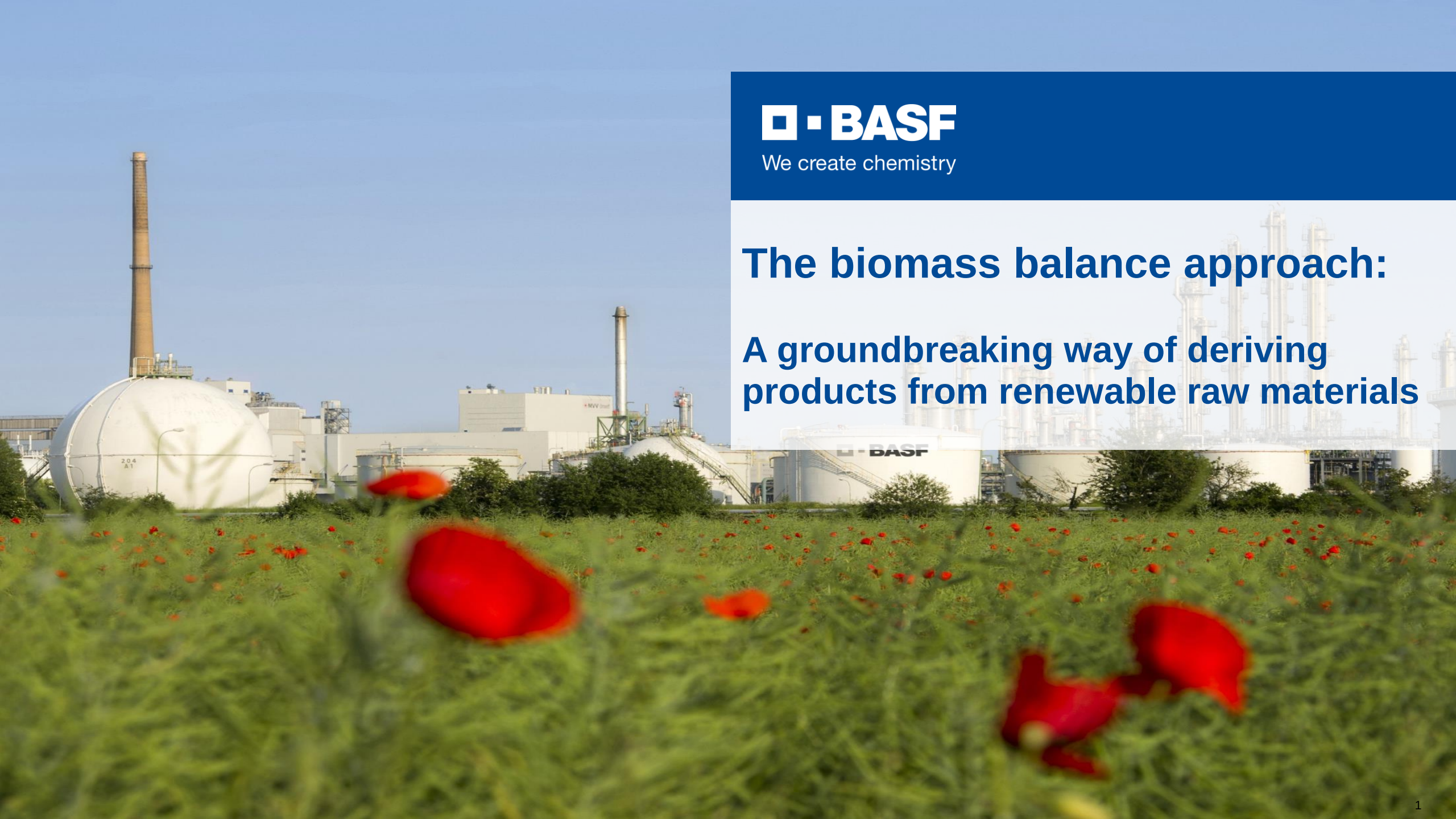


We create chemistry

The biomass balance approach:

A groundbreaking way of deriving products from renewable raw materials

Our core – the BASF Verbund Ludwigshafen

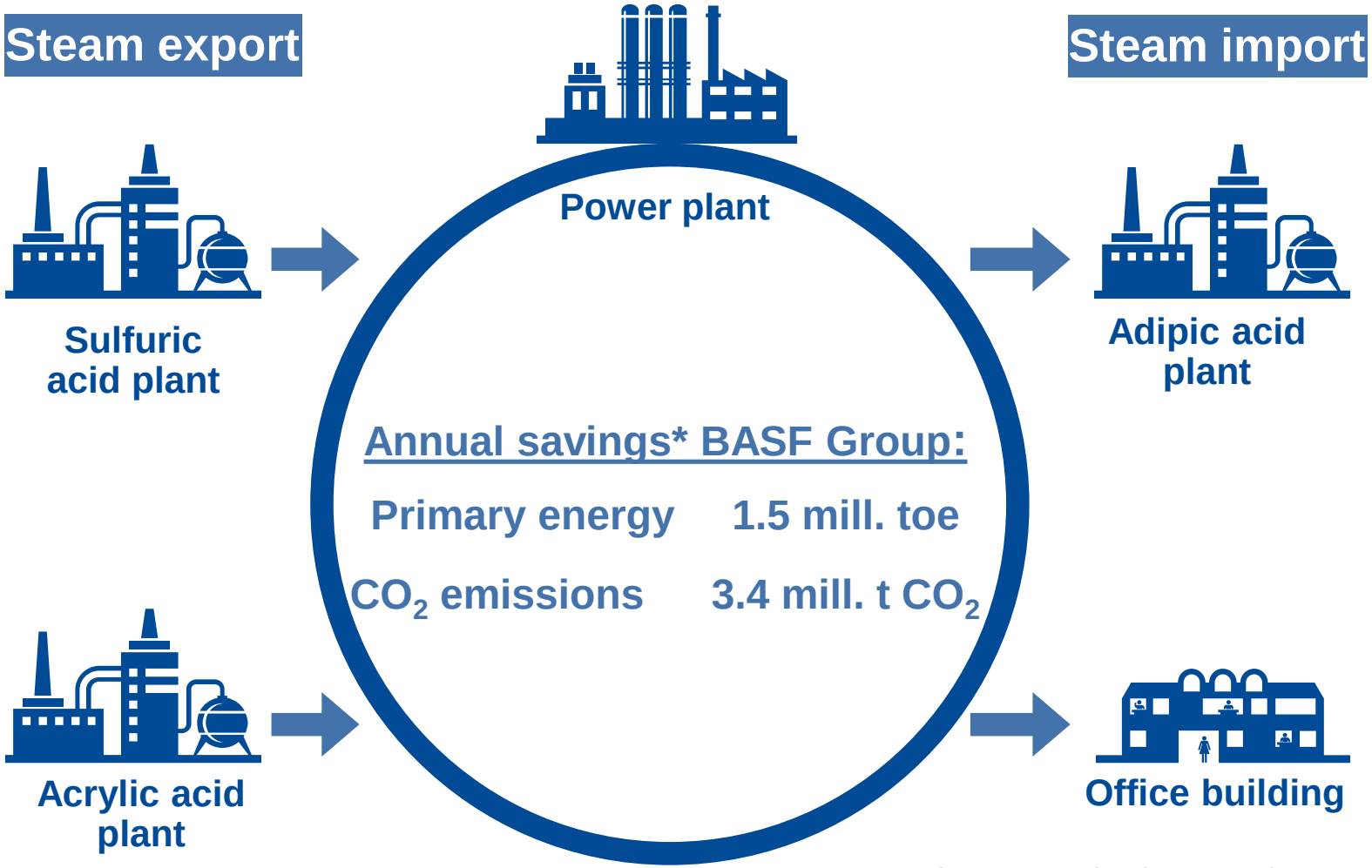
The largest integrated chemical complex in the world

Employees BASF SE	34,923*
Site area	10 km²
Sales products**	~ 8.5 million metric tons p.a.
Road	~ 106 km
Rail	~ 230 km
Site traffic	~ 2,100 trucks daily
Shipment	~ 100,000 containers p.a.
Pipeline system	~ 2,800 km
Production facilities	~110 production facilities with around 200 production plants

* as of December 31, 2017 **from in-house production

BASF
We create chemistry

BASF’s energy Verbund



* Comparison: Conventional power and steam generation in separate plants based on natural gas

BASF
We create chemistry

Filling the gap between traditional and dedicated production

Traditional production

- Fossil feedstock
- Known performance
- >10,000 products available in production scale
- Verbund production

Biomass balance approach

- Biomass-derived, 3rd party certified
- Same performance
- >10,000 products available in production scale
- Drop-in BASF Verbund production
- Additional cost of “bio” feedstock

Dedicated production

- Bio-based (^{14}C method)
- Often different product properties
- Not available for all products
- Investment in new plants
- Additional cost of “bio” feedstock

BASF
We create chemistry

How does the biomass balance approach work?

Feedstock

Fossil

Renewable

Use of renewable feed-stock in very first steps of chemical production (e.g., steam cracker)

BASF Production Verbund

Utilization of existing Production Verbund for all production steps

Products

Conventional

Allocated

Allocation of renewable feedstock to selected products

BASF
We create chemistry

Challenge: Renewable materials cannot be directed to one specific product

Feedstock

Fossil

Renewable

BASF Production Verbund

Therefore,
a credible external certification
system is needed

Products

Conventional

Allocated

BASF
We create chemistry

Our solution: Certification and standardization

Feedstock

BASF Production Verbund

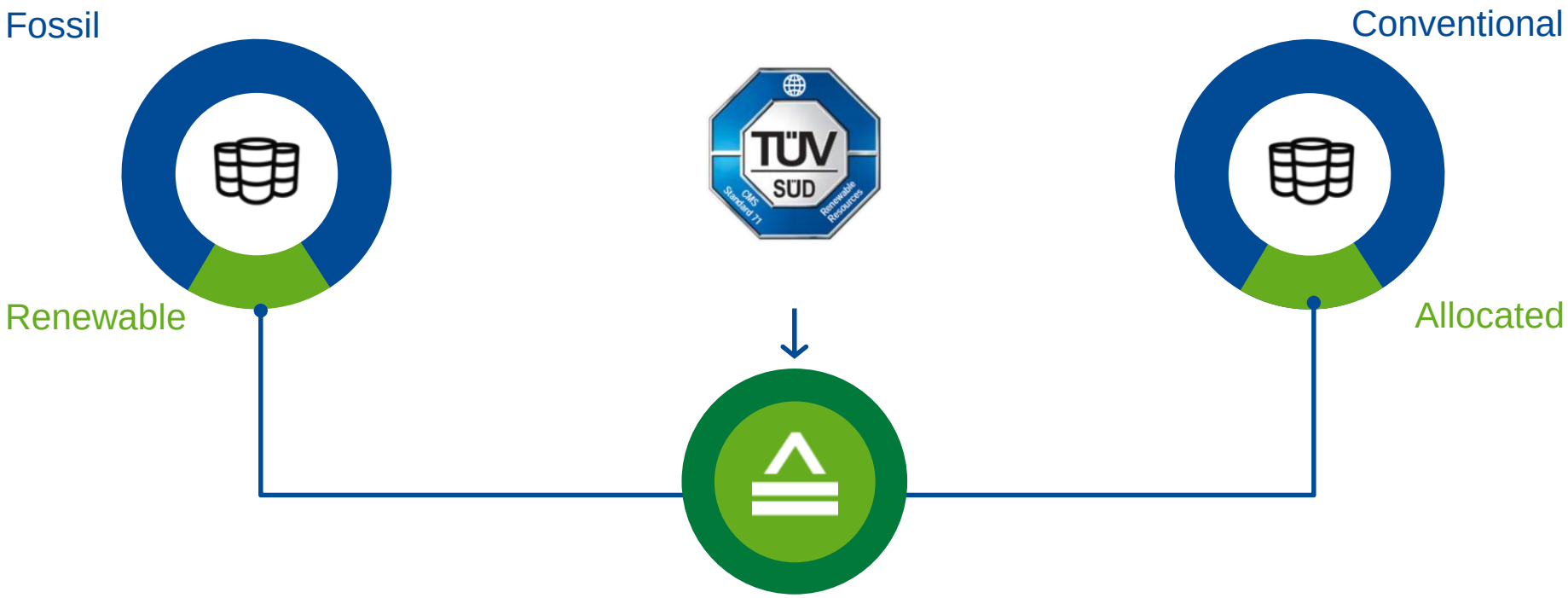
Products

Fossil

Renewable

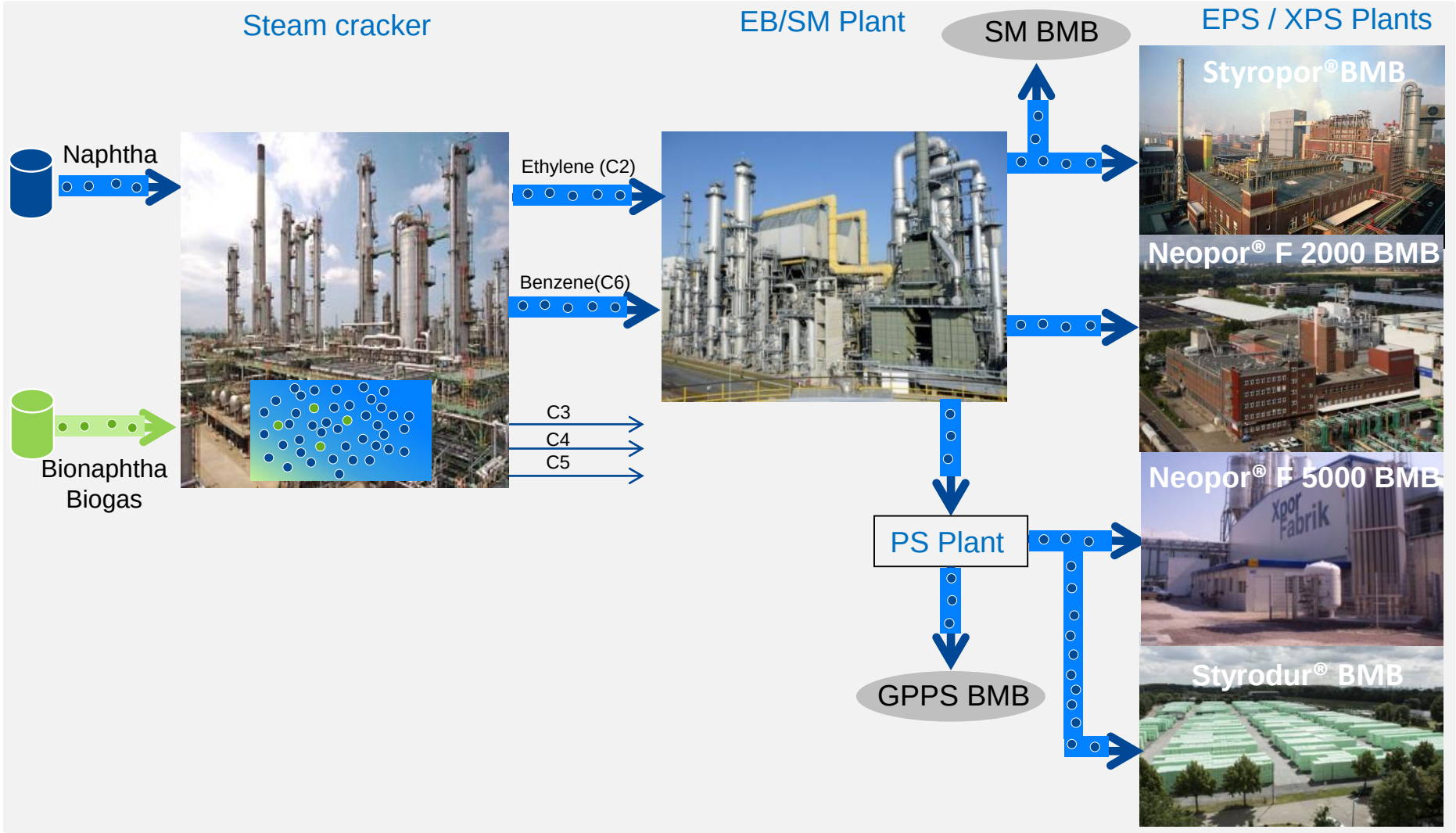
Conventional

Allocated



BASF
We create chemistry

Biomass Balance EPS / XPS products



Our Biomass Balance Portfolio: Polystyrene, EPS and XPS

BASF
We create chemistry

Claims and certificates

EXAMPLE

CERTIFICATE

The Certification Body "climate and energy"
of TÜV SÜD Industrie Service GmbH

certifies that the product

Your Product

conforms to the criteria of TÜV SÜD

Standard CMS 71: Mass balance for the traceability of renewable raw materials (2.2/2015)

This certificate is based on certificate No. **71.0074.16** of the certificate holder

BASF SE
Carl-Bosch-Str. 38
D-67056 Ludwigshafen

Report no. **600501369**
documents that the requirements of the standard are fulfilled and that the following claim is in conformity with the standard:

"Fossil resource saving product 100 % of the fossil feedstock required for the manufacturing of this product were replaced in the production site by renewable raw materials"

This certificate is valid until 31.05.2019 unless the certificate No. **71.0074.16** is cancelled at an earlier date.

Certificate No. **71.0074.16-39**

Munich, 31.05.2016

"Certification Body "climate and energy"

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

"Fossil resource saving product. X % of the fossil feedstock required for the manufacturing of this product was replaced in the production site by renewable raw materials."

Certified by TÜV SÜD

"The replacement of fossil through renewable feedstock reduces the greenhouse gas emissions by x t CO_2 equivalents per t product."

Additional self-assessment of BASF for declaration according to ISO 14021

EPS BMB CF Calculation

BASF
We create chemistry

Biomass balance certified products (examples)

Biomass balance certified products

Styropor packaging solution

*"We are proud to be the **first packaging manufacturer to launch a product made from biomass-balanced Styropor® from BASF** on the market. It is an innovation that scores points for its environmental impact without losing the foam's tried-and-tested technical properties."* (Bernhard Hauck, managing director at Schaumaplast)

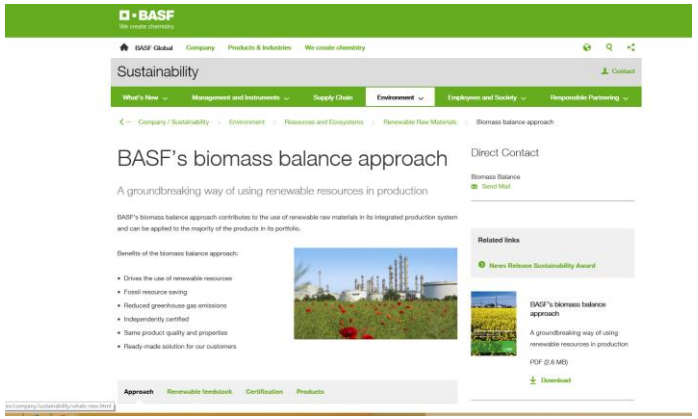
Schaumaplast is thus able to meet the high sustainability requirements of its customer: The young start-up company IceGuerilla.de GmbH & Co. KG sends ice cream right across Germany fresh and with excellent thermal insulation in Styropor packaging.

BASF
We create chemistry

BASF
We create chemistry

Questions about BASF's Biomass Balance approach?
Get more information…

Watch a short video on the BASF biomass balance approach.



All information bundled on our website.

Download our brochure.

BASF
We create chemistry

The National German Sustainability Award 2015: BASF rewarded for resource efficiency

Biomass Balance approach honored as an important cornerstone

Reasons given by the jury:

- *"…resource and energy efficiency plays a key role in BASF's sustainability strategy…"*
- *"…increasing substitution of fossil resources by renewable raw materials…"*
- *"…BASF has developed the biomass balance approach to integrate renewables in their production…"*
- *"…BASF's interlinked Verbund production enables savings of energy consumption, emissions and waste…"*
- *„…BASF products are helping its costumers to reduce their CO2 emissions…"*

BASF
We create chemistry

Green energy

GREENPEACE ENERGY
Energie-Genossenschaft aus Überzeugung

Über Greenpeace Energy

ÖKOSTROM WINDGAS ENGAGEMENT GENOSSENSCHAFT

> SERVICE
> KUNDEN WERBEN KUNDEN
> FRAGEN & ANTWORTEN
> NEWSLETTER
> ENERGY.AKTUELL PER E-MAIL

Fragen und Antworten

Stromwechsel > | Ökostrom > | *pro*Windgas > | Windgas-Technologie > | Genossenschaft Greenpeace Energy eG >

Ökostrom

Kommt nicht immer der gleiche Strom aus meiner Steckdose?

Physikalisch gesehen ja, aber es kommt auf die Erzeugung des Stroms an. Greenpeace Energy speist jederzeit genau die Menge sauberen Strom aus umweltverträglichen Kraftwerken ins Netz ein, die Sie verbrauchen. Dabei kalkulieren wir Ihren Verbrauch mit Hilfe so genannter Standardlastprofile. So stellen wir sicher, dass Ihr Geld nicht bei Kohle- oder Atomkraftwerken landet.

Gemeinsam machen wir den Stromsee sauber

Je mehr sauberes Wasser in einen See fließt, desto klarer wird er – ähnlich verhält es sich mit der Energieproduktion: Konventioneller Strom aus Kohle und Atom und grüner Strom aus erneuerbaren Quellen wird von den Produzenten unabhängig von seiner Herkunft in das Stromnetz eingespeist.

Das Prinzip „Stromsee“

Konventionell

Regenerativ

Die Nachfrage bestimmt das Angebot: Je mehr Kunden konsequenten Ökostrom aus erneuerbaren Quellen beziehen, umso sauberer wird der See – und damit der Strom, der bei Ihnen aus der Steckdose kommt.

BASF
We create chemistry

BASF

We create chemistry