount. To reduce this risk, we chose to use the 30% price anyway.

Tips:

- Consider making your budget known and weight the assessment in favour of quality. Make sure you also have insight into the maintenance component and add this to your total budget.

Differences between circular and traditional offers

For floor covering, the suppliers did not distinguish between the circular and the traditional offers. Costs and services were the same in both variants offered. They did make a distinction for the office furniture, which led to a cheaper TCO for the traditional offer. The cost difference was primarily due to the selection of cheaper and less durable furniture in the non-circular variant. However, the costs of maintaining quality level B for 10 years were not initially calculated or included. These costs were worked out later, which added another €88,000 for 10 years. These costs were not included in the traditional variant, as a result of which it came out to be clearly cheaper, although the furniture would no longer be at quality level B after 10 years and no further maintenance work was done. In the pilot, it was further not worked out whether the maintenance costs for the traditional variant would be just as high as for the circular variant.

6. Evaluation

After the contract was awarded, we held evaluation discussions with all the bidding parties. The insights from these evaluations are given in the chapter on General Considerations (chapter 9).

6.1 Signing Green Deal on Circular Procurement

As a finishing touch to the ProRail team's work, the Green Deal on Circular Procurement was signed on 17 July 2014 by Hans Fleer, Facilities Services manager at ProRail.

Figure 8, Signing Green Deal, from right to left; Cynthia van der Horst, Hans Fleer, Arnaud Brands, Geerke Versteeg, Willeke Steenks

7 Contract phase

The contract discussions began in August 2014. Normally, ProRail sends a draft agreement or contract together with the tender documents directly. This did not happen this time, because ProRail didn't know what needed to be in it yet. Converting the call for bids, offers, dialogue rounds and evaluations into a contract requires careful listening and trying to understand each other.

7.1 Drawing up the floor covering contract

Our procurement department supported the team in the contract phase; it drew up a draft agreement. One of the market parties also drew up a draft agreement. A brainstorm session with experts was organised to combine the two versions. The following questions came up during this session:

- Is it a contract? Or more a use agreement?
- Can you stipulate that the market party retains ownership if you don't use a lease construction?
- As a client, can you require the party to oversee the supply chain, even after a 2nd and 3rd user?
- How do we provide the flexibility that ProRail expects ?
- How do we guarantee that we have the option of continuing to use the products after 10 years?
- We do not want a lease construction because we do not want an intermediary and can lend more cheaply ourselves, but we do want to keep control elements to continue to adjust according to the KPIs. The market party does not want to prefinance too much. What payment schedule is satisfactory to both parties?

After the brainstorm session and the subsequent discussions with the bidding party for floor covering, we included the following decisions in the agreement:

- We will make it a use agreement.
- ProRail is the legal owner because the floor covering is attached to the property; the bidding party is the economic owner.
- Overseeing the supply chain after a 2rd and 3nd user is included in a KPI dashboard (see appendix 3 for an example). However, for floor covering, Desso uses the technique of taking the whole tile apart directly and producing a new one from it. In this supply chain, there is therefore no 2nd or 3rd user that re-uses the tiles. However, we have included in the user agreement that the best technology available at that time must be used, and that the possibility of re-use must be investigated first.
- Flexibility is therefore limited in this pilot and is only included in the user agreement to a limited extent. See also chapter 6 about the possibilities of modifying the appearance of the product (for example colour selection) during the term of the contract.
- To ensure that ProRail still has rights to the products after 10 years, we included the following section in the user agreement:

  'After 10 years, ProRail will decide whether the products supplied will be re-used within or outside ProRail.

  After 10 years, ProRail shall be free to choose to continue the existing contract on the basis of a new cost statement for the service to be provided, or to use the products elsewhere. Should ProRail decide to use the products again within ProRail, any costs of this will be at ProRail's expense. The maintenance programme will also need to be reassessed.

  If ProRail decides not to use the products again within ProRail, Contractor shall re-use them in a high value and environmentally responsible way according to the principles of the circular economy or according to the best alternative available at that time, which is at least equivalent to the Take Back programme.

Desso will re-use the products in a high value way by first investigating the possibilities for a Re-use programme before switching to the Take-back programme. The costs of this shall be at Desso's expense.

Contractor commits to implement and to consider how to oversee this or ensure that there is oversight over the high value re-use of the products and raw materials in this contract by all future users.

Obligations that by their nature are intended to continue even after the end of the Contract, remain in force after the end of the Contract.'

We use a KPI dashboard to control this. In this way, we safeguard and monitor the agreements in the contract. We can defer a payment using a payment schedule if the contractor does not keep the product at the agreed quality level. However, the first instalment is higher than the others to avoid the bidding party having to prefinance too much. Otherwise, ProRail would have to switch to a lease construction.

Other components of the user agreement for floor covering are:

- Tender specification including all the appendices, including the Information Notice
- Terms and conditions of purchase
- Installation and removal of the carpet
- Maintenance programme, for which the contractor also sets requirements for ProRail's daily cleaning service
- Payment schedule
- KPIs containing the agreements from the use agreement such as quality level B, the response and repair times, and also that the party shares its knowledge in the field of circular economy and the developments in that field with ProRail and that they demonstrate to ProRail that they research/develop the best applicable options to re-use the products in a circular way.
- Original offer

The use agreement also describes the complaint procedure, the response and repair times, the communication matrix, invoicing and which management reports must be supplied. At the same time, the contractor supplies a management report to the client 4 times per year containing their maintenance findings. The client organises an audit twice per year in which it tests whether quality level B has been achieved. The client discusses the report of this audit together with the contractor.

7.2 Drawing up furniture contract

For the furniture pilot, we held extra discussions to negotiate a use agreement that would be based on the contract for furniture. As indicated in chapter 6, there was not initially an overview or calculation of the costs of maintaining quality level B for 10 years. These costs were worked out later, which added €88,000 over 10 years. The specification of the maintenance costs shows that some items were replaced in full. After the discussions, ProRail did not have the feeling that the parties had the same goal in the contract, namely reducing resource consumption.

ProRail chose not to conclude a contract for 10 years. Given the pressure of the project it was decided to purchase very circular furniture in a one-time investment. ProRail will work with the bidding party to investigate the extent to which ProRail can perform maintenance to extend the lifespan itself.
Interesting question: is this a problem? As a contracting authority, you have every freedom (and control) to choose a solution in the future in which the furniture can be re-used with the highest value possible. Why should you necessarily make agreements about this when entering the contract?

This gives peace of mind, but might also limit the possibilities for re-use because it is currently not yet possible to adequately estimate whether suppliers will actually take the steps to modify their business processes to fit into the circular economy.

ProRail also added the following sections to the contract letter:

- Each year, the parties shall consult about the condition of the furniture and they will draw up a plan for maintenance to keep the furniture at quality level B.
- After the use period, ProRail has the option of having the products supplied by the bidding party removed by them for re-use and lifespan extension.

7.3 Delivery

The use agreement for floor covering was signed on 24 November 2014. See also figure 9.
The deliveries were made in December 2014, January and February 2015.
The Utrecht traffic control centre was successfully migrated and became operational in the night of 10 to 11 April 2015.

Figure 9, signing ProRail's first circular contract

8 Circular railway

ProRail also apply the circular philosophy in ProRail's primary process. They work together with five parties (Royal HaskoningDHV, ProRail, Asset Rail, Railpro, BAM) to investigate things like whether it is possible to re-use ballast or rails, for example. These parties also drew up a whitepaper together with TNO entitled '*Visie op de circulaire economie voor de spoorsector*' [Vision on the circular economy for the railway sector]. This can be downloaded here.

They research the possibility of reducing resource consumption on the subjects in figure 10 below.

Contact wire

Ballast

Switches

Figure 10, Circular railway subjects

The model that they use will be very valuable for future pilots. ProRail Facilities Services is looking at whether it can adapt this model to make it universally applicable. This model is shown in figure 11. ProRail is also investigating whether it can place the subject of circular economy on its suppliers' agenda via the CO_2 performance ladder.

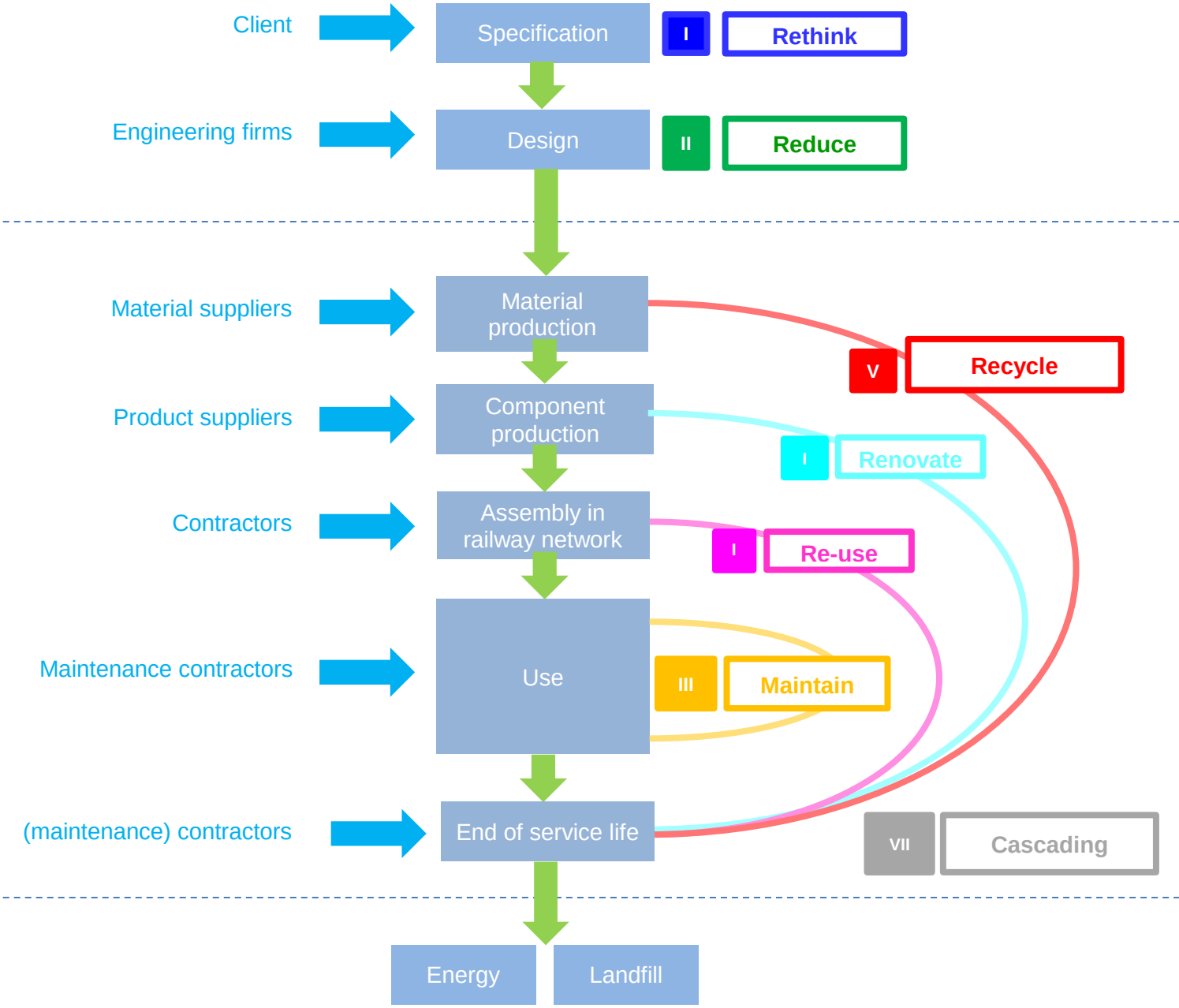


Figure 11, model for circular procurement designed by Royal HaskoningDHV, ProRail, Asset Rail, Railpro, BAM

9 General discussion

9.1 General circular economy

Development of the circular economy
It will take decades before the circular economy is well established with the associated logistics. This broad realisation of the circular economy in the Netherlands and beyond is a precondition for 'true' circular procurement in many areas. For example, if companies barely have any place in their operational management to re-use products, materials and parts, you can include this as a criterion, but companies will not be able to meet this demand in the near future. The supposed cost savings provided by circular procurement also seem to be some way off: because companies see risks everywhere, circular procurement is more likely to entail higher prices, it is difficult to arrange financing (high interest rates), and if full circular operational management has not yet been implemented, it will not be possible to retain value in materials. Because we are still in pilot projects, these are merely first hints: the question is how we can use procurement to get companies to make structural changes to their operational management.

Scale increase
To continue from the previous point: scale increase is crucial. It is almost impossible to collect products and to store them separately for one pilot project. There is not yet an adequate market or network for the re-use of products.

However, companies (suppliers) indicate that they are also looking at the circular economy in depth. That is why they are prepared to spend a lot of extra time and attention into this and other circular pilots as part of the learning process. They see future business opportunities in it.

Circular products and trends
The office market is strongly affected by trends and social developments. For example, we could be looking at working from home very differently 5 years from now. It is difficult to make long term agreements about this. You don't really want to commit yourself for 10 years, although this is what we are doing (of course, this applies more broadly than just for circular).

An interesting point that also comes up is that the circular economy primarily focuses on extending the technical lifespan. This is at odds with taste, trends, etc. From a circular standpoint, you would want everyone to use the same chair and the same grey carpet tiles.

Difference with traditional procurement
It is interesting to know how circular procurement differs from 'traditional procurement'. But what is traditional procurement? We did not give this enough thought. Provisional solution: the same specifications, but without circular criteria and with the minimum requirements for sustainable purchasing.

9.2 Costs and risks

The costs and risks that emerged from the pilot are discussed below.

Costs

- Circular and cradle to cradle products often come with a higher price tag.
- When you use more expensive 'classics', the purchase price is high, but so is the residual value. It is up to the suppliers to weigh these factors themselves. Not every party is able to do so. Wanting to satisfy the client too much plays a role in this.
- One of the upholstery suppliers recently had two failed circular tenders. The price was a particular issue in this. The expectation was that circular would also be cheaper.
- Due to the extra risks attached to circular concepts, suppliers build in a safety margin, which leads to higher costs. This can be compared to a performance based contract in construction. This also has a risk margin built in.

Risks

- Various risks end up being borne by the supplier. It costs money to include these risks in a circular concept. Examples of this include:
    - What is the residual value of a product?
    - Continued existence of third parties. It is a difficult time for interior builders. Who says that they will still exist in 10 years?
    - Risks regarding the quality of a product (especially applies to third-party products)
    - It is very difficult to make predictions about the residual value of products, parts and materials 10 years from now. However, as a supplier you will have to make estimates in order to be able to make a bid or to agree that the residual value will be determined after the use period.
    - With regard to the possibilities for re-use and high-value recycling of used carpet tiles, the suppliers have to receive an advance on future developments. This constitutes a risk.

9.3 Business model and contract forms

Business model/contract forms

- At first glance, a lease looks like the obvious choice, but this often turns out to be much more expensive due to the high interest rates charged by the banks.
- The contracting authority must carefully investigate the options to actually be able to implement the different contract forms beforehand. For example, is there room in the budget to pay every month rather than at one time?
- In circular or lease constructions, suppliers often use a third party (the financier) with whom the client enters the contract. 'De Lage Landen' is the bank that keeps popping up when it comes to leasing. The contracts that they provide have a maximum term of 7 years.
- One of the suppliers indicated that leases for a period longer than 10 years do not actually exist in the private sector.
- Leasing is not economical for many governments because they can get a much lower interest rate (about 2-3%) than many market parties (about 5-7%). This makes leasing expensive for governments. A construction such as a buy back agreement is usually more financially attractive.
- One of the upholsterers indicated that external financiers assume the residual value of the floor tiles to be 0 as soon as the tiles are laid, while there actually is a residual value if you choose to re-use them, for example. The bank uses another, less profitable business model than the circular supplier, which increases the costs of prefinancing. This seems to be less of a problem with tables and chairs.

- The number of variants of contract forms that the suppliers could offer was initially intended to be unlimited in order to learn as much as possible. In the end, we asked for one traditional variant and two variants for the circular bids. However, in the bids received, suppliers only made one circular and one traditional bid.

Term of the contract

- For a term of 5 years, you get a different type of bid than for 10 years. For example after 5 years, the chairs still have a high residual value and they can easily be sold on the second hand market. There is then a high chance that the supplier bets on 'classics' that have a good chance of having a high residual value. With a term of 10 years, the supplier will probably assume that the chair will be completely written off and will probably offer a chair that is suitable for remanufacturing (planned re-use of material and parts). Too short a term also means that there is no chance of forming the partnership that is necessary. The recommendation would be to enter into a contract for at least 5 years.

9.4 Specific points of attention for circular furniture and floor covering

Points of attention for furniture

Standard products from the supplier (chairs, etc.) can be re-used much more easily than interior fittings (custom made products). It is much more difficult to find a new customer for interior fittings. However, the materials can be re-used (resource).

In this pilot, we decided not to include the look and feel of the products in the assessment of the tender, so that the project team could fully concentrate on the degree of 'circularity' of the different bids. This resulted in the interior architect taking on the role of 'gatekeeper' where the suppliers had to obtain approval for the look and feel of their bid before they could submit their final offer to the project team. This hindered the suppliers' freedom to make the best possible circular offer.

This could have been organised differently/better as follows:

- Including look & feel in the assessment after all, no prior check by the architect;
- Having the interior architect take part in the project team: then including the entire project team in the check and choices for look & feel;
- Communicating interior choices properly transparently during the process by means of information notices;
- Emphasising more clearly that it is only about the look & feel and that the suppliers have the freedom to present other products or to make construction proposals, for example for the acoustic slats (as a result of which you are not stuck with one supplier);
- Having the interior architect write the statement of requirements at the product level, e.g.: chair with shell, round legs and open back. It is then more interesting for the architect to see what you are offered and whether this fits within the look & feel.

Points of attention for floor covering:

- Suppliers of resources/materials are more distant in the supply chain and sometimes do not want to specify the substances used for floor covering producers.
- Some suppliers primarily invest in cradle to cradle designed floor covering (the 'front-end' of the chain), while others pay more attention to re-use and other high-value recycling of floor covering (the cycles in the supply chain).
- Carpet tiles basically consist of two components:
    - Backing: This is often made of bitumen. There are also 'circular' variants made of polyolefins.
    - Thread: this can easily be recycled into new thread.

- There are various possibilities to reduce contamination/staining of floor covering. Examples could include a mat at Ecobins (Ecosmart waste bins) or adjusting the coffee machine (slightly less coffee in the cups to prevent spilling).
- In particular, the casters of office chairs cause wear.
- About 50-55% of the floor covering is actually used. 35% of the floor covering is practically never walked on.
- The 'new way of working' means the furnishings are used more intensively, and therefore the furnishings wear more quickly.
- 70% of dirt on carpet comes from outside. Good provisions to keep the dirt out can significantly improve the quality of the carpet (and reduce the cleaning effort required). For example, one of the requirements for the client is that the entrance meets the VSR [Association for Cleaning Research] directives for doormats. This entails that there is a sunken dirt-catching zone across the full width outside every exterior entrance door at least 1.5 metres long and that there is an entrance mat inside every entrance at least 6 metres long.
- During the lifespan of a building, the office furnishings are replaced about 8 times.
- Part of the full-service contract also involves instructing and guiding the cleaning company to clean the floor covering correctly every day.
- Desso has developed a collection system ("Infinity") for carpet tiles/carpet that is separate from the sale of new carpet products (together with Van Gansewinkel in the Netherlands). The backing and threads can be taken apart easily.
    - At present, this primarily concerns older carpet tiles with a bitumen backing. The bitumen is recycled and sold to the asphalt industry. The threads are suitable for re-use in new carpet tiles.
    - Carpet tiles from other manufacturers can also be collected and recycled.
    - Removal and reprocessing is slightly cheaper than the process in which the tiles end up in the incinerator.
    - Desso receives an amount from the disposer for the removal and processing, which currently covers most of the costs. In a few years, the system will have to start producing profits.
- Desso offers the "Eco Tile" concept which includes installation, periodic cleaning, removal and putting the product back into the cycle. This also includes a C2C tile.
- Desso has outsourced periodic carpet cleaning (about 2x/year) to Progenta and Duofort.
- According to Interface, the circular aspect primarily lies in the re-use of tiles (re-entry programme).
    - There are more possibilities for re-use with "random" patterns (colour differences do not matter as much) and tiles than with "linear designs".
    - Interface can "reshuffle" and clean tiles for re-use.
    - Interface has the removed tiles sorted by a social employment company in Veenendaal. Good tiles can be re-used after cleaning. Tiles in worse condition are recycled.
- Interface recycling:
    - The tiles can be 100% taken apart. Both the backing and the thread can be 98% recycled.
        - The threads are used for new carpet tiles (returned to thread supplier).
        - The bitumen from the backing is sold to KWS for asphalt production.
    - Interface has its own machine to process the carpet tiles.
- Interface: Thread made of 100% recycled material can be supplied. Fully biobased is also possible. The backing consists of 60% recycled material.
- Interface can also supply carpet tiles to ProRail from the re-entry programme (this is also cheap, but the selection is limited).
- Desso does not have a bitumen backing, appears to be a somewhat more 'circular/sustainable' design. At Interface, the bitumen backing goes to the asphalt industry (downcycling).

- Interface offers a full-service contract to keep the quality of the carpet tiles at an adequate level for 10 years. An upholsterer (installation), Interface (product), cleaning company (periodic cleaning 2x/year) and an independent monitoring party (quality measurement) are involved in this.

Appendix 1 Report of first market meeting

11 April 2013:

The morning kicks off with a short introduction by Joan Prummel about his work as a quartermaster for raw materials in the Dutch government. He starts projects and studies in different procurement categories to learn and experience what the opportunities and possibilities are for resource management and the circular economy in the government's operational management.

After this, Geerke Versteeg, facility services project leader at ProRail, uses a PowerPoint presentation to give a picture of the New Traffic Control Centre Utrecht (NVLU) to be built. The pilot focuses on furnishing the rooms according to the principles of the 'circular economy'. An important criterion for this is that the pilot will in any case have to be cost-neutral (compared to 'traditional' furnishings and call for bids).

Ruben van Doorn then gives a presentation to explain the TurnToo concept. The TurnToo philosophy is that circular business models get going more quickly and better if the supplier or producer remains the owner of their product, and therefore the raw materials. The user buys services: light instead of a lamp, washes instead of a washing machine.

After a short break, the market parties attending have the opportunity to share their visions and possibilities on the subject of the circular economy and this pilot with the room in a short presentation.

The PowerPoint presentation of this market meeting can be requested from Geerke Versteeg. Here are some interesting points that cannot be found in the PowerPoint presentations:

- Regarding resources, the following is important in this pilot:
    - Is the product recyclable ('promise' to re-use it later in a high-value application)?
    - Are recycled materials/components/products used (during performance of the contract)?
- For floor covering, it is important to ask about the type of thread (made of recycled material? From a renewable source such as bioplastic?) and how the fabric is laid (e.g. glue makes the product much more difficult to recycle)
- As a contracting authority, state your sustainability target concretely. 'Sustainable' is too intangible.
- Decisions about colours, texture, etc. have a direct impact on sustainability. E.g. a canary yellow floor will need to be cleaned much more often, which results in a greater environmental impact.
- Interface has already developed contract forms that fit into the circular economy. For example 'I owe you (IOU?)', a sort of monetary deposit system for floor tiles. In another model, Interface remains the actual owner of the floor tiles and the customer is guaranteed a certain quality level of the office furnishings.
- Be careful about using catch-all terms like 'social return' or 'waste management' in tenders without the government having thought carefully about what they actually want to achieve with it, while expecting the market to get to work on it to solve or help solve a certain social problem for the government.

- Steelcase is currently working on its first TurnToo project for office furnishings. This project has a term of ten years. Within such a project, a number of assumptions need to be made to arrive at a price. Perhaps the customer will want to own the furniture itself in ten years after all.
- The term of a contract of this type doesn't necessarily have to be ten years; it could also be shorter.
- When Joan Prummel asked about how Steelcase guarantees that it can provide high-value re-use of the furniture after the term of the contract, Steelcase answered that they can promise that they will re-use the furniture, but not how. This depends on the market situation in ten years and the technology available for high-value re-use at that time.
- At the moment, the value of materials from discarded furniture is much lower than the residual value of a complete product or a component.
- Refurbishing and modifying furniture are relatively expensive; often just as expensive as purchasing new furniture. Of course, from the standpoint of sustainability, refurbished furniture is much better.
- The costs of lease constructions vs. 'traditional' procurement of office furnishings will probably not be very different from each other.

Other relevant comments during the meeting:

- According to Interface, many tenders from the Dutch state still have very technical specifications and they have relatively low sustainability targets. The ambition level of local governments appears to be higher.
- The TurnToo approach can give governments a much better handle on their costs because a single price is agreed on for the total lifespan, including maintenance, removal, etc. According to Ruben, governments usually do not have a clear picture of the costs involved in use, maintenance and waste; in the TurnToo approach, these costs are directly visible for the entire term of the contract.
- In the US, sustainable furnishings can already count toward the LEED sustainability score of the total building. We aren't at that point yet in the Netherlands.
- Suppliers should be asked to be more involved within tenders; the client-contractor relationship should be less superficial. On the other hand, ProRail notes that suppliers often don't do well in their advisory role: 'we almost have to pull their contributions out of them'. However, there are also examples in which the dialogue between the market and government went well, e.g. the market research and consultation for the office furnishings of the JuBi towers. It should be like that more often. Joan Prummel indicates that the Dutch government wants to do much more service-oriented procurement in the future and to have much more dialogue with the market, in part following the advice of the organised business world about a better method of sustainable procurement.
- The interior architect Franke van den Broek indicates that she wants to give a lot of space for innovative and circular proposals. Circular is therefore an important subject within the pilot, but other aspects such as design and quality are also important. A well-considered balance will be made between all these aspects.
- Interface again emphasises the importance of describing the sustainability ambition clearly. The budget is also important. If the budget remains unknown, there is a chance that suppliers will make a very ambitious offer with a corresponding high price, which will then be rejected immediately due to that excessively high price. An interesting option could be to make the budget known and to challenge the market to make the most sustainable and 'circular' possible offer.

At the end of the knowledge exchange on Thursday, 11 April 2013, it was agreed that the suppliers present would give their vision and relevant examples in writing regarding the application of circular models to the possible furnishing of the Traffic Control Centre for ProRail in Utrecht. The following guiding questions were drawn up for this:

1. The circular economy is developing steadily. What is your vision of the effects of this within your industry?

2. A criterion for the circular economy is that products have a residual value after their initial use phase through re-use of the product and/or the materials it contains. What possibilities do you see for this residual value (in part) to benefit the user?

3. What contract forms can you offer to apply circular models (furniture and floor covering) in the Traffic Control Centre for ProRail? Do you have examples of them?

4. How does this look for the contract period (management and maintenance)?

5. What steps do we need to take to find a floor and furnishings in cooperation with the supplier and the interior architect that can be procured in a circular way?

And looking at the procurement process:

6. Do you have suggestions for how we should formulate the questions in a tender or procurement process to obtain circular models?

7. Calling for bids for things in a procurement process such that we obtain circular models leads to fewer ‘checklists' and more ‘stories and visions'. What are the best criteria for purchasers to use to assess your future tenders and offers to avoid comparing apples and oranges?

Appendix 2: The circular call for bids

Dear Sir/Madam,

You are invited to submit a bid for the supply of furniture for a new traffic control post that is to be built and the associated control room and offices. The traffic control post is located in the Cartesiusdriehoek, Bielsstraat 1 in Utrecht, the Netherlands.

1. Introduction

ProRail and the Directorate-General for Public Works and Water Management (Rijkswaterstaat) want to promote the circular economy. They are currently doing this in the form of various pilot projects. This tender is designated as one of these pilot projects. Royal HaskoningDHV is currently supporting ProRail and other government organisations with these pilot projects. In our previous contact, you indicated your interest in investigating and bidding on the circular variant and contributing to the development of the circular economy. It is therefore in your and ProRail's interest to actually agree on a supply of the furniture in a circular variant.

ProRail would like to receive an offer for this furniture to be supplied in a circular business model. ProRail also wants a traditional variant for comparison and as a backup in case of the undesired situation that supply in a circular variant is not agreed on. One of the objectives of the project is also to investigate what the differences are between circular and traditional offers. That is why it is necessary to make a good comparison between the two offers.

Ms Geerke Versteeg is ProRail's project leader for this call for bids. Her contact information is given at the top of this letter.

This letter and its appendices explain how we envision the application of the circular economy here and what the scope of the contract is, and contain a description of the selection procedure.

2. Circular economy

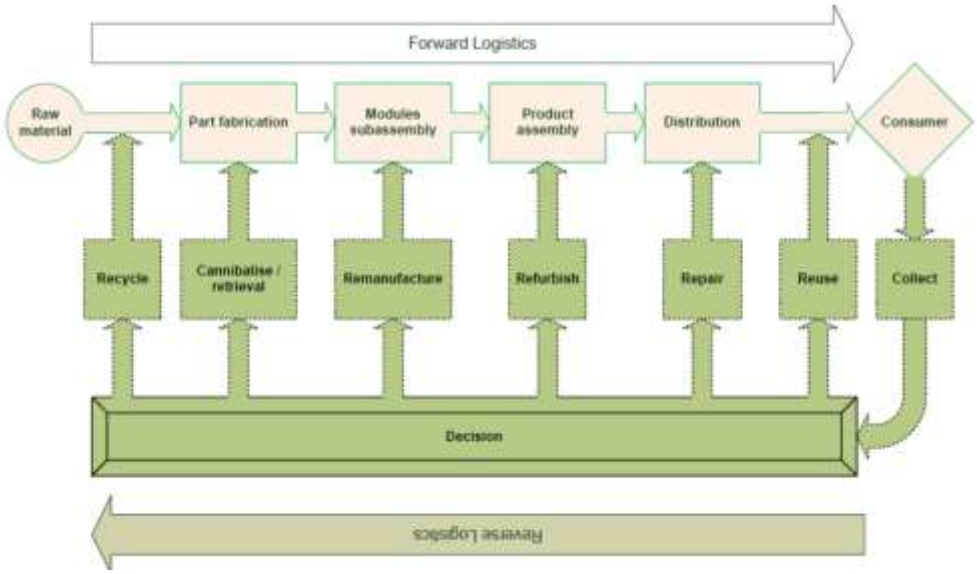
The circular economy is an economic system that is intended to maximise the reusability of products and materials. This avoids both economic and ecological value destruction in the overall system as much as possible. The transition to a circular economy is a systemic innovation. This process is still in its infancy. With this call for bids, ProRail wishes to gain experience in purchasing products in line with the principles of the circular economy.

The most important principles of the circular economy in this call for bids are:

1. Value retention is maximised by first looking at product re-use, then re-use of components, and lastly re-use of materials.
2. Products are designed and manufactured to avoid value destruction as much as possible at the end of the use phase (e.g. by being able to be disassembled or easily separated).
3. There are minimal emissions of harmful substances during production, use and processing of the product.
4. Customers pay for the use of products and not for ownership. The product goes back to the supplier at the end of its lifespan.
5. Because the performance of the product determines the value, it becomes important for the supplier to deliver the right quality.

6. One of the most important success factors is cooperation in the supply chain directed at creating additional value. The goal is not just to increase the economic value of all the companies in the supply chain, but also to increase the ecological and social value.

The “6R” terms are used in this call for bids to give substance to the concept of high-value re-use:



1. **Re-use**: re-use of products, for example via *Rijksmarktplaats*. This is no longer an option for products that have gone through the full guaranteed technical and economic lifespan. Examples could include products such as coffee machines. For other products in which the technical lifespan does exceed the economic or contract-lifespan, re-use can be a profitable option that saves resources.
Examples could include cabinets and office tables.

2. **Repair**: can components be ordered separately? Are components standardised to make this easy? For some products, repair is included in the service contract. Is the product taken back by the producer (or third party) for a second life?

3. **Refurbish**: reupholstering, reclothing or “updating” by cleaning or renewal (fashion, styling). For coffee machines, this can for example be done by installing a new front panel. There is a grey area between refurbishment and repair. Refurbishment and repair can be part of a service contract.

4. **Remanufacturing**: “re-making”: re-use of components. This involves the product being taken back to be completely disassembled and reassembled with some new parts. This usually involves products that are taken back by the producer, which does the reassembly itself.

5. **Retrieval**: this involves components or some materials being recovered for re-use. The term “scavenging” is also used for this. An example is auto wrecking in which parts are given a second life. It has long been common practice in agricultural equipment to overhaul old engines and to use them in new vehicles. The same is done with large excavator components.

6. **Recycle**: Material re-use. An example is melting down scrap metal into new steel. Another example is melting down recovered plastic into new plastic granules that are then used by injection moulding machines to make new plastic products.

Because this covers six possibilities, this is also referred to as “6R”.

This call for bids is explicitly seen as a first step toward circular operational management at ProRail. That is why this call for bids is regarded as a pilot. Because this pilot is too small in size and duration to have a far-reaching impact on our operational management, we see the added value of this pilot as an exercise for both ProRail and the tenderer or tenderers to gain experience with more circular operational management. Therefore, one of the goals of this call for bids is to gain information to be able to take further steps beyond this pilot. Subsequent pilot projects (at ProRail and other government organisations) will be able to build on the experience that is gained in this pilot. That is why good documentation of the experience gained during the process is important for both ProRail and the tenderer or tenderers.

In this call for bids, we ask the tenderer or tenderers to make an offer for a circular product as well as a comparable non-circular offer. This is intended to enable us to determine what circular operational management can provide, primarily with regard to “resource efficiency” and the financial component. More details about this are given in “5. Selection procedure” under “Award criteria” and “Assessment method”.

This call for bids assumes that ProRail will pay for the use of the products to be supplied. Maintaining the desired quality of the products during the use period is part of this call for bids and is the tenderer’s responsibility. The regular (daily) cleaning activities are not part of this call for bids. The tenderer is free to propose a suitable payment model between ProRail and the tenderer during the use period (e.g. a one-time amount, annual or monthly instalments or a combination). The planned use period is 10 years.

2. Scope of the contract

The scope of the contract with regard to the circular variant is explained on the one hand in terms of quantity and type of furniture requested and on the other in terms of the use period and maintenance and cleaning of the furniture required by ProRail. For the traditional variant, the scope of the contract only includes the normal delivery of the requested furniture.

The furniture requested and the minimal preconditions that the furniture must meet and the requirements for cleaning and maintenance are specified in more detail in the following documents that are included as appendices to this letter:

- Appendix 1: functional Statement of Requirements *(not appended)*
- Appendix 2: "supplier input on Look & Feel of furnishings" report *(not appended)*
- Appendix 2a: detail of acoustic slat in control room *(not appended)*
- Appendix 3: overview of numbers in New Traffic Control Post Utrecht (NVLU) inventory *(not appended)*
- Appendices 4a, 4b, 4c: Floor plans for ground floor, 2nd and 3rd floors of NVLU *(not appended)*
- Appendix 5: ProRail vision of the new way of working *(not appended)*
- Appendix 6: ProRail terms and conditions of purchase *(not appended)*
- Appendix 7: Schedule *(not appended)*
- Appendix 8: NPV calculation model based on the TCO
- Appendix 9: Requirements for implementation phase
- Appendix 10: Maintaining presentability of movable furnishings

3. Conditions

This call for bids is subject to ProRail's terms and conditions of purchase, version 2 (2009) (appendix 6). These terms and conditions of purchase are appended to this letter.

5. Selection procedure

The selection procedure is explained below from the perspective of overall procedure, award criteria, assessment method and award decision.

A. Procedure of the call for bids

The procedure of the call for bids includes a round of questions in which ProRail will give written clarification on the call for bids at your request. The procedure then provides for dialogue rounds to discuss the content. These dialogue rounds are included to discuss your development of the bid. The goal of these dialogues is to align your offer with ProRail's request. The agenda of the dialogues will be elaborated further in mutual consultation. The first dialogue is intended to work on the broad points, to be refined in the last dialogue. The schedule provides two dialogues. ProRail reserves the right to hold a third dialogue round if and insofar as this is desirable.

After the dialogues, you will work out your offer in more detail and submit it. The offers submitted will be assessed by ProRail, and ProRail will make an award decision on this basis. The NvI2 gives the schedule for this procedure.

B. Award criteria

The contract will be awarded on the basis of relevant circular and financial aspects. The circular aspect is split into sustainability and user value. The tenderer is asked to give details on the aspects that fall under sustainability and user value in the form of an action plan.

Award aspect	Description	Points

		distribution
Sustainability		
1. Design: raw materials used	Indicate what raw materials are used in four sample products, namely: Z02 padded visitor's chair, Z08 1 person concentration workplace, T10 meeting table, Z14, office armchair from the Look & Feel booklet that is included as appendix 2. In this, describe: - Recycled materials (as % of the weight per product)[6] - Biobased raw materials (as % of the weight per product)[7] - Critical materials (if they are used in the products delivered) [8] - Toxic substances in products[9]	9
2. Design: possibilities for high-value re-use	For the products supplied, describe the extent to which returning the product, components and materials to the material cycle at the highest possible value at the end of the product lifespan has already been taken into account in the product design. In this respect, refer to each of the 6R terms (for explanation see chapter 2). The more materials in your product are returned to the material cycle and the higher the value of this re-use (6R), the higher you will score. Try to describe this in detail. For example for recycling, describe how the recyclable raw materials in your finished product or products can be used: in a comparable product, in a lower value product (downcycling) or in a higher value product (upcycling).	9
3. Production: CO_2 and energy	Describe the CO_2 footprint of four sample products, namely: Z02 padded visitor's chair, Z08 1 person concentration workplace, T10 meeting table, Z14, office armchair from the Look & Feel booklet that is included as appendix 2. The scope of the CO_2 footprint is "cradle-to-gate". Also describe the use of renewable	4

[6] Recyclable materials are materials that are processed after the product is discarded for use in such a way that the materials can be re-used in a new product. Indicate whether the recyclable raw materials used in your product or products are to be used in a comparable product, a lower value product (downcycling), or a higher value product (upcycling).

[7] Biobased raw materials are those that come from living natural sources, or renewable biomass. This usually involves biomass from plants or trees. Indicate what biomass you use and how much is in your product (% weight).

[8] Critical materials are raw materials of which the availability is no longer a given. However, they are essential for the production of certain goods. For an overview of the critical materials, see Statistics Netherlands publication "Monitor Materiaalstromen" [material flows monitor] from 2013 Annex 5. Indicate whether your product contains critical materials and if possible, how much.

[9] Toxic substances are those that are harmful to organisms to a greater or lesser degree. Another word for toxic is poisonous.

	energy in the production process. Please state in the offer whether it will be possible to obtain an overview of the CO_2 footprint of the whole order after completion of the procurement project.	
4. Measures to extend the lifespan	Use SMART criteria as much as possible to indicate what measures you will take to optimise the lifespan of the products delivered during and, where possible, also after the use period at ProRail. You must describe here how you will address the following concepts from the circular economy (6R model, for explanation see chapter 2). - Re-use - Repair and maintenance - Refurbishment In this, describe the processes, management, assurance, registration and organisation (including after the use period at ProRail) by your company. Third parties may also be involved in this. You may also expect an effort from ProRail. Describe what you expect from ProRail to make this possible. Also indicate how you will report on the measures above during the annual meeting with the contract manager.	9
5. Measures for high-value re-use after end of lifespan	Use SMART criteria as much as possible to describe how you envision high-value re-use (of raw materials, materials and/or components) as of the end of the lifespan of the products you deliver (that can no longer be extended). This must include a description of how you address the following terms from the circular economy (6R model, explanation see chapter 2): - Remanufacturing - Retrieval - Recycling For Recycling, also indicate what part of the raw and finished materials retain their original quality and can be used 'as new' in the production process. In this, describe the processes, management, assurance, registration and organisation (including after the use period at ProRail) by your company. Third parties may also be involved in this. You may also expect an effort from ProRail. Describe what you expect from ProRail to make this possible. Also indicate how you will report on the measures above during the annual meeting with the contract	9

	manager.	
6. Your vision and plans regarding circular operational management	With this call for bids, ProRail aims to take a first step toward circular operational management. ProRail understands that the transition to a circular economy will not be achieved overnight. ProRail would like the assessment to include your efforts toward circular operational management and the circular developments that are created in this way. Describe your vision/strategy on making your operational management more 'circular'. Describe the additional possibilities that you expect to arise with regard to the products to be delivered to ProRail during the 10-year term of the contract. These extra possibilities will be discussed during the annual meeting with the contract manager.	4
User value		
1. Assuring desired quality level	The desired quality level of the product is described in the functional statement of requirements (FSoR). Describe how you will ensure that the product continues to meet the desired quality level during the use period. In this, describe quality inspections, response to ProRail notifications, maintenance and replacement.	6
2. Product warranty	State the warranty period for your product in years.	4
3. Flexibility of user wishes	Indicate the options to modify the appearance of the product (e.g. colour selection) during the intended use period of the product according to possible changes in user wishes within the available budget.	4
4. Flexibility of use period	The planned use period is 10 years. Indicate what the possibilities are to change the length of the use period during the use period (either longer or shorter). In this, describe the possible cost consequences in case of a change to the use period. To be able to calculate this, please use 8 years for a shortened use period (two years shorter) and 12 years for an extended use period (two years longer).	8
5. Unique product characteristics	Describe the unique characteristics of your product (not regarding circularity) that can increase the use value for ProRail. In this, describe the characteristics that have not yet been addressed in the aspects above or in the FSoR.	4

Costs		
1. Total Cost of Ownership (TCO)	Offers are assessed on the basis of the TCO for the planned use period. This includes all the costs of using the product during the use period while maintaining the desired quality level, not including regular cleaning work by a cleaning company. The tenderer may choose a desired payment schedule for the offer. This can be an amount upon commencement, monthly or annual instalments, or a combination. Describe the payment schedule with the corresponding amounts that you propose during the use period.	30

C. Assessment

ProRail will assess the completeness and soundness of the offer first and then check the offer against the preconditions. It is then evaluated on the basis of the award criteria. ProRail reserves the right to reject an offer if it is not or insufficiently complete or sound, or does not meet the specified minimum preconditions.

Assessing "circular" award criterion

The assessment of the "circular" award criterion is done by a committee of experts on the circular economy (incl. ProRail and consultants from the Government of the Netherlands and Royal HaskoningDHV). The members of this committee all assess the action plans submitted individually to prepare for their central discussion of the approaches submitted. In this central discussion, they then assess "the degree to which the proposed approach (which must include the aspects stated in the table) is circular".

In total, 70 points can be earned for the "circular" award criterion. Forty points can be earned for the aspect of "sustainability", and thirty for the aspect "user value". The table shows how these points can be collected per aspect per component. A report grade between 1 and 10 is assigned by the assessor to each circular aspect. The number of points with regard to the aspect in the table is then calculated as follows:

Number of points per aspect = report grade/10 x maximum number of points per aspect.

The total number of points is calculated by adding up the number of points earned on the different aspects. The maximum number of points (70) can be earned if a report grade of 10 is assigned on all the aspects.

In the central discussion, the committee finally determines a collective assessment per offer submitted. The report grades given for each component are compared with each other and the committee determines the final report grade per component (between 1 and 10). The total number of points on the "circular" award criterion is then calculated based on the report grades per component.

Assessing "cost" award criterion

The "cost" award criterion consists of the TCO during the use period of the product. Thirty points can be earned for "TCO".

The TCO is determined by calculating all the payments (excluding VAT) that are proposed by the tenderer using the "nett present value method" (NPV) back to time 0. This is the time of delivery and/or the start date of the use period. A discount rate of 5% is used.

The NPV calculations will be done by Royal HaskoningDHV on the basis of the payment schedule proposed by the tenderer. For the sake of completeness: the payment schedule includes all the costs of maintaining the product at the desired quality level during the use period. The payment schedule is tested for soundness and completeness by a separate expert for this on behalf of ProRail. Only complete and sound payment schedules are included in the assessment.
The model used to calculate the NPV based on the TCO is enclosed in this call for bids as appendix 8. The tenderer with the lowest NPV earns 30 points. Other tenderers receive points proportionally.

Sample calculation for NPV assessment: The lowest NPV is €100,000. The NPV of another tenderer is €125,000. This tenderer receives €100,000/€125,000 x 30 = 24 points.

Weighting
In total, a maximum of 100 points can be earned. The points are assigned as follows:

- Circular (Sustainability and User Value): maximum 70 points
- Costs (TCO): maximum 30 points

Assessment of traditional variant
If the circular offer is rejected, the traditional offer is only assessed on TCO. The traditional variant should also supply the product including the necessary services to keep the product at the intended quality level for 10 years (not including regular cleaning costs). However, because one of the goals of the pilot projects that are done at ProRail (and other organisations) is to determine the differences between traditional and circular purchasing of products, we also ask for the aspects regarding sustainability and user value for the traditional variant (where possible).

Please separate the purchase costs from the management and maintenance costs. The furniture must at least meet the minimum requirements from the criteria document for sustainable procurement of office furniture, which can be found at http://www.pianoo.nl/sites/default/files/documents/gerelateerd/volledige_criteriadocument_kantoormeubilair.pdf. The upholstery must at least satisfy the minimum requirements from the criteria document for office upholstery, which can be found at http://www.pianoo.nl/sites/default/files/documents/gerelateerd/volledige_criteriadocument_kantoorstoffering.pdf

D. Award decision
On the basis of the assessment (the number of points earned), the procurement team draws up an award recommendation, which is presented to the NVLU project manager and the line management and staff organisation of Facilities Services to make a decision about awarding the contract.

ProRail primarily intends to award the contract in the circular variant.

ProRail reserves the right to reject offers for the circular variant. In that case, ProRail envisions awarding the contract in the traditional variant. If ProRail decides to commission the traditional variant after all, then the lowest TCO is the determining factor in the assessment. ProRail reserves the right not to award the contract in the traditional variant either.

Appendices

- Appendix 1: functional Statement of Requirements (not appended)
- Appendix 2: “supplier input on Look & Feel of furnishings” report (not appended)
- Appendix 2a: detail of acoustic slat in control room *(not appended)*
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- Appendix 7: Schedule (not appended)
- Appendix 8: NPV calculation model based on the TCO *(was an Excel file, included as image in this sample call for bids)*
- Appendix 9: Requirements for implementation phase
- Appendix 10: Maintaining presentability of movable furnishings

Appendix 8: NPV calculation model based on the TCO *(was an Excel file, included as image in this sample call for bids)*

A: template sheet

Values to be entered

EXPLANATION
You can enter the amounts you want to use in your offer in the blue fields below. You can choose your own payment schedule for this. For example, you can choose a one-time amount at the start of the use period. You can also choose to charge ProRail yearly or monthly instalments. You can also choose a combination, for example an amount upon commencement as well as yearly or monthly instalments. The yearly or monthly instalments can vary during the use period if you wish (for example a higher amount in the first few years and a lower amount in the later years, or vice versa). If you wish to return an amount to ProRail at the end of the 10-year use period, you can enter an amount in the cell "return premium at end of use period".

The use period is set at 10 years (2015-2024). The NPV for ProRail is calculated with an internal discount rate of 5%.

Circular offer

One-time amount upon commencement (e.g. all or part of the purchase price)

€ 0

Yearly instalment (this is the all-in amount for the total services)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

Monthly instalment (this is the all-in amount for the total services)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

Return premium at end of use period (this is the amount that may be returned to ProRail by the tenderer at the end of the use period)

€ 0	**Result of NPV calculation**	€ 0

Traditional offer

One-time amount upon commencement (e.g. all or part of the purchase price)

€ 0

Yearly instalment (this is the all-in amount for the total services)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

Monthly instalment (this is the all-in amount for the total services)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

Return premium at end of use period (this is the amount that may be returned to ProRail by the tenderer at the end of the use period)

€ 0	**Result of NPV calculation**	€ 0

B: NPV calculation

ProRail discount rate	**5%**

Cash flows and NPV for circular offer	**NPV**	**commencement**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
NPV: amount upon commencement	€ 0	€ 0										
NPV: annual instalment	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV: monthly instalment	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV: return premium	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV for circular offer	€ 0											

Cash flows and NPV for traditional offer	**NPV**	**commencement**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
NPV: amount upon commencement	€ 0	€ 0										
NPV: annual instalment	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV: monthly instalment	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV: return premium	€ 0		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
NPV for circular offer	€ 0											

Appendix 9 Requirements for implementation phase

Discussion between ProRail and contractor

Communication between ProRail and the contractor occurs at various levels
in accordance with the following frequency and with the following officials from ProRail. The service provider must make
a written report of all forms of consultation, from 4x per year to 1x per year, and submit these reports to ProRail within five business days.

Discussion partners			
Frequency	Client	Contractor	Discussion subjects
Daily	Facilities Team/Facility Service Point	Helpdesk	• Institutional quality, information and control (KWIS) officers • Progress of extra work • Defects found
Four times per year	Location manager	Regional Account Manager	• Evaluation of regional KPIs • Innovation • Client management
Twice per year	Contract management	Key Account Manager	• Contract affairs • Client management • Cost development • National KPIs
Once per year	Staff Manager/Facilities Services Manager	Director	• Client management • Cost development • Communication

Management information

The contractor issues a management report to the ProRail contract manager every quarter. The content of this management report will need to be determined in more detail between ProRail and the contractor in the contract phase. In any case, the management report must include a report on the KPIs specified.

Contract phase

The content of the contract between ProRail and contractor must be negotiated in detail after provisional award. Subjects of discussion include:

- drawing up KPIs (quality requirements, performance, etc.);
- determining content of management information;
- delivery times;
- execution;
- installation;
- damage;
- malfunctions;
- invoicing.

Implementation phase

Before starting on the implementation, the contractor must draw up an action plan for the implementation. This must be discussed with and approved by ProRail.

If you expect beforehand to incur costs for the points above, please provide an overview of these costs and include them in your total offer.

Appendix 10 Maintaining presentability of movable furnishings

Document number: P798493
Owner: ProRail, Geerke Versteeg
Reference: referring to information notice 2 NVLU circular call for bids
Version: 2.0
Status: Final

Notes on 'presentability'
The degree to which the basic quality, material quality and the finishing level of a product and/or element fit with the function and the use of the space.

This concerns the presentability of the products that are included in the call for bids.
The system and the type of defects from NEN2767 are used to assess the presentability. The presentability level may not be compared with a condition level in the NEN2767 standard.

Condition requirements
From the time of availability to the end of the agreed use period, there will be condition - requirements to maintain the desired presentability.
There are 3 condition levels:
A) Highly presentable
B) Presentable
C) Base level

The performance requirements are established per level in table 1 below.
The space where the furnishing is present determines the condition level that the furnishing must meet. For example: an office chair in a highly presentable room falls under condition level A, an office chair in a room with a base level falls under condition level C.

Highly presentable condition level A (Excellent condition)	Presentable condition level B (Good condition)	Base level condition level C (Reasonable condition)
The service is faultless and without defect.	The service may not influence productivity negatively.	The service may not influence productivity negatively.
Traces of use are hardly observable in the finish.	The element may show *minor traces of normal use* in the finish.	The element may show *traces of normal use* in the finish.
Traces of deterioration are hardly observable.	The element may show *minor traces of deterioration*.	The element may *show traces of deterioration*.
Traces of contamination are hardly observable.	The element may show *minor traces of contamination*.	The element may show *minor traces of contamination*

Table 1: Requirements per condition level

Determining the condition (limit)
The condition is determined per element type in one room (architectural, technical systems and permanent fixture), or per object (movable furnishings).
- Architectural example: The ceiling panels in one room, or the floor finishing in one room.
- Object example: One of the tables in a 4-person office space.

The assessment
Presentability is assessed according to NEN2767.
Severe and serious defects that result in the functionality no longer being assured are not permitted.
Presentability only looks at the minor defects:
- Maintenance (dirt)
- Finish (damage in the form of scratches, cracks, etc.)
- Basic quality (sound functioning)
- Deterioration (wear, obsolescence, discolouration of elements and (sub)components)

The upper limit for the scope and intensity for the minor defects is given in table 2 below. The nature of the minor defects, permitted/not permitted condition, is described in table 1.

Upper limit for 'Minor defects' based on table 5 from the NEN2767-1					
Amount Intensity	Incidental <2%	Local 2-10%	Regular 10-30%	Considerable 30-70%	General ≥70%
Low (early stage)	-	A	B	C	-
Medium (advanced)	A	B	C	-	-
High (final stage)	B	C	-	-	-

Table 2: Upper limit for amount and intensity per condition level

Presentability Fault

A presentability fault occurs when the condition requirements above are not met in a given room or for a certain object. For further specifications of the fault and the amount of deductions and recovery times, please see the contract to be drawn up after the provisional award. The way in which defects will be assessed will also be agreed upon concretely at that time.

ProRail's Presentability Choice

ProRail wishes to maintain presentability at condition level B during the term of the contract (see table 1 for specifications).

Preconditions

The contractor must state in the offer the preconditions they will set to achieve the presentability desired by ProRail.

Appendix 3 KPI Dashboard

KPI DEFINITION SHEET Version date 18-11-2014	SERVICE/PRODUCT SUPPLIER	Circular supply and maintenance of NVLU Carpet			YEAR XX								
		Client signature:	Contractor signature:										
			Execution			Assessment		Schedule					
CSF	Result area	KPI	KPI Supervisor	Procedure/measurement method	Survey frequency per year	Assessment	Weighting	Schedule Q1	Schedule Q2	Schedule Q3	Schedule Q4		
1. Condition	1.1 Condition/Quality	The quality level of the carpet is at level B	Desso	ProRail audit	2x per year	Passed = 10 points Not passed = 0 points	60%		30,00%		30,00%		
		Brief report about maintaining presentability and reporting the outcomes	Desso	Management report	Every quarter	Passed = 10 points Not passed = 0 points	40%	10,00%	10,00%	10,0%	10,00%		
							100%	10,0%	40,0%	10,0%	40,0%	100%	
3. Continuity	2.1 Response time	The response time in case of disruptions/complaints is a maximum of 24 hours, except on weekends and holidays (according to contract)	Desso	ProRail will conduct spot checks to inspect this using the report by Desso.	Every quarter	Passed = 10 points Not passed = 0 points	50%	12,50%	12,50%	12,50%	12,50%		
	2.2 Repair time	The repair time/resolution time in case of disruptions/complaints will not exceed 48 hours, except on weekends and holidays (according to contract)	Desso	ProRail will conduct spot checks to inspect this using the report by Desso.	Every quarter	Passed = 10 points Not passed = 0 points	50%	12,50%	12,50%	12,50%	12,50%		
							100%	25,0%	25,0%	25,0%	25,0%	100%	
4. Compliance	3.1 Meeting legislation and regulations	The contractor complies with 100% of the applicable legislation and regulations	Contractor	Management report	Every quarter	Passed = 10 points Not passed = 0 points	100%			100,0%			
							100%	0,0%	0,0%	100,0%	0,0%	100%	
5. Cooperation	4.1 Circular economy	Desso shares its knowledge with ProRail in the field of circular economy and the developments in that area within Desso	Desso	Assessment by contract manager	1x per year during meeting	excellent = 10 points good = 7 points fair = 4 points poor = 0 points	60%		30,0%		30,0%		
		Desso demonstrates that it researches/develops the best applicable possibilities to reuse products in a circular way. At least equivalent to the Take Back programme.	Desso	Assessment by contract manager	1x per year during meeting	excellent = 10 points good = 7 points fair = 4 points poor = 0 points	40%			40,00%			
							100%	0,0%	30,0%	40,0%	30,0%	100%	
6. Communicati	5.1 Management information	Desso provides the complete and timely delivery of the reports according to the structure and content agreed on with the Client	Desso	Assessment by contract manager	Every quarter	excellent = 10 points good = 7 points fair = 4 points poor = 1 point	50%	12,5%	12,5%	12,5%	12,5%		
	5.2 Communication, escalation & availability	There is consultation between ProRail and Desso according to the frequency and content agreed on in the communication matrix	Desso	Assessment by contract manager	Every quarter	excellent = 10 points good = 7 points fair = 4 points poor = 1 point	50%	12,5%	12,5%	12,5%	12,5%		
							100%	25,0%	25,0%	25,0%	25,0%	100%	

Appendix 4: Summary

SUMMARY

Lessons from ProRail Facilities Services
Circular Procurement Pilots
Traffic control centre Utrecht

ProRail & REBus

The European project REBus (Resource Efficient Business Models) and railway infrastructure manager ProRail have successfully completed a pilot project with circular procurement. The new traffic control centre, officially opened in Utrecht in June 2015, was furnished with 'circular' flooring and furniture. Purchasers and suppliers were stimulated in the call for tenders to think about a business model based on value retention of the raw materials throughout the entire supply chain.
The learning experiences that were gained throughout the whole process were recorded. These experiences are being shared with other market players to generate enthusiasm for them to use circular procurement as well, or to explore the possibilities for this. The knowledge about circular purchasing of office furniture that was gained with this ProRail pilot project, we will for example be using in the next pilot that is being prepared with the University Medical Center Utrecht (UMC).

REBus
The ProRail pilot was subsidised by the European project REBus. The objective of this project is to gain and share knowledge about the potential of resource efficient business models and to find out if these models will deliver the target of a 15% reduction in resource consumption and costs by the end of 2016. REBus is being conducted partially in Great Britain and partly in the Netherlands. In the Netherlands, REBus partners Rijkswaterstaat, PIANOo, CSR Netherlands and the Netherlands Enterprise Agency are exploring business models within five industries: ICT, office furnishings, construction, textiles and catering. REBus and ProRail are two of the now over thirty organisations in the Green Deal on Circular Procurement. The goal of this Dutch initiative is to get circular procurement onto the agendas of entrepreneurs and governments.

PREPARATION

- Before you start, it is important that the goal and the vision for circular procurement by the organisation are clear.
- Organise a market meeting and remember to invite the small, innovative parties. Prepare the programme thoroughly. The formulated vision and ambition must be part of this.
- Think carefully about the tender procedure to choose. In the case of a private procedure: have more than two parties take part and spend enough time on market research and selection of the parties.
- Bring the internal knowledge of the stakeholders' organisations to the required level and include them in the process, for example with presentations, lunch lectures and newsletters.
- Include 'circularity' from the very beginning of the needs assessment.

- It is very important to have an intensive dialogue and to create trust between the contracting authority and suppliers: not only to establish what is being offered, what business models are possible, etc., and also to gain mutual understanding for each other's roles, needs, challenges, risks and vocabulary. Circular procurement is new, unknown territory for both the contracting party and the supplier, which means there is a high chance of confusion or misunderstandings.

THE CALL FOR BIDS

- Calling for bids for a service including maintenance instead of 'ownership' is easier said than done. ProRail still purchased the furniture: in spite of various discussions with the furniture supplier, a use agreement was not reached". ProRail will have to look at how the furniture can be re-used with the highest possible value after using it.
- ProRail did not set circularity requirements for, only award sub-criteria for circularity. This will be required more firmly in the future. They used a price/quality ratio of 30/70 for awarding the contract. Test this award method thoroughly beforehand to verify whether the outcome is in line with the expectation.
- A difficulty is that no clear or sharp definitions are available with regard to (parts of) the circular economy. What makes one product more 'circular' than another product? What do we mean by toxic substances, critical materials, upcycling and downcycling? Try to define these terms for your own organisation.
- The importance of the different components of a circular offer relative to each other is not (yet) clear. For example, which is better: a long lifespan, or a short lifespan but with the possibility of high value re-use?
- Consider requiring a description of measures to extend the lifespan of materials instead of only including this as a 'want'.
- Include a criterion in which you make agreements about mandatory responses to future (technological) developments regarding high value re-use.
- Is Best Value Procurement the best way to do circular procurement? Because you start by looking at whether the party is capable, and only then continue with the request/service to be performed?

RAW MATERIALS

- Criteria/tools are needed to assess the raw materials used in a product, such as the nature of the materials, the degree of recycled content, toxicity, biobased materials, critical materials, etc., for example using a 'product passport'. A passport like this would have to be practical for purchasers and anyone who has to use it.
- Criteria/tools are also needed to assess the degree of modularity and reusability of a product.

SELECTION AND CONTRACT

- Do you have to include renewable energy in production as well (i.e. less use of fossil fuels)?
- How do you make agreements about maintaining the quality of furniture using SMART criteria? You often only know if you have made intelligent arrangements about once the contract is being implemented. It is difficult to judge this in the award phase, and this pilot was not able to give a simple answer to this.
- Maintaining quality is very difficult for suppliers in the case of special work provided by 3rd parties. As a supplier, you do not fully know the type of product it is, how long it will last, etc. One possible idea is to make a distinction between (standard) furniture from the supplier itself and special work by third parties in the agreements on how to maintain quality.

- If you make agreements on maintaining a certain quality level, it can also be useful to make agreements about a warranty on manufacturing defects. Note, there is a difference between a warranty on manufacturing defects and on the appearance (e.g. quality level B, spots, scratches, etc.).
- In this pilot, we were not able to make agreements about the use of the furniture in future cycles. We were also unable to adequately shift the supplier's focus from 'deliver everything new' to first looking at the reusability of existing furniture, whether it belonged to ProRail itself or other organisations.
- During the pilot, the furniture supplier was not very enthusiastic about taking furniture back. How can this enthusiasm be increased? What is the 'trigger' for suppliers to take furniture back (and actually to re-use it).
- The possibilities for contract agreements to modify furniture during the term or to exchange it for other furniture were not communicated well - the parties did not want to give a price.
- A certain contract duration needs a certain business model. E.g. longer than seven years: no lease.
- Certain items of furniture require a certain business model (e.g. for agreements about a return premium, it seems to be more attractive to deliver design classics that offer more certainty of a higher residual value).
- Taste and trends are at odds with the circular economy. It is proportionally more difficult to find a new owner for a custom stool in lurid purple. The circular economy seems to benefit the most from modular standard products.

COSTS

- Paying for use including maintenance - with the tenderers being free to provide their own payment model for this (e.g. one-time payment, monthly fee) - turned out well. ProRail did come up against a number of issues about this:
    - ProRail found that the disadvantage of lease is that there is an extra intermediary such as a bank;
    - One-time payment is actually pre-financing in disguise. You lose any leverage if the supplier fails to perform. ProRail chose to pay a large first installment and then progressively smaller amounts to make the degree of pre-financing acceptable for the supplier.
- Circular/C2C products are often somewhat more expensive. This is not a problem as long as this is compensated by lower maintenance costs, longer lifespan and/or higher residual value.
- Given the 'newness', the smaller scale of pilots and the uncertainty of circular models, companies build-in risk margins that drive up the prices. Uncertainty about the quality of products from third parties also drives up the prices because of these products need to be kept at a certain quality level. Uncertainty about how well the customer will handle the goods (to maintain residual value), how the market will look in 10 years, etc. also increases prices

BUSINESS MODELS

The pilot provided many insights about new business models, but also raised questions. It is good to think about this in more detail.

- Are certain business models more desirable than others to stimulate the circular economy? For example, is ownership automatically no longer desirable and is it about procuring performance?
- Should the quality necessarily be guaranteed by the supplier, or can another party (or you) do this?
- Does a product necessarily have to go back to the supplier after use, or are other solutions just as good (for example high value re-use by a third party)?
- Are there possible situations in which it is desirable for the contracting authority to control the future re-use itself (with the result that you don't have to make agreements about this in your tender)?
- Is the transition from the economy to 'performance-based' business models central or is it about maintaining the value of resources and closing circuits, regardless of who does this?
- If the latter is the case, how do you determine what parties (incl. your own organisation) and what business models are best suited to realising this?

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