



POWER4BIO
REGIONS FOR
BIOECONOMY



Cross visit Czech Republic 30.11-1.12. 2020

DAGMAR MILEROVÁ PRÁŠKOVÁ (Institute for Circular Economy):
Circular (bio)economy in the Czech Republic

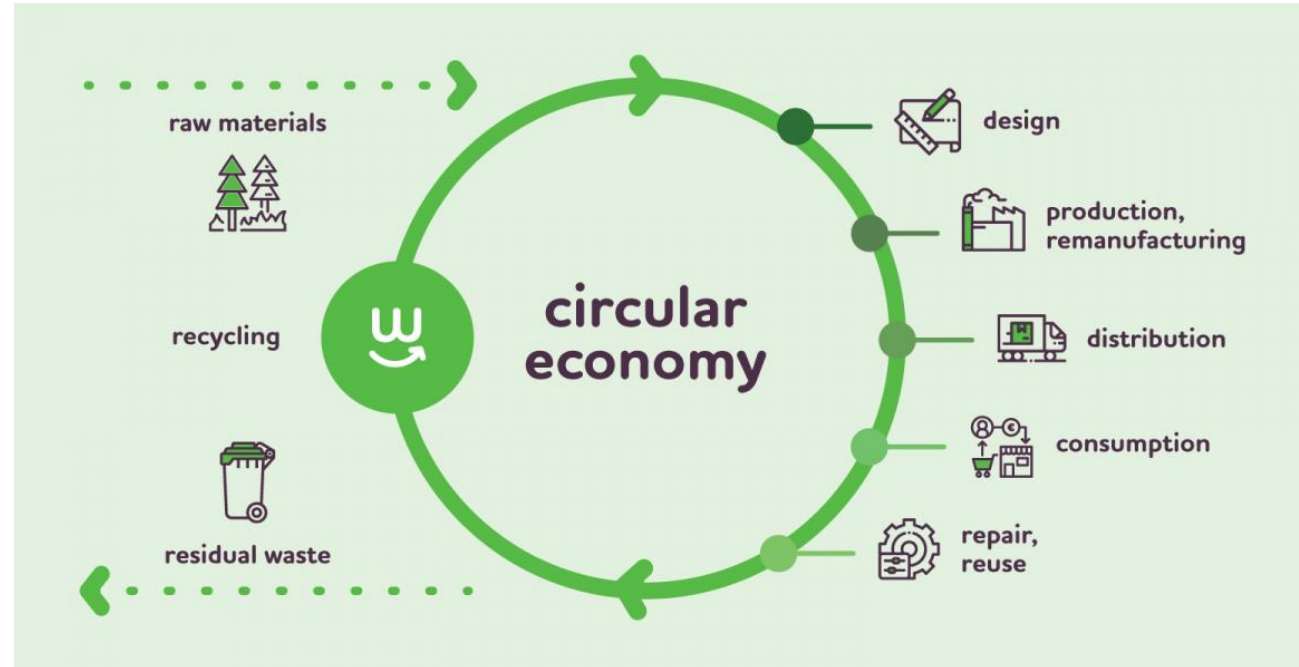
This project has received funding from the European
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CIRCULAR ECONOMY

From linear economy model (make – use- waste) to circular economy (reduce – reuse – recycle)

→ 48% of waste end up in landfill but 75% of this waste could be recycled!



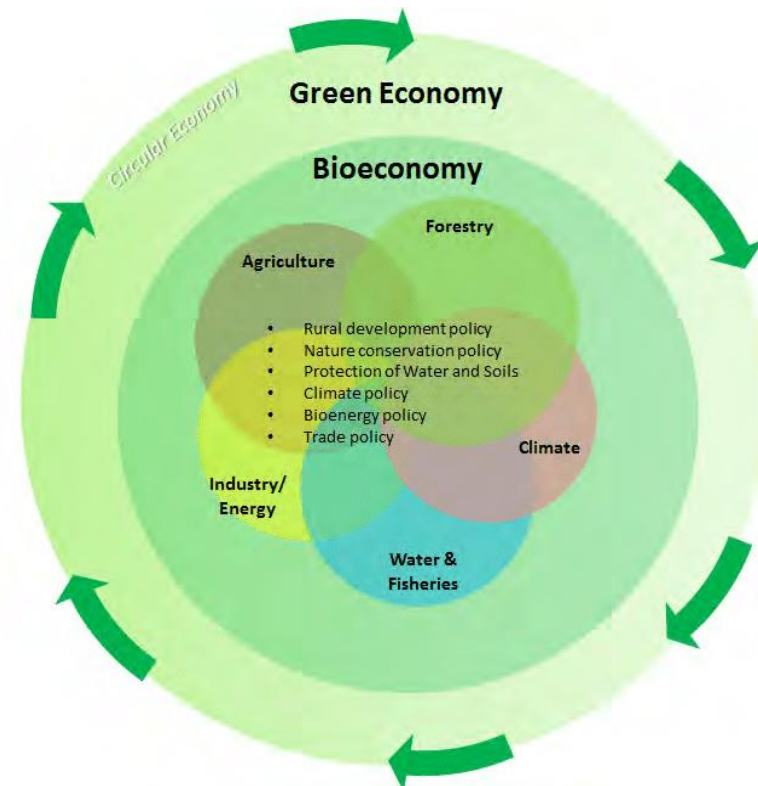
BIOECONOMY AND CIRCULAR ECONOMY



Academic debate

I) Bioeconomy as a part of circular economy

Filip Aggestam in Sotirov et al. (2016)



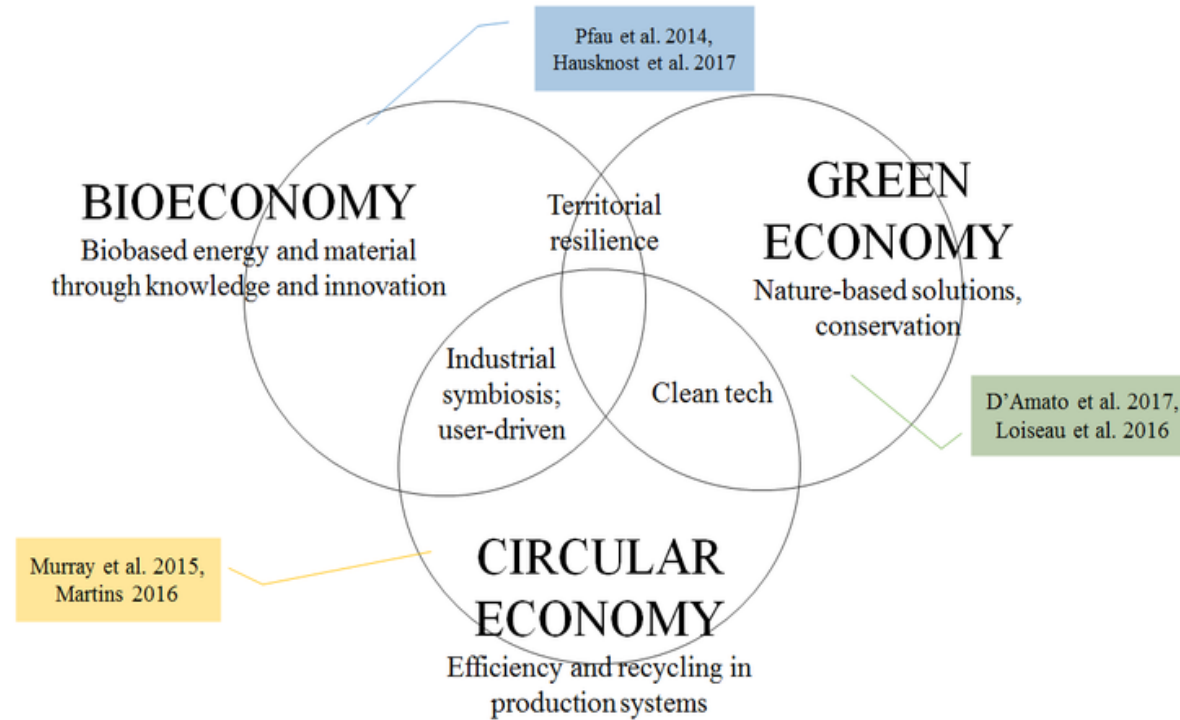
BIOECONOMY AND CIRCULAR ECONOMY



Academic debate

II) Bioeconomy as one of the 3 sustainability paths

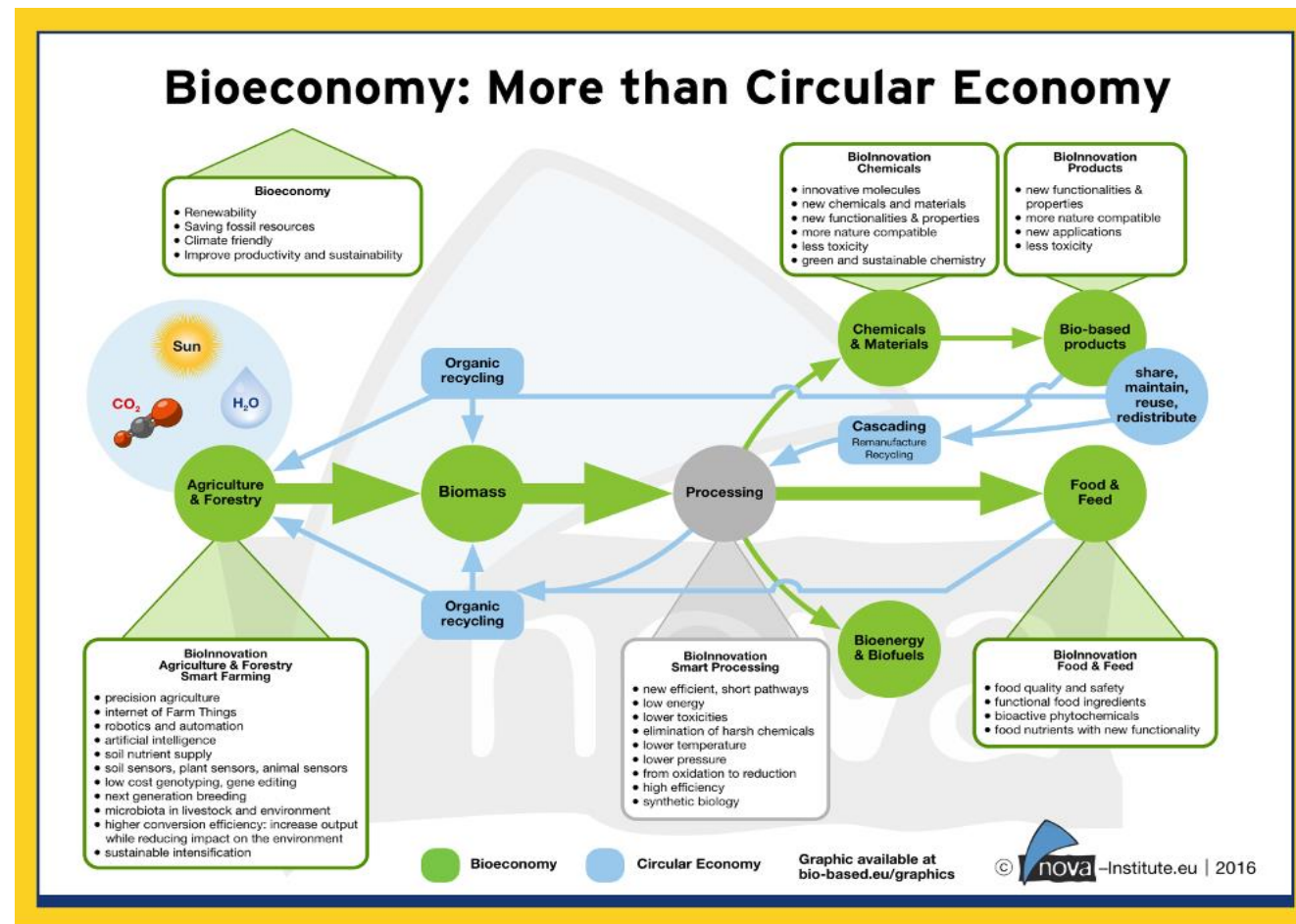
Dalia D'Amato (Helsinki University)



BIOECONOMY AND CIRCULAR ECONOMY

Academic debate

III) Bioeconomy as a roof structure Nova Institute (Germany)



BIOECONOMY AND CIRCULAR ECONOMY

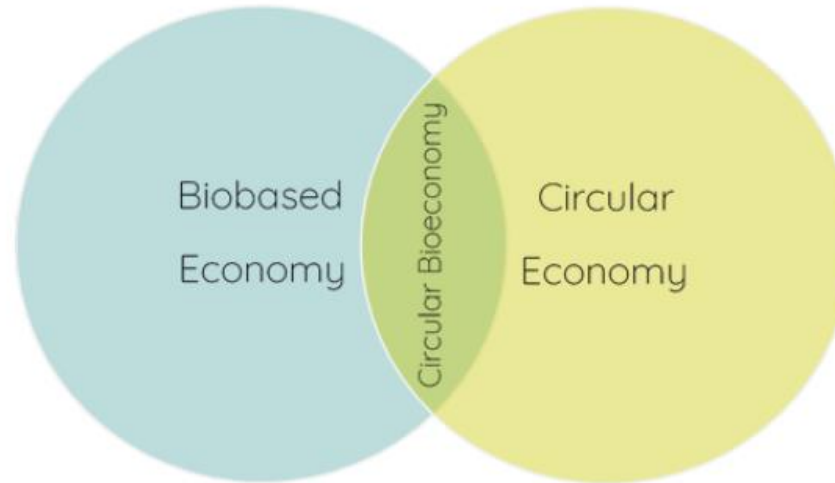


Academic debate

IV) Circular bioeconomy

Carus, Dammer (2018)

- In line with 3 pillar of sustainability



- Bio-based products
- R-strategies
- Cascading use
- Utilization of organic waste streams
- Resource-efficient value chains
- Organic recycling, nutrient cycling

CIRCULAR BIOECONOMY IN CZECHIA



WHAT WE DO?

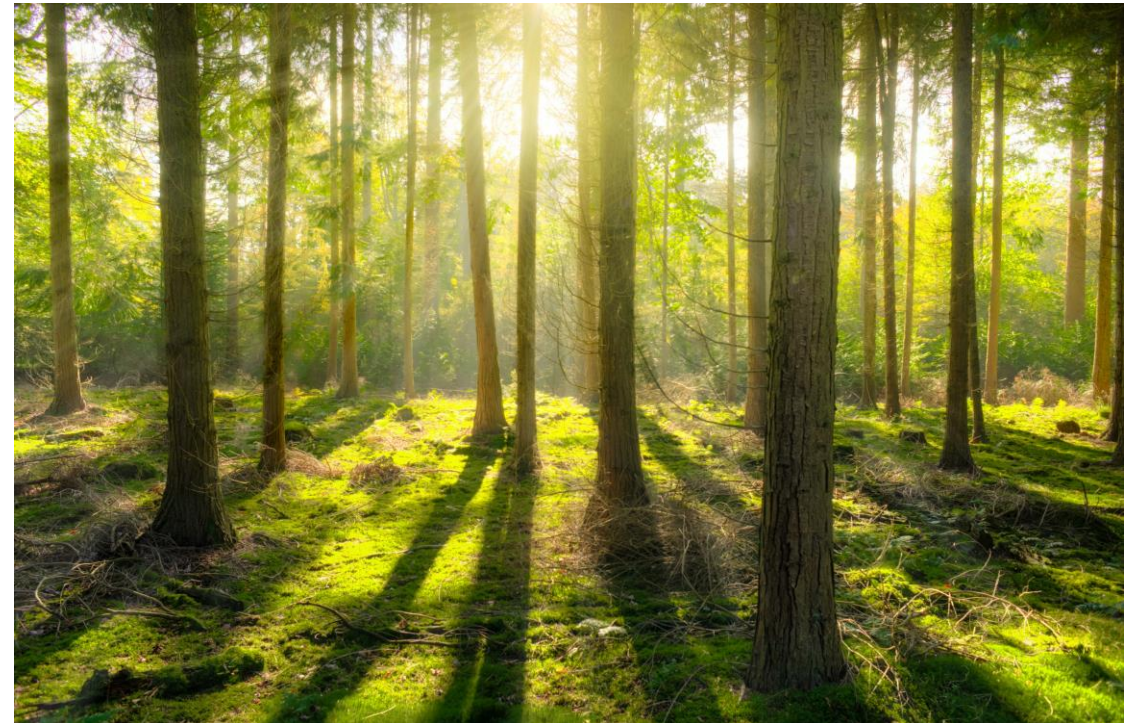
FORESTRY – Technology agency (TAČR) project

- Wood industry traditional (less wood in 10 years)

PESTLE analysis, MFA (bark beetle wood)

- Political: Department barriers
- Economic: Consumption habit barriers
- Social: Manpower shortage barriers
- Technological: connected with logging, transport (road load), storage, and production/recycling barriers
- Legislative: Absence of harmonization policy
- Environmental: Climatic barriers

Solution – RECYCLE; SEPARATE WOOD WASTE; CASCADING RECYCLING, LOCALISATION OF PRODUCTION & CONSUPTION



CIRCULAR BIOECONOMY IN CZECHIA



WHAT WE DO?

AGRICULTURE – focus on self-sufficient farms (e.g. Choťovice)

- 1) Unsustainable use of productive resources
- 2) Negative impacts of climate change (drought)
- 3) Challenges linked to the European Green Deal and Farm to Fork Strategy (greening agriculture vs. strong large-scale farming lobby)
- 4) Consumer patterns – reduction of food waste, localised and seasonal production



CASE STUDIES

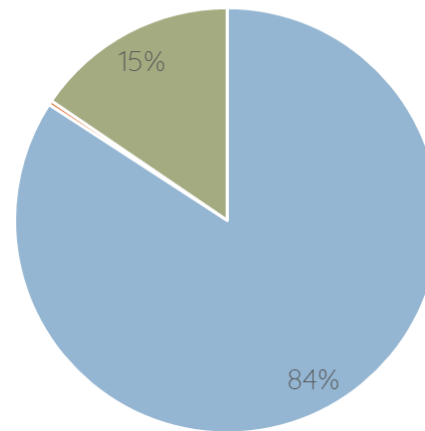


WHAT WE DO?

AGRICULTURE – use of residual biomass survey (case of straw): 89% Association of Private Farmers

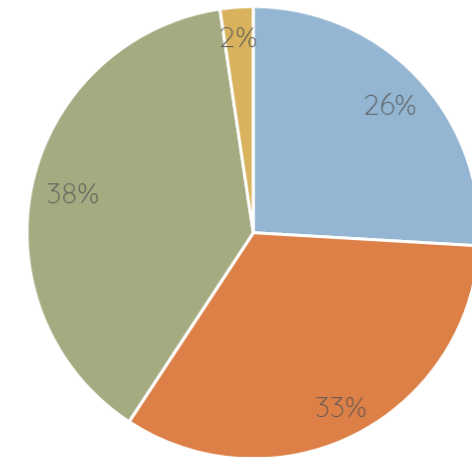
Why? Loss of biodiversity (case of Kutná Hora power plant using only straw for heat and electricity)

a) How do you handle straw?



- I use it only for my own purposes
- I sell all the straw
- Part I use part I sell

b) What are the own purposes for which you use straw?



- Ploughing it back
- Animal bedding
- Both (partly animal bedding and ploughing)

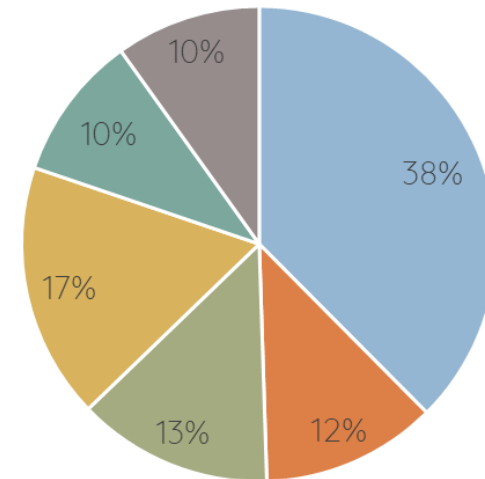
CASE STUDIES



AGRICULTURE

→ main result: it should not be considered as a waste but valuable agricultural asset

How much straw do you think should stay on the field after its been harvested?



- All straw should stay on the field
- All straw can be removed from the field
- At least 75 % of straw should stay on the field
- At least 50 % of straw should stay on the field
- At least 25 % of straw should stay on the field
- I don't know

CASE STUDIES: RECOMMENDATIONS



- 1) **A coherent national strategy** on the suitable end-uses should be established.
- 2) The **biomass mobilization should be regionally based**, and these areas should be supported in creating their own bioeconomy strategy.
- 3) Retaining or increasing the **soil quality should be priority** in all instances when extracting biomass.
- 4) Generally, mobilizing agricultural residual biomass directly into **bioenergy facilities shouldn't be supported due to the direct loss of value**, low added value and due to the negatively exacerbating effect on soil quality levels. **Other forms of providing energy** such as solar and wind should be supported instead of biomass.
- 5) Other forms of renewable transport fuels should be explored (biomethane, hydrogen).
- 6) **Biomass**, be it residual or crop, **should be directed primarily towards bio-based industries with very high value-added utilizations** (e.g. biochemicals such as cosmetics or man-made fibers).
- 7) **economic valuation of cascading was pronounced, i.e. using biomass in high-value added business.**
- 8) **Clear intersection between forestry and agriculture in the bioeconomy strategy should be made.**
- 9) **Biodiversity should be an important element in designing any bioeconomy strategy.**

CASE STUDIES



Transport & green energy – alternative to natural gas

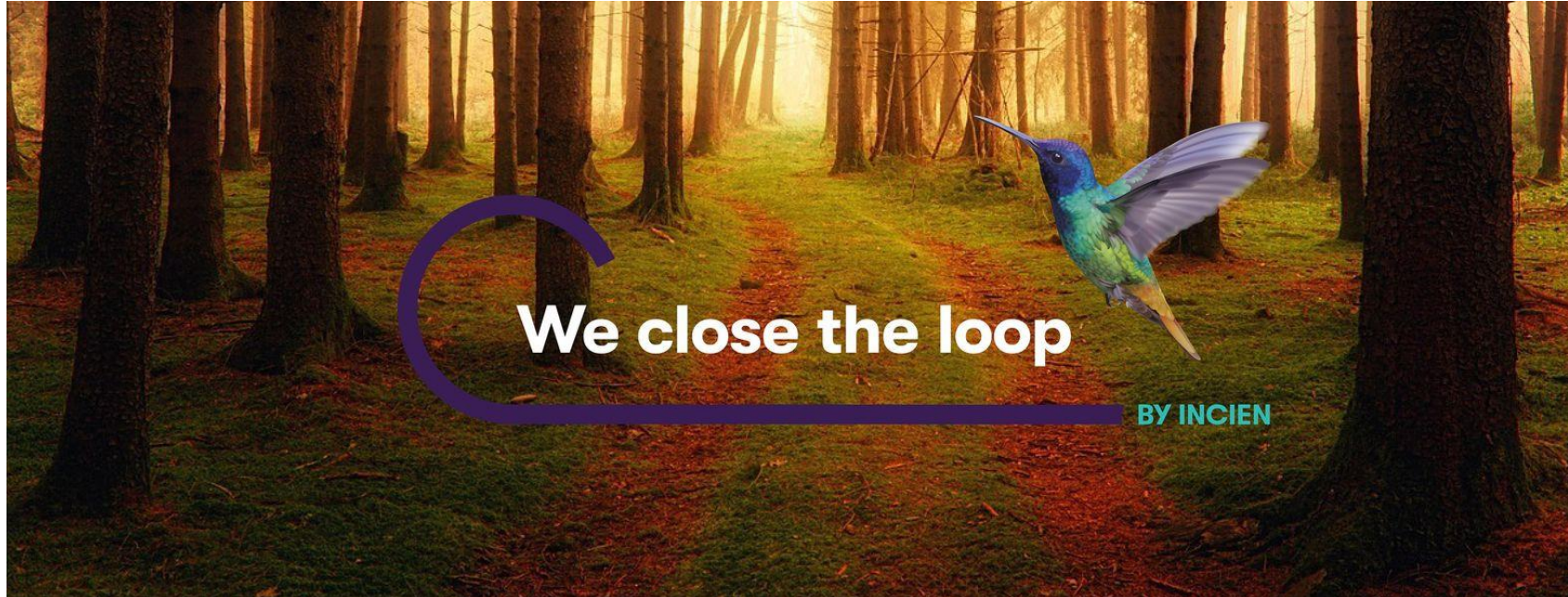
- **pilot project:** buses in Brno power by biomethan (BioCNG) made from biowaste and human waste (biodegradable waste)
- it works already in Finland, Norway, Sweden, Germany, Poland, France, UK or India
- main promoter: Petr Novotný (INCIEN) – common technology in 2030
- Cooperation with the city, transport company and sewage disposal company, expert company MemBrain
- Energy Globe prize for enterprises
- More info in Czech: www.zajimej.se



FINAL WORD



→ We must consider every waste as a source! Reduce waste, localise production and focus on biological waste as the greatest potential.



POWER4BIO website and social media



www.power4bio.eu



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Thank you for your attention

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