

# The resource passport



Working together  
towards a circular  
economy

allliander

# Alliander & Sustainable Business Practice



In the transition towards a sustainable society, it is important to jointly look for sustainable solutions, not only from an economic and social perspective but also from an ecological point of view. That is why Alliander is making socially responsible choices on the basis of a number of key elements. Apart from, for example, CO<sub>2</sub> reduction and labour participation, *the circular economy* is one of those key elements.



## The circular economy

The circular economy is a way of realising sustainable development: properly thinking about and organising our economy, aimed at efficient use of resources and reducing, and eventually eliminating, waste flows.

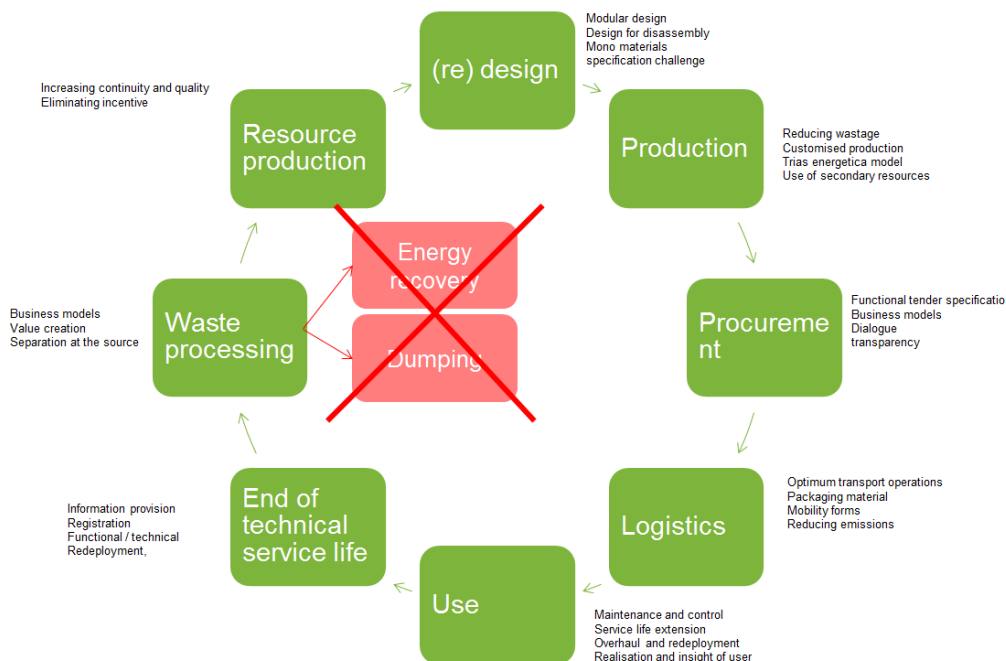
Alliander does this by:

- Making optimum use of existing assets;
- Purchasing assets in an as circular manner as possible;
- Preventing waste of resources in our operations;
- High-grade recycling of the remaining waste.

The composition of assets currently purchased by Alliander is often unknown. There is also little transparency in the origin of the resources.

Moreover, when designing a product and deciding on its composition often little thought is given to the disassembly potential at its end-of-life. A circular design contributes to higher quality waste recycling in which pure components and resources can be recovered and the waste processing process requires less energy.

## Circular business operation in the Alliander chain



Product transparency in the chain is therefore essential for encouraging circular development. The circular business operations pursued by Alliander are set out in the diagram above. The recently developed resource passport is a tool for increasing transparency in the chain.

### The resource passport

The resource passport has been devised in collaboration with KIWA Technology, AVK Nederland and AVK Plastics. The passport records the resource composition of a product, the origin of the resources and which of these resources are (already) made from recycled material.

The passport therefore gives specific insight into how a product could be made more sustainable. If the resource composition of a product is known, it encourages thinking about how it can be changed and promotes recyclability. In addition, the resource passport makes it possible to report on, and steer towards, sustainable ambitions in daily business operations.

When purchasing assets Alliander will therefore, from today, request transparency in resource composition, recycled content and origin of material. This means that the quality and speed of the provision of this information will be included in our weighting models.

The developed resource passport is a tool for delivering this information. A different template or comparable information in a different format may also be submitted as long as it answers our questions about product transparency.

Two important principles were applied in the design of the format. First and foremost, the passport is an addition to existing CSR instruments and principles and is not intended to unite or replace these instruments. Consequently, issues already safeguarded and managed in the current CSR instruments and agreements are not included in the passport. Information which can be derived from the technical specifications of the product is also not included.

Secondly, the resource passport serves as a testament of the product and makes the application of the product after its first life span future proof. The passport is useful for future reference as it shows exactly which products and materials have been used. For this reason, the passport does not include time-dependent components such as CO<sub>2</sub> emissions. The content of the resource passport can however serve as a basis for a life cycle analysis (LCA), which means that information about CO<sub>2</sub> emission during production and use can be collected.

Completing the resource passport is therefore not a goal in itself. It is primarily a tool for creating more insight in, and understanding of, the materials we are using in order to determine together how this can be made more sustainable. Alliander will therefore not use this information to form opinions or attach consequences to the results.

Of course, maintaining quality, safety and functionality of our assets are preconditions for sustainability. In addition, Alliander has made it a condition that all information entered

in the resource passport will be treated as confidential. If desired, an NDA will be prepared and agreements will be made on the content of the resource passport.

### How does the resource passport work?

The resource passport is a data file in which the resource composition of the delivered product is recorded in a structural and uniform manner. See figure 2.

The passport format can be downloaded [here](#). The format consists of three sheets. The first sheet provides an overview of resources. The second sheet provides space to include a picture/drawing of the product. Finally, the definition list includes a description of the requested data (weight, relative percentage and percentage of recycled content).

### Completion instructions

A product often contains different parts, consisting of different resources. In the resource passport, all parts and materials of the product must be specified. Specific data is completed per resource in sheet 1.

|  | Weight (% total) | Relative Percentage | Weight-% portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) | (Base) Product   | Supplier/Producer (Tier 2) | Source         | (Base) material | Optional: recommended treatment for reuse or recycling** |
|--|------------------|---------------------|-----------------------------------|------------------------------------|----------------------------|------------------|----------------------------|----------------|-----------------|--|
| <b>Part X1, &lt;reference to number on drawing&gt;, &lt;purpose of part within the product&gt;, &lt;weight&gt;, &lt;number of parts in total product&gt;</b> |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
| Polyethylene caps regrind  | 29%              | 63%                 | 100%                              | R                                  | Various (NL/DE)            | Soda bottle caps | Non traceable              | Oil extraction | HDPE Virgin     |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
| <b>Part X2, &lt;reference to number on drawing&gt;, &lt;purpose of part within the product&gt;, &lt;weight&gt;, &lt;number of parts in total product&gt;</b> |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
| <b>Part X3, &lt;reference to number on drawing&gt;, &lt;purpose of part within the product&gt;, &lt;weight&gt;, &lt;number of parts in total product&gt;</b> |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
| <b>Part X4, &lt;reference to number on drawing&gt;, &lt;purpose of part within the product&gt;, &lt;weight&gt;, &lt;number of parts in total product&gt;</b> |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |
|  |                  |                     |                                   |                                    |                            |                  |                            |                |                 |  |

3 Figure 2: Template resource passport sheet 1



Based on a material from 'Product X', this instruction explains which data must be included in the resource passport and where. This is the material *Polyethylene Caps Regrind* which is used in part X1.

|                           |     |     |      |   |                 |                  |               |                |             |
|---------------------------|-----|-----|------|---|-----------------|------------------|---------------|----------------|-------------|
| Polyethylene caps regrind | 29% | 63% | 100% | R | Various (NL/DE) | Soda bottle caps | Non traceable | Oil extraction | HDPE Virgin |
|---------------------------|-----|-----|------|---|-----------------|------------------|---------------|----------------|-------------|

At the top of sheet 1, first the product and then the total weight of the product must be stated. Further down the template, see figure 2, details are required of the different parts of which Product X is composed plus a number of specifications, including weight. Information about the weight is essential to be able to carry out LCA calculations. This is not possible with relative weights, as expressed in percentages, which is why it is requested in the resource passport.

|                          |
|--------------------------|
| <b>Resource passport</b> |
|                          |
| X'                       |
| Supplier:                |
| Date:                    |
| <b>Total weight:</b>     |

The first column, see red cell below, asks for the weight in percentage terms of the share of Polyethylene compared to the total weight of the product. In this example this means that 29% of the total weight consists of PE caps regrind.

|   | Weight (% total) | Relative percentage | Weight % portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) | (Base) Product   | Supplier/Producer (Tier 2) | Source         | (Base) material | Optional: recommended treatment for reuse or recycling** |
|---|------------------|---------------------|-----------------------------------|------------------------------------|----------------------------|------------------|----------------------------|----------------|-----------------|--|
| Part X1, <reference to number on drawing>, <purpose of part within the product>, <weight>, <number of parts in total product> | 29%              | 63%                 | 100%                              | R                                  | Various (NL/DE)            | Soda bottle caps | Non traceable              | Oil extraction | HDPE Virgin     |  |

The second column asks for the relative percentage. In the example shown, 63% of the weight of part X1 consists of PE caps regrinds.

|   | Weight (% total) | Relative percentage | Weight % portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) | (Base) Product   | Supplier/Producer (Tier 2) | Source         | (Base) material | Optional: recommended treatment for reuse or recycling** |
|---|------------------|---------------------|-----------------------------------|------------------------------------|----------------------------|------------------|----------------------------|----------------|-----------------|--|
| Part X1, <reference to number on drawing>, <purpose of part within the product>, <weight>, <number of parts in total product> | 29%              | 63%                 | 100%                              | R                                  | Various (NL/DE)            | Soda bottle caps | Non traceable              | Oil extraction | HDPE Virgin     |  |

The fourth column asks for the share of recycled material in PE caps regrind. In other words, the percentage of the weight of PE caps regrind that derives from secondary (recycled) material. In this example it is 100%.

|   | Weight (% total) | Relative percentage | Weight % portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) | (Base) Product   | Supplier/Producer (Tier 2) | Source         | (Base) material | Optional: recommended treatment for reuse or recycling** |
|---|------------------|---------------------|-----------------------------------|------------------------------------|----------------------------|------------------|----------------------------|----------------|-----------------|--|
| Part X1, <reference to number on drawing>, <purpose of part within the product>, <weight>, <number of parts in total product> | 29%              | 63%                 | 100%                              | R                                  | Various (NL/DE)            | Soda bottle caps | Non traceable              | Oil extraction | HDPE Virgin     |  |

The next columns ask after the origin of the material. For the (recycled) resource PE caps regrind, the basic product is soda bottle caps. These caps originate from the Netherlands and Denmark. In the event of a limited number of suppliers, these suppliers can be specified. If there are several suppliers it is possible to enter 'various' under Supplier/Producer (Tier 1), as in the example.

The next two columns ask after the Supplier/Producer (Tier 2). This is a reference to the source of the material in Tier 1 (soda bottle caps). In this example, the producer of these soda bottle caps cannot be traced. The source is known however (oil extraction) and the base material (HDPE Virgin).

|   | Weight (% total) | Relative percentage | Weight % portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) | (Base) Product   | Supplier/Producer (Tier 2) | Source         | (Base) material | Optional: recommended treatment for reuse or recycling** |
|---|------------------|---------------------|-----------------------------------|------------------------------------|----------------------------|------------------|----------------------------|----------------|-----------------|--|
| Part X1, <reference to number on drawing>, <purpose of part within the product>, <weight>, <number of parts in total product> | 29%              | 63%                 | 100%                              | R                                  | Various (NL/DE)            | Soda bottle caps | Non traceable              | Oil extraction | HDPE Virgin     |  |

In addition, information is also requested on the recyclability of the product and possible processing (visible in the new template as of 01-09-2017). There are two questions, of which one is optional.

| Relative percentage | Weight % portion recycled content | Degree of recyclability* (R, D, N) | Supplier/Producer (Tier 1) |
|---------------------|-----------------------------------|------------------------------------|----------------------------|
| 63%                 | 100%                              | R                                  | Various (NL/DE)            |

The first relates to the degree of recyclability of the relevant resource. There is a choice from the following categories which are also included in the definition list:

| Categories of recyclability |  |
|-----------------------------|--|
| <b>R</b>                    | <b>R</b> ecyclable: raw material remains at similar quality level after recycling of the product and could (in theory) be used again for this product after recycling, or can immediately be used again (reuse). |
| <b>D</b>                    | <b>D</b> owncyclable: raw material is recyclable but can then only be used in a lower quality grade for new products (therefore it cannot be applied in the original product or products of similar quality)     |
| <b>N</b>                    | <b>N</b> on-recyclable: raw material cannot be recycled and put back into a useful material, either due to the way it is constructed in the product or because the raw material simply cannot be recycled.       |

These categories list the recycle potential of the resource in this product. Although it relates to the recyclability of the individual resource, it is important to take into account how this is processed into the product and whether that affects the recyclability. The recyclability category may possibly be tested by a processor. The degree of recyclability is therefore based on the current state of the art.

It can also be stated which recommended treatment of the product is required to make optimum use of the recycling or reuse potential.

| (Base) material | Optional: recommended treatment for reuse or recycling** |
|-----------------|--|
| HDPE Virgin     |  |

A short explanation has been added to the definition list.

|                       |  |
|-----------------------|--|
| Recommended treatment | Advice or processing conditions belonging to the design philosophy of the product in order to maximise the recyclability of the product. In other words, what is the best recycling method or treatment according to the producer. |
|-----------------------|--|

### Validity of the resource passport

Completing the resource passport is a first step towards forming a picture of the resourced used and the chain underlying these materials. We assume that the relevant supplier has completed the passport in all honesty for each product. To validate the passports as best as possible and to be able to use them for internal reporting purposes, we ask our suppliers to sign the resource passport.

It has been agreed within Alliander that the resource passport for a product is valid if it has been signed by a CEO or other person with final responsibility for this product at the supplier. Space has been included to this end in the latest version of the resource passport.

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |

\*Explanation categories of recyclability: see definition list

\*\* See definition list for explanation

|               |  |  |  |
|---------------|--|--|--|
| Completed by: |  |  |  |
| Position:     |  |  |  |
| Date:         |  |  |  |
| Signature:    |  |  |  |



## What happens now?

We think that the resource passport is a next step in the realisation of our goals towards creating a sustainable society. However, we cannot do this alone. A circular economy is based on collaboration and harmonisation of the whole production and service chain. We would therefore appreciate it if suppliers contact us with any questions and comments on, and areas for improvements of, the format of the resource passport. We would welcome a discussion on the optimisation of the lifecycle of materials, the alternatives and sustainability of the products which connect us.



