



Processing the bioeconomy's residual streams through digestate valorisation

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Biogases – current policy context

➤ Importance to reduce dependency on fossil fuels including for nutrients

Accelerate EU (22 April 2026)

Biogas and biomethane can also play a more strategic role in **replacing imported fossil fuels**, particularly in sectors where electrification is more difficult. Biomethane production in existing plants could be increased by about 10% to 30%. On-farm and cooperative biomethane projects can **reduce fossil fuel dependency** while providing additional income for farmers and creating local value, particularly in rural areas, by **converting waste, residues and manure into energy and fertilisers**. Finally, circular solutions for biogas, biomethane and **recycled nutrients** can **strengthen resilience, help competitiveness and reduce exposure to global price shocks**.

[2026 onwards] *On **biomethane**, the Commission will continue supporting initiatives to advance the production of gaseous molecules of non-fossil origin, including sustainable biogas and biomethane in line with REPowerEU⁴² including on-farm and cooperative biogas and biomethane projects^[OJB] taking careful consideration to the scaling up of existing plants, reducing permitting bottlenecks and improving the transport of sustainable feedstock across regions.*

Tripartite agreement for biogases

REPowerEU roadmap

The roadmap is the EU's strategy to remove Russian oil, gas and nuclear energy imports from EU markets in a gradual and coordinated way.

Adopted on 6 May 2025



Action 4: Supporting diversification by demand aggregation and better use of infrastructure

Building on the successful conclusion of the Biomethane Industrial Partnership, the Commission will set up a new biogas network of Member States as part of a **tripartite contract** to better address the diverging needs in different areas of the EU and include national and local stakeholders.

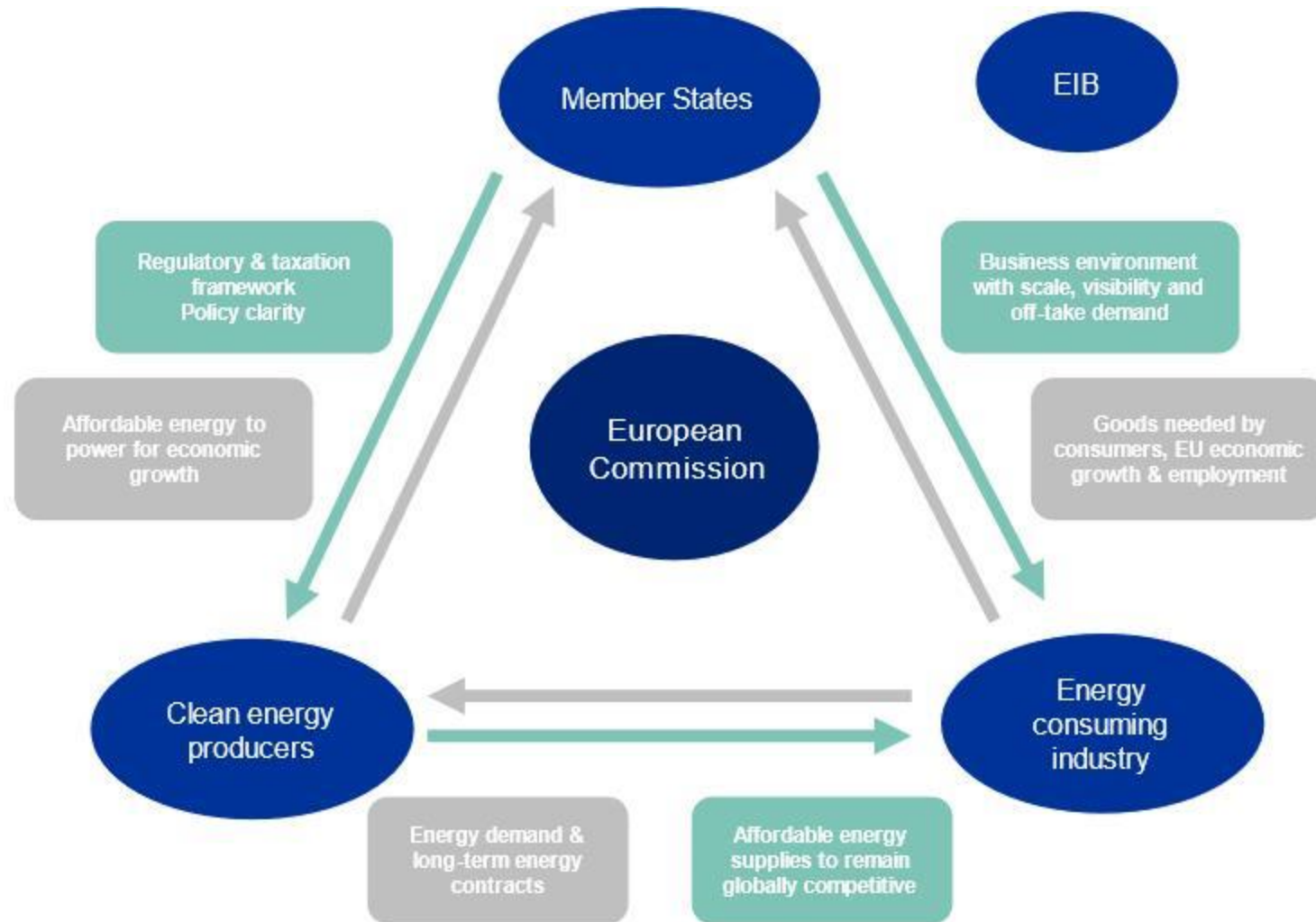
Stemming from Affordable Energy Action Plan

Action 6 – A tripartite contract to ensure affordable energy for Europe's industry

To counteract high energy prices and market uncertainty, a broader tripartite contract for affordable energy can bring together the public sector, energy producers, and energy-consuming industries to create a favourable investment climate, facilitating a [competitive EU industrial sector](#), while ensuring the retention and creation of quality jobs.



Tripartite Agreements for affordable energy for Europe's industry



Policy initiatives stemming from the BIP



Strengthen the network of policy officers across the MS working on bCH4



Produce more biogases from the same feedstock → retrofiting the existing AD plants



Make biogases more affordable → circular (bio)economy business models with biogas, digestate and biogenic CO2



Engage stakeholders across the chain, before and after biogas happens



Support MS to optimize permitting process



Single market



Coordination

⇒ **Digestate valorisation helps closing the gap between fCH4 and bCH4.**
Objective: narrowing the cost range reported 50-190 €/MWh

BIP legacy on digestates



BIOMETHANE INDUSTRIAL PARTNERSHIP

IMPROVING DIGESTATE VALORISATION: NOVEL TECHNOLOGIES & RESEARCH NEEDS

SEPT. 2024 // PREPARED BY TASK FORCE 5



BIOMETHANE INDUSTRIAL PARTNERSHIP

USE AND VALORISATION OF DIGESTATES: A PRACTICAL REVIEW

DEC 2025 // PREPARED BY TASK FORCE 2



Digestates' return to soil...

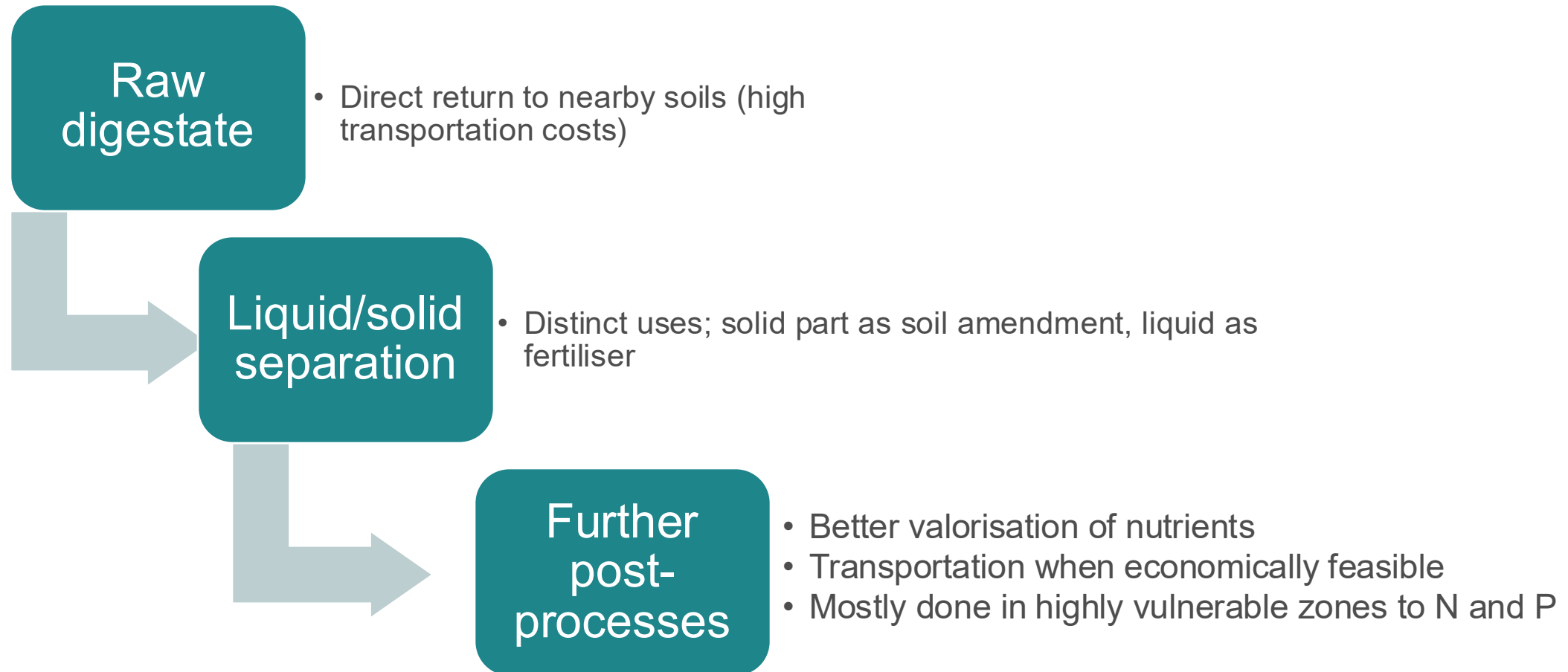
... allows reducing GHG emissions in (at least) 3 ways

... fosters the European food security and independency

- Substituting fossil gas or electricity
- Reducing methane otherwise emitted by the initial feedstock (if landfilled or spread)
- Substituting fossil-based fertilisation

- Substituting of mineral fertilisation
- Nutrient recycling and management
- Contributing to soil healthy conditions
- Reducing dependency on natural gas and phosphate rocks

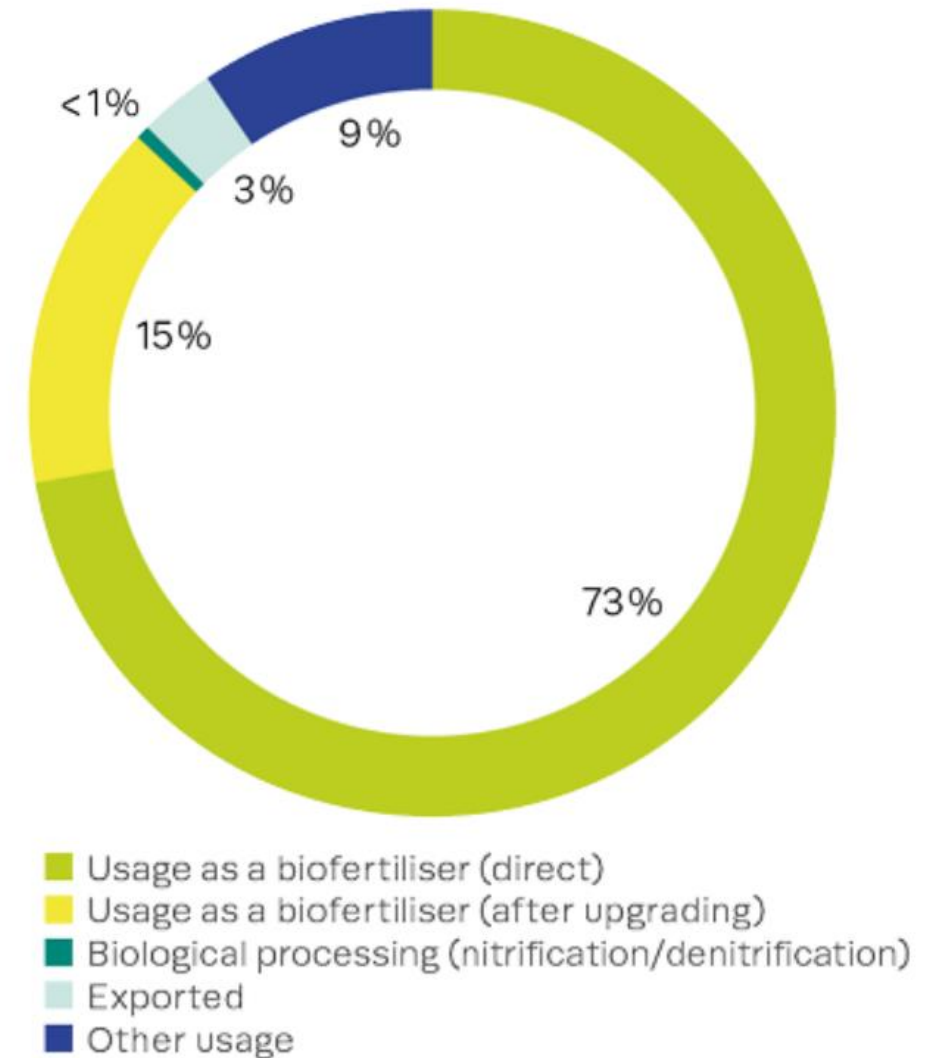
Digestate are mostly used raw or separated



Digestates: a useful organic fertiliser replacing fossil nutrients

Figure: Digestates end uses in Europe

Source: EBA, Exploring digestate's contribution to healthy soils, 2024



Untreated digestates...

... present higher benefits than the initial feedstock for soil and plants

- Fertilising efficiency
- Neutral or positive impact on soil organic carbon & microbiology
- Reduced pathogens

Untreated digestates...

... present risks that can be mitigated by implementing good practices for their use

- Ammonia and methane emissions during storage and spreading
- Nitrates leaching
- Contaminants



Untreated digestates...

... can't be spread in certain regions of Europe where processes are used to transform digestates into exportable fertilising products

- Review of existing processes
- Commercial stage (> TRL9)
- Many with economic model
- However facing barriers for further growth and market deployment

- ❖ Thermal drying
- ❖ Composting
- ❖ Ammonia stripping
- ❖ Struvite
- ❖ Biochar
- ❖ Plasma treatment

Digestate-based...

... biobased organic and organo-mineral fertilisers

- Present benefits for soil and plants, typically higher than untreated digestates
- Can have a business case
- Face market barriers to their further deployment

Thank you