

Global Methane Forum 2024
Biogas Technical Session
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Biogas development in Germany

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International Affairs

Fachverband Biogas e.V. - German Biogas Association



Agenda

The German Biogas Association

German Biogas Development

Biogas Technology

Examples & Best Practices

International Activities & Cooperation

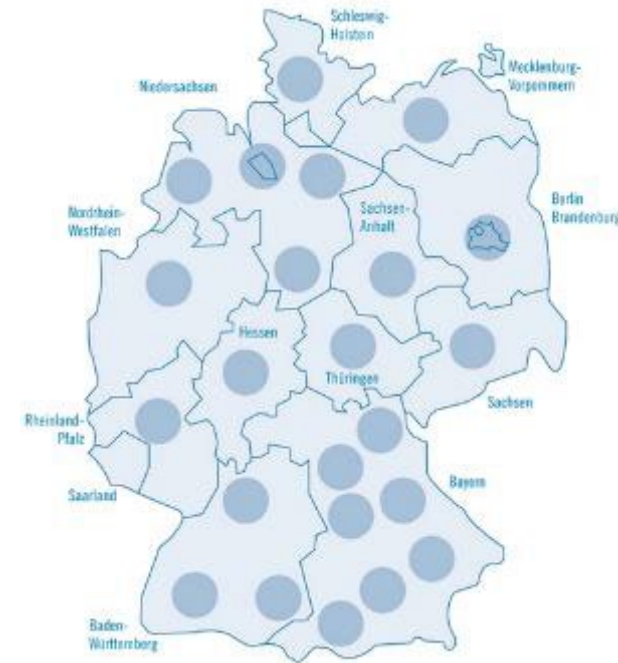
Fachverband Biogas e.V. – The German Biogas Association

- Operators of biogas plants
- Technology manufacturers
- Research institutions
- Public authorities
- Feedstock providers
- Interested individuals

4700 members

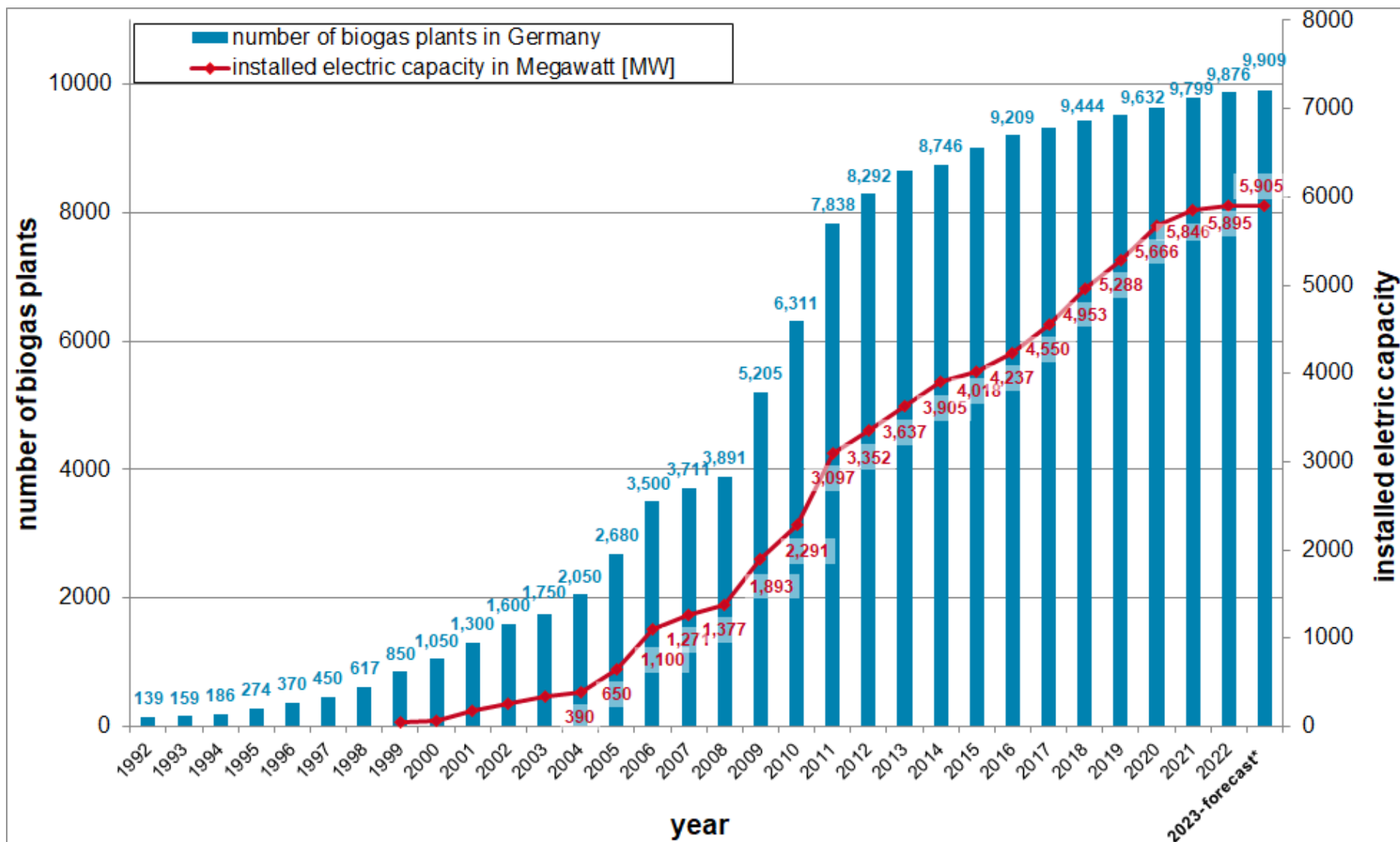
Main objective: promotion of the biogas sector

- Legal framework and technical standards
- Exchange of information
- Political advocacy at regional, national and European level



40 employees

Development of the German biogas sector



German Biogas Sector: Statistics at a Glance

(as of 08/2023)



	2022*	Forecast 2023**
Number of biogas plants (biogas plants with biomethane injection)	9,876 (242)	9,909 (248)
Installed electric capacity in MW	5,895	5,905
Gross electricity production in TWh per year	33.54	33.89
Total amount of biogas and biomethane in m³/a (bcm)	9.13	9.22
Households supplied with biogas-based electricity in millions	9.58	9.68
CO₂ reduction by biogas in million tonnes	21.2	21.4
Turnover in Germany in Euro	13.2 Billion	13.1 Billion
Turnover in Germany from exports in Euro	2.5 Billion	2.5 Billion
Jobs in the biogas sector	52,000	50,000

Number of biogas & biomethane plants (Europe)

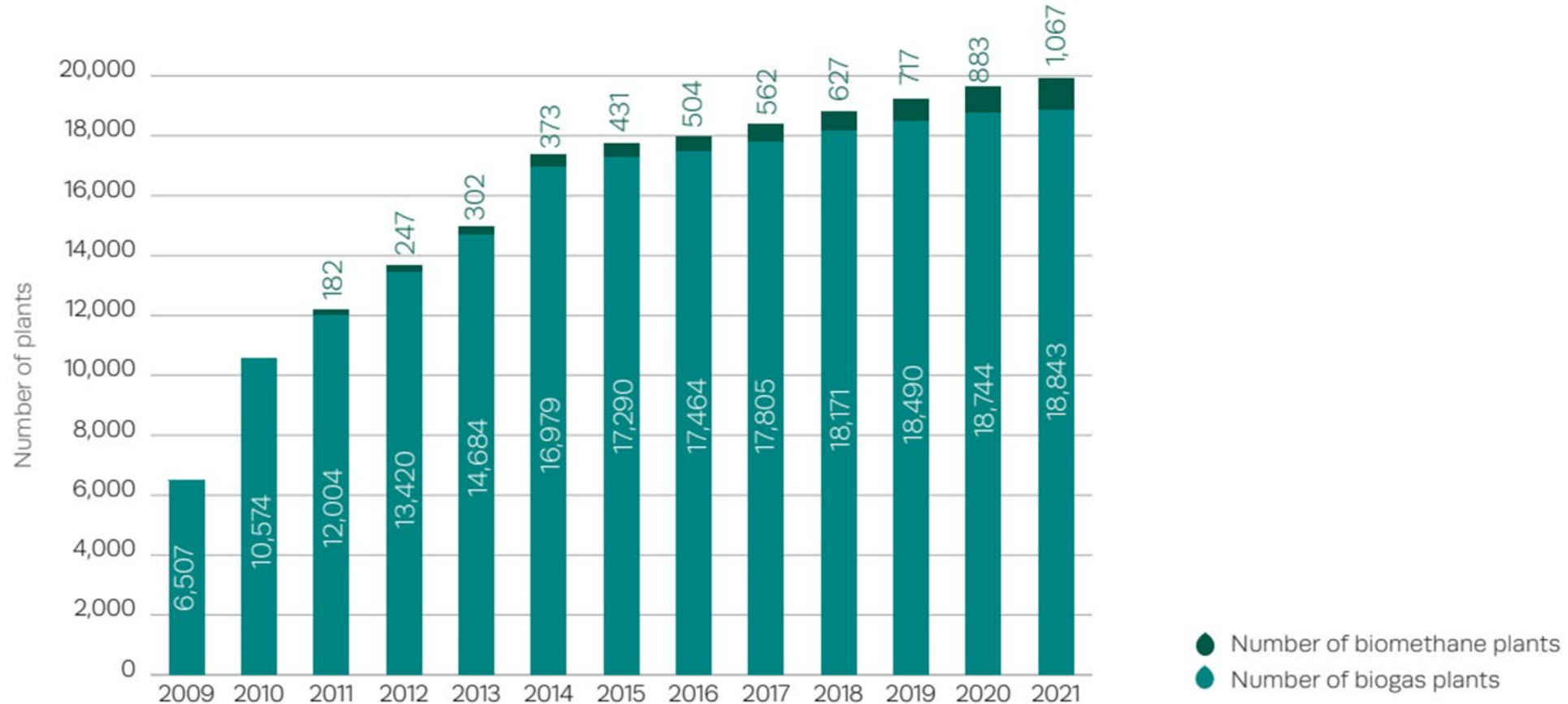


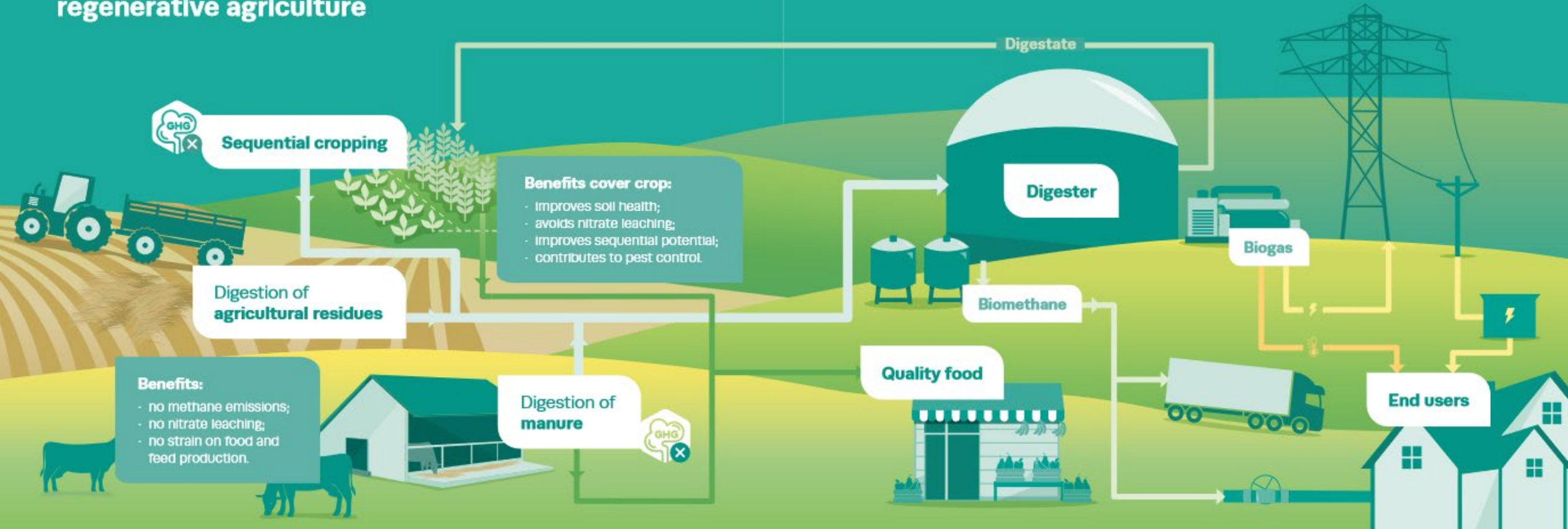
Figure 2.10 – Combined number of biomethane and biogas plants in Europe



Why biogas?

Anaerobic digestion presents an opportunity for low-cost decentralized waste management that creates valuable co-products of renewable energy and organic fertilizer

The contribution of biogases to regenerative agriculture

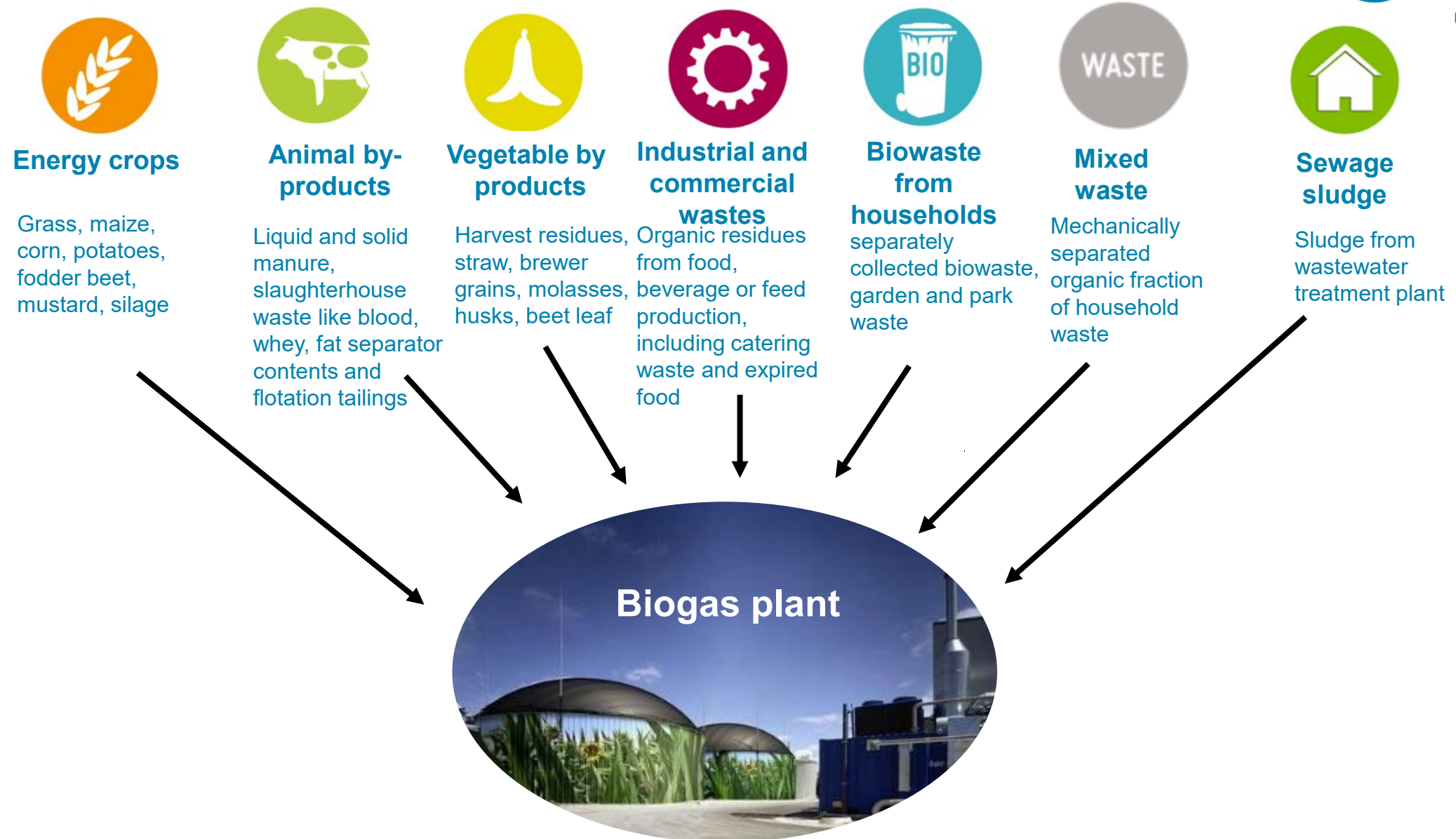


Biogas Technology – Components of a waste digestion plant



1. Feedstock
2. Reception and storage
3. Preparation
4. Enclosed building
5. Biofilter
6. Sanitisation
7. Digester
8. Gas storage
10. Gas cleaning
12. Digestate storage
13. Digestate upgrading

Feedstock is key !!!



Feedstock quality



- To produce a **high-quality organic fertilizer**
- Maintain **public acceptance** for biowaste recycling
- To **avoid malfunctions** in the biogas plant by **impurities** and oversized components

How to achieve a high-quality feedstock?

- Separate collection of different waste streams
- Sorting out impurities
- Public awareness !!!

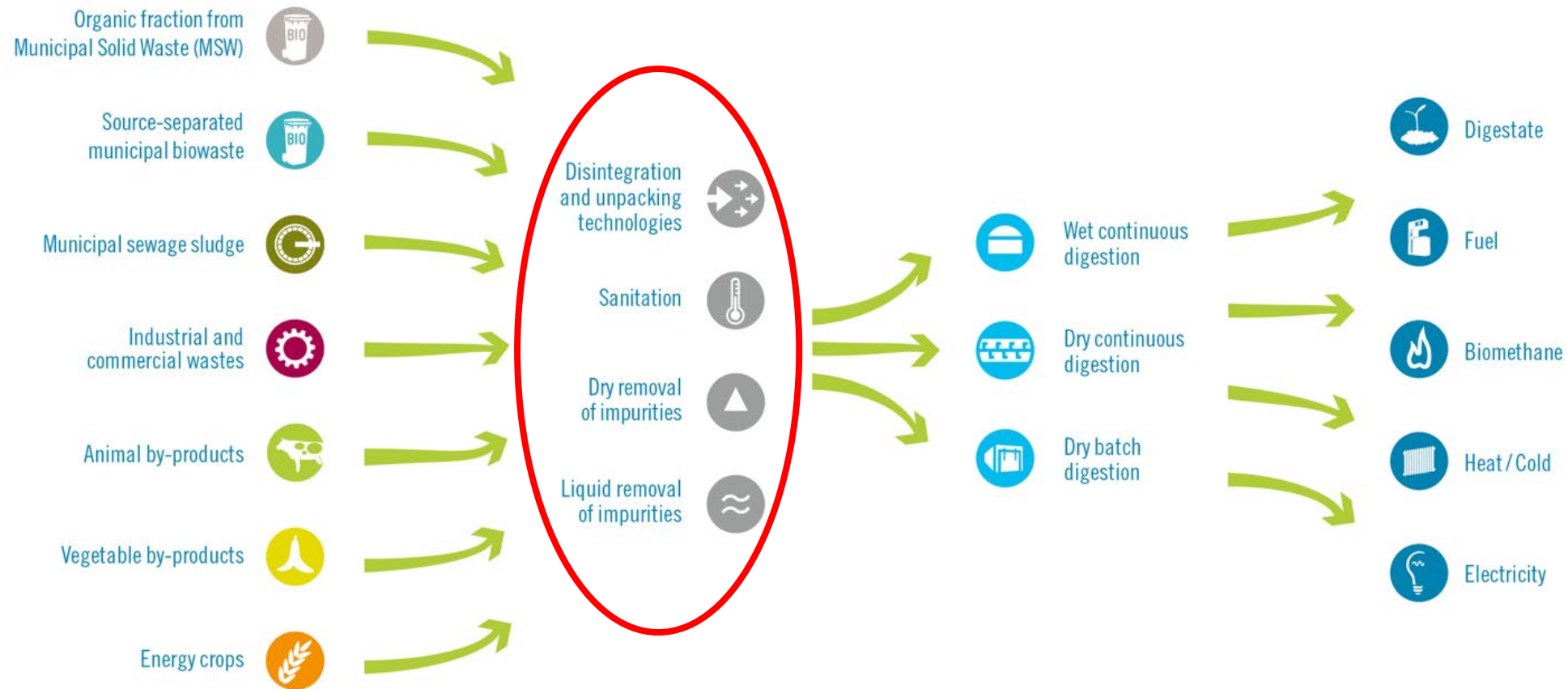
Vielen Dank, dass Sie trennen!*



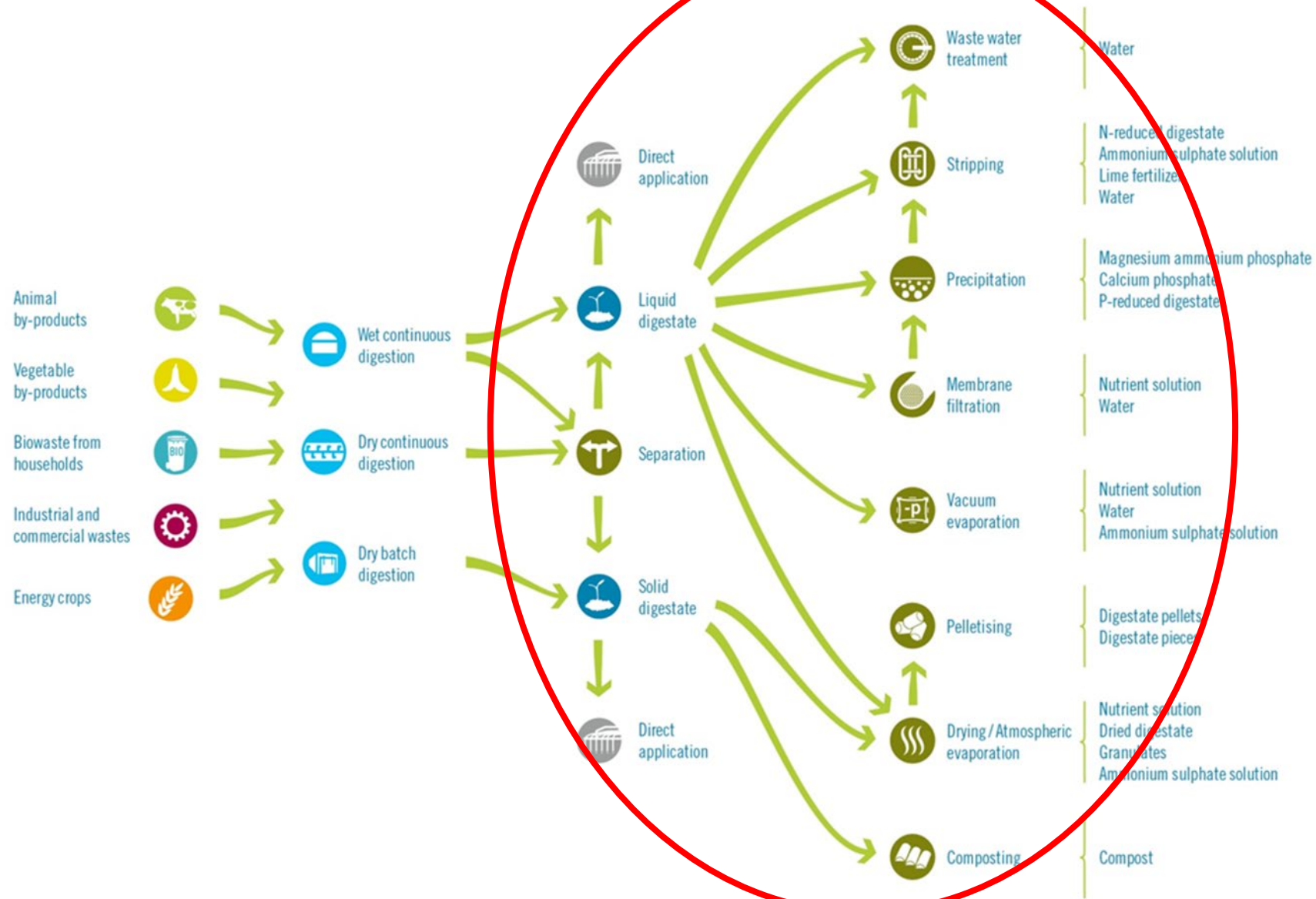
Biogas kann's!

*Aus einem Kilogramm Bioabfällen produziert eine Biogasanlage 240 kWh Strom.
Je weniger Plastik in der Biotorne landet, desto sauberer der Dünger und desto höher die Energieausbeute! www.biogas.org

Feedstock preparation

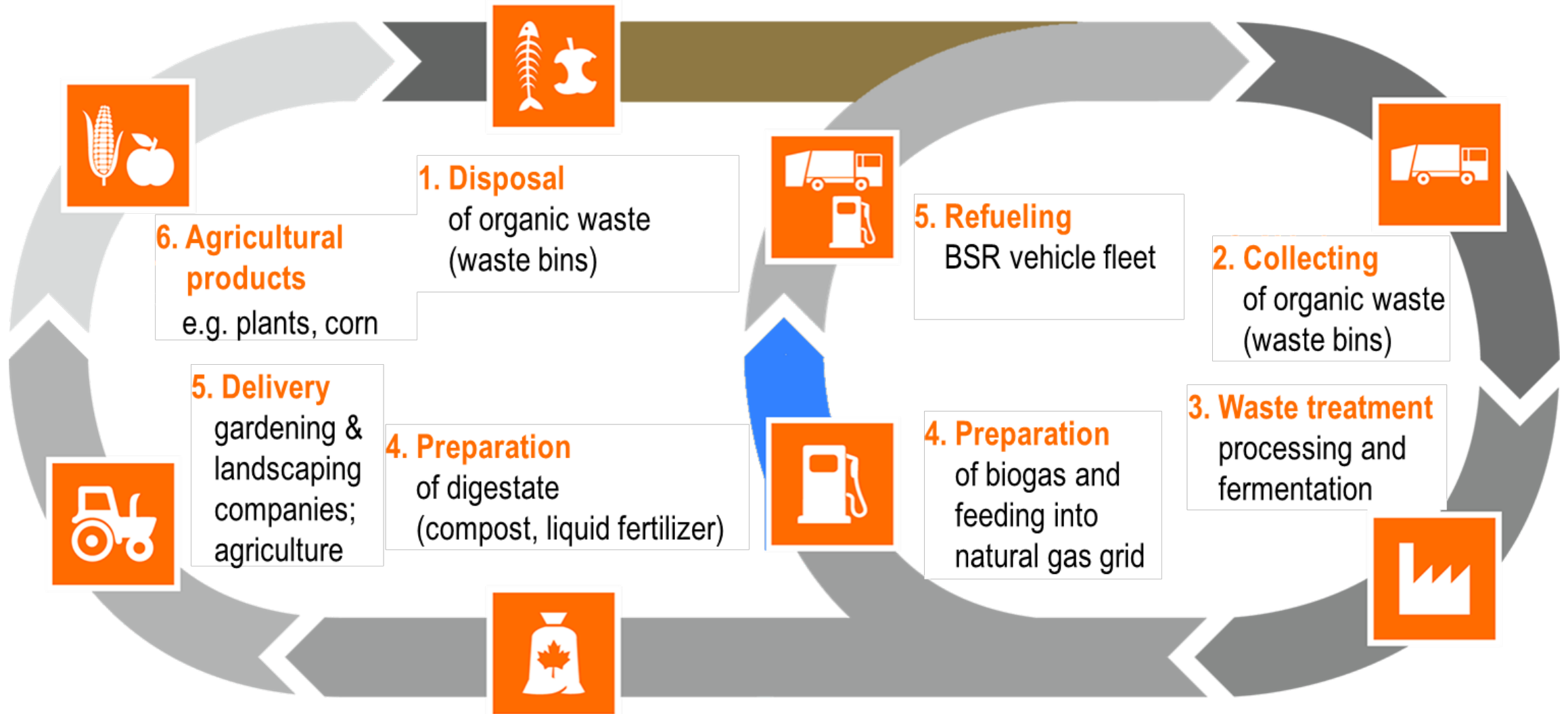


Digestate upgrading



Example: Circular Economy in Berlin

Bio-CNG from organic waste for garbage trucks



Example, Biowaste to biomethane in Berlin



Bioenergy Villages

A **Bioenergy Village** covers a large part of its own electricity and heat needs using mainly regionally supplied biomass.

Experience: In 2005, Jühnde in southern Lower Saxony became the first bioenergy village.

More than **200 bioenergy villages** in Germany

Local heating networks of the bioenergy villages currently supply around **25,000 households** with heating and hot water.

Sources:

The Agency for Renewable Resources (Fachagentur Nachwachsende Rohstoffe e.V. or FNR) <https://bioenergiesdorf.fnr.de/>

FvB: Biogas Journal 4_2022

Principals of Bioenergy Villages

The **citizens are involved** in the **decision-making processes** and actively support the idea of the bioenergy village.

The **bioenergy plants** are at least partly **owned** by the **heat customers** or **local farmers**.

The sustainably provided biomass comes from the immediate surroundings.
This increases the value added **locally**.

The generation of **heat** and **electricity** from biomass can be **complemented** by the use of **other renewable energies**.

International activities of GBA

- International affairs department has 6 staff members
- Supporting members with information about the international biogas markets
- Implementation of international projects
- Consulting services for the promotion of the biogas technology in new markets
- Supporting Biogas Associations, Biogas Know-How and Trainings worldwide
- Cooperation with international organizations





Chamber and Association Partnership Project



Project Partners:

German Biogas Association and Indian Biogas Association

Main objective:

Improvement of the institutional framework and the use of biogas in India

Project time frame:

Dec 2015 – November 2018, December 2018 – May 2022



Financed by the German Federal Ministry of Economic Cooperation and Development and managed by [sequa gGmbH](#)

Applied bioenergy research at the DBFZ

Brief introduction



Who we are and what we do

❖ Who we are...

- Type of company: Limited liability company
- Owned by the Federal Republic of Germany (Ministry of Agriculture)
- Approx. 300 employees
- Four departments

❖ What we do...

- Applied research on biomass utilization
- Consulting for ministries (approx. 20 %)
- Third party funding (approx. 70 %)
- Research for industry (approx. 10 %)

❖ Our strengths...

- independent research
- interdisciplinary competences
- applied science (lab to practical scale)



Meet our Biogas know-how series

AVAILABLE ONLINE



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