

GREEN DEAL
Reliable Evidence for Applications of
Plastic Recyclate

Pilot projects

13 December 2021

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Introduction

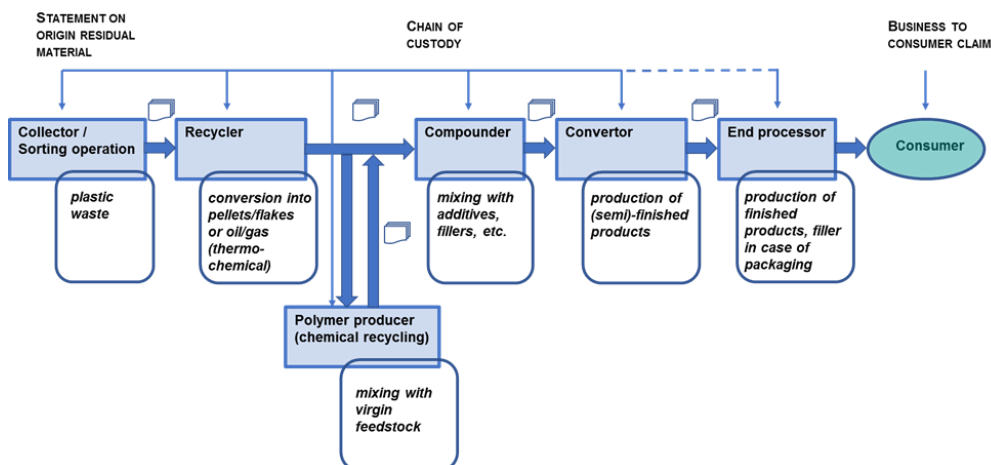
This overview of pilot projects has been prepared in the framework of the Green Deal Reliable evidence for applications of plastic recyclate. This Green Deal has been signed by, among others, the Dutch Minister for the Environment and Housing and the Dutch Minister of Economic Affairs and Climate Policy, NRK, NRK Recycling, PlasticsEurope Netherlands, NEN and a large number of market parties (SABIC, BASF, Morssinkhof-Rymoplast, Philips Electronics and Unilever). The aim of this Green Deal is to develop a methodology to provide transparency on the percentage of recyclate in a semi-manufactured or finished product, which can thus be used to give reliable assurance of, or make reliable claims about, the percentage of recyclate in products. Claims may vary for different types of recycling processes, such as mechanical and chemical recycling.

Five pilot projects were conducted with the aim to provide proof of principle (on the volume of recyclate) for third party certification of the recycled content of plastic products, to identify potential hurdles in implementation and to involve certification schemes and gain support for the green deal approach. In these pilots an analysis was made on how companies now deal with the calculation of recycled content, how this is verified and what claims are used.

Pilot projects

Companies	Product	Material	Type of recycling
Morssinkhof-Plastics, Cedo	Bin bags	PE	Mechanical
ELHO, 360 Plastics, Ducor Petrochemicals, KRN, HaZaCom	Flower pots	PP	Mechanical
Plastics Energy, Sabic, Unilever	Ice tubs	PP	Chemical
BASF, Jaguar Land Rover	Front end carrier for a car	PA	Chemical
BASF, Sabic, Südpack, Zur Mühle Gruppe	Multi-layer film for food packaging	PA and PE	Chemical

For each project a short description will be given of the input material, the chain of custody, what voluntary certification systems are used, whether third party independent verification is in place and what claims they currently apply in the business to consumer market.



Pilot 1: Bin Bags

Short description:

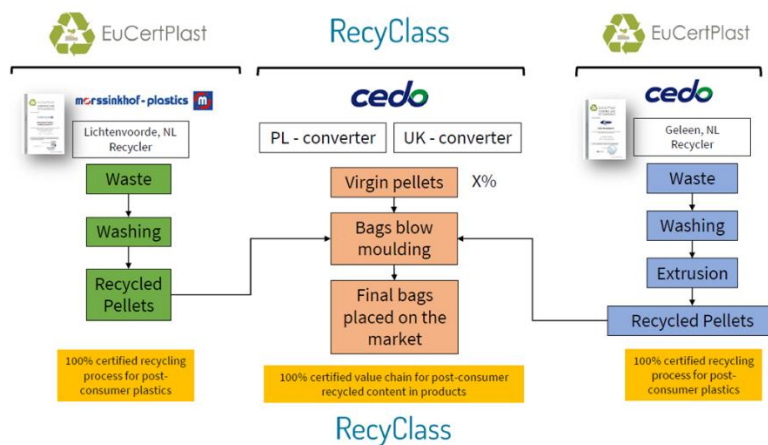
Morssinkhof-Plastics and Cedo receive plastic waste from a waste collection and sorting company. After recycling this waste into pellets, Cedo converts the pellets into bin bags.

Origin residual material:

Both companies are certified by EuCertPlast, which guarantees the incoming material procedures and controls. EuCertPlast is a European wide certification aimed at plastic recycling processes. EuCertPlast is the first step of ensuring the quality and origin of recycled material. The certification works according to the European Standard EN 15343:2007.

Chain of custody:

The chain of custody model used is the controlled blending model. The chain of custody is certified by using the RecyClass Recycled Plastics Traceability Audit Scheme. This scheme assesses the traceability of recycled plastic material throughout all the steps of the value chain, while verifying the origin of the material in product claims. The Scheme is based on a controlled blending model as described in the international standard on the chain of custody (ISO 22095), as well as the European standard on recycled plastics traceability (EN 15343:2007).



Product claim:

Rymoplast Poland:

- part of the product range is sold under Blauer Engel certificate, which means that the products contain minimal 80% post-consumer recycled content

- the other bags are put on the market stated that they contain 100% recycle, with the exception of the masterbatch

Cedo:

- Cedo Poland works completely according to the Blauer Engel certificate



The claim on the Romy bags is: 'Made from recycled plastics'.

Pilot 2: Flower pots

Short description: 360 Plastics uses both pre-consumer and post-consumer PP material to produce flower pots. Ducor Petrochemicals provides scraps (PP material). This material is grinded and washed by KRN and 360 Plastics then produces PP pellets. Hazacom takes care of compounding and regranulating and 360 Plastics blends the regranulates for the customer. ELHO then produces flower pots.

Origin residual material: 360 Plastics is audited on a regular basis by KIWA according to the Covenant for products and processes (2018). Inspections are carried out by KIWA twice a year for 360 Plastics and once a year for KRN and HaZaCom (to safeguard that only PP scraps from Ducor are used). The statement made is that the residual material is PP waste material.

Chain of custody: The chain of custody model used is the controlled blending model. There is no certification system in place that is in line with the international standard on the chain of custody (ISO 22095), and the European standard on recycled plastics traceability (EN 15343:2007). The KIWA Covenant is a first step towards transparency on traceability.



Product claim: No claims are made on the product itself. On the website of ELHO the following statement is made: Currently, the majority of our flower pots are made from recycled material.

The Kiwa logo claims 100% recycle of upcycled PP waste material. Upcycling is defined in the covenant on request of 360 Plastics.



► **The beauty of waste: discover our new collection**
 Waste. Sheer beauty! We use recycled plastic to create beautiful designer pots.
 Green up your garden with our new fuente collection.



Pilot 3: Ice tubs

Short description:

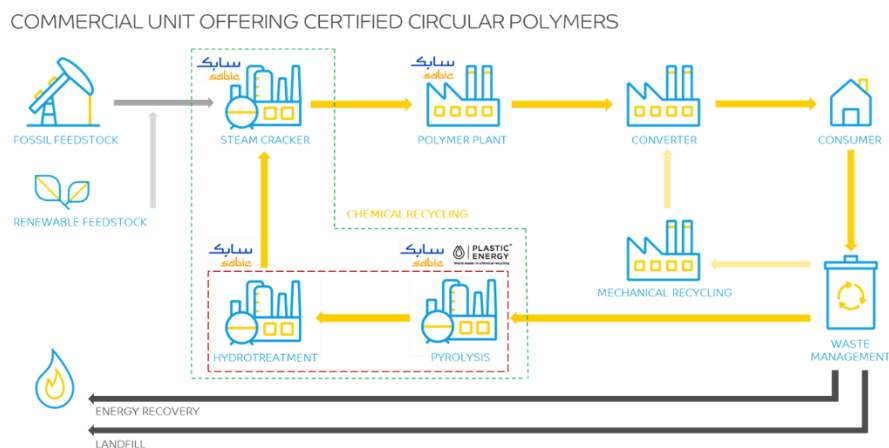
Mixed plastic waste is converted into pyrolysis oil by Plastics Energy. This oil is then hydrotreated by Sabic. After that, the oil is mixed with virgin naphtha and fed to a naphtha cracker, that produces amongst other products ethylene and propylene. The propylene is used to make PP which is then converted to ice tubs that are filled and sold by Unilever.

Origin residual material:

The supply chain is certified by ISCC PLUS. Although the waste collector/sorter is not certified by this scheme, they must prove that the residual material has reached the end of its intended life cycle by relevant documentation. For example, the point of origin holds appropriate licenses and permits to act as a legal waste management company or is an entity that generates recovered material as defined in ISO 14021:2016.

Chain of custody:

The chain of custody model used is mass balance with free allocation. The chain of custody is certified by ISCC PLUS, starting at Plastic Energy until the converters working for Unilever.



Product claim:

On product: Magnum uses recycled plastics.

Supporting information is provided by the Unilever website. Sabic refers to the recycled plastics as 'circular plastics'

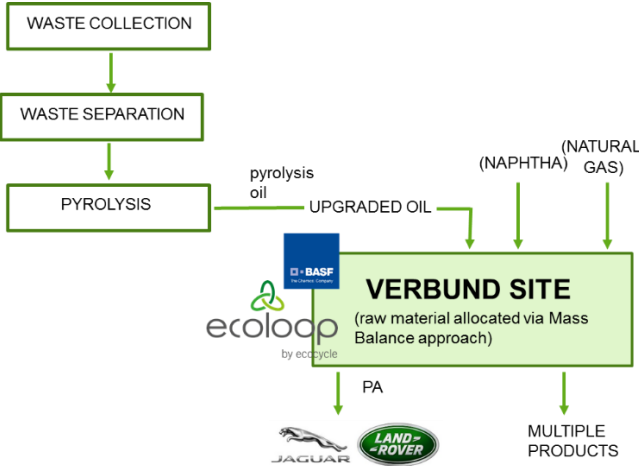


Pilot 4: Front end carrier of a car

Short description: Mixed plastic waste from households is converted into pyrolysis oil. This secondary oil then enters BASF’s production chain as a substitute for fossil raw materials. Several products are produced, amongst others polyamide.

Origin residual material: The principles for the documentation of the waste nature of the raw materials used have been certified by the Ecoloop certification system.

Chain of custody: The chain of custody model used is mass balance with certified auto-consumption exempt allocation. BASF’s mass balance approach certified by Ecoloop. The Ecoloop certification system itself operates by making use of relevant elements of various standards: EN ISO 14021:2016, TÜV SÜD CMS 71, EuCertPlast and RAL UZ 30a. It is a certification of products.



Product claim: On product: No claim has been developed for this product.



Pilot 5: Multilayer film for food packaging

Short description:

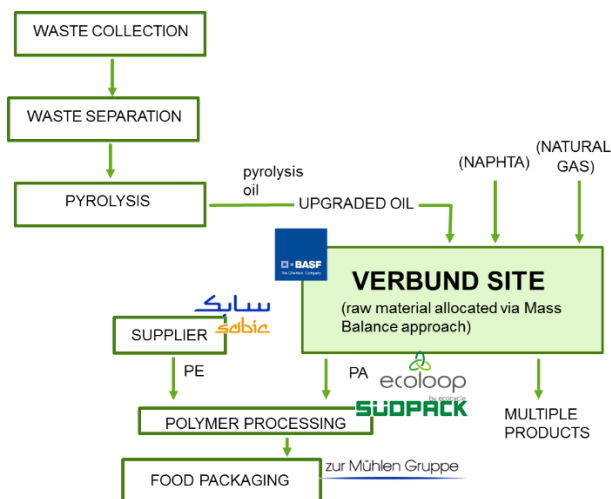
Mixed plastic waste from households is converted into pyrolysis oil. This secondary oil then enters BASF's production chain as a substitute for fossil raw materials. Several products are produced, amongst others polyamide. The same type of supply chain can be described for PE produced by Sabic. This PE has also been produced from mixing pyrolysis oil made from mixed plastic waste with naphtha in a naphtha cracker. Südpack produces a multilayer packaging from BASF's PA and Sabic's PE. The Zur Mühle Group uses the packaging for poultry sausage.

Origin residual material:

See pilot 3 (Sabic) and pilot 4 (BASF) for statements on the residual material (certified respectively by ISCC PLUS and EcoLoop).

Chain of custody:

The chain of custody model used is mass balance with certified auto-consumption exempt allocation. Sabic is ISCC PLUS certified to produce recycled PE (see pilot 3). BASF's and Südpack's mass balance approach are certified by EcoLoop (see pilot 4).



Product claim:

“We pack in a sustainable way. Gutfried uses an innovative recycling technique. Scan the QR code- to find out more”.

More background information is presented in a short YouTube film, that explains the chemical recycling process and mass balance approach. It states that 2/3 of the plastics needed for the packaging come from chemical recycling.



Analysis of pilot projects

Statements on the origin of the residual material

For all pilots selected, third party verified statements on the origin of the residual material are made. Certification systems used are EuCertPlast, Kiwa Covenant for products and processes, ISCC PLUS and Ecoloop. ISCC PLUS certifies the waste up to the point of origin, which is difficult (or sometimes not possible) to apply, especially if waste traders are involved. Ecoloop allows self declarations from the waste suppliers and REDcert2 accepts a waste, if the waste stream has a EU waste classification. The specific KIWA covenant for 360 Plastics audits the suppliers of waste plastic.

A third party certification of the origin (e.g. recycler) and a statement/relevant documentation do not offer the same level of reliability. For the purpose of making reliable claims, third party verified certification on the origin of the residual material is necessary.

Chain of custody

All pilots except the flower pots work have certified chain of custody models in place for their supply chain. RecyClass is used in the mechanical recycling pilot for the bin bags, Ecoloop and ISCC PLUS are used in the chemical recycling pilots.

Business to consumer claims

Claims on the product/packaging are made for the food products (ice and poultry sausage). Both packagings show non-specific claims. The ice tubs claims tend to suggest that the whole packaging is made from mechanically recycled plastics, as there is no reference to allocation of recycled content nor to a certified mass balance approach. The poultry packaging shows a very careful statement, but the consumer can scan a QR code that leads to a YouTube film explaining the chemical recycling process.

For the front-end carrier of a car and the flower pots no claims are made on the product itself. On the website and in news items the consumer can find more background information on the recycled content.

The claim on the bin bags is that they are made from recycled plastics.

Conclusions and advice

It is strongly advised to have third party verified certification on the origin of the residual material and not to work with self-declarations of waste collectors/sorters. For making reliable claims on the recycled content certification of the chain of custody is also strongly advised.

More guidance is needed for business to consumer claims, especially for the claims that are made on the product or packaging itself. These claims must be short and specific; more background information can be given online. As part of this green deal a guidance document for claims on recycled plastic content will be prepared.