Closed loop systems for organic waste valorisation by local authorities
Transition to a more sustainable way of using regional resources

The German Federal State of Saarland provides sound conditions to promote a regional transition towards a Circular Economy Society. Separately collected organic household waste volume of 52,000 tons per year, 85,000 tons per year of municipal collected greenery cuttings and 18,700 tons dry matter of sewage sludge (2011) pose potential to contribute to regional climate protection targets and sustainable growth. ARBOR demonstrates sustainable closed loop strategies, shifting the general public disposal order into resource efficient supply services.

The study was conducted by IZES gGmbH and co-financed by the Ministry of Economy, Employment, Energy and Traffic Saarland (MWAEV) and the Disposal Agency Saar (EVS).

Saarland strategy development for a sustainable organic waste and greenery cuttings valorisation
Aim: Respond to heterogeneous recycling concepts and export of bio waste
- Decentralised collection and recycling hubs
- Resource efficiency and renewable energy production via thermophile composting, anaerobic digestion, integrated thermo-chemical processes (pyrolysis, HTC) as well as efficient heating systems
- Amendment of Saarland Waste Legislation
- Cross-border synergies with the French region of Lorraine

Saarland strategy development for a sustainable sewage sludge valorisation
Aim: Respond to the future legal ban on direct agricultural appliances
- Decentralised pyrolysis/ hydrothermal carbonisation for phosphorus recycling, bio char fuel production
- Mono-Incineration for phosphorus recycling, electricity production and heat recovery
- Cross-border synergies with the GRAND REGION “SaarLorLux”

Saarland strategy development for a sustainable landscape material valorisation in the UNESCO Biosphere Reserve Bliesgau
Aim: Examination of the potential of extensive landscaping (as a nature conservation measure) to serve as a source for bioenergy supply
- Material is currently used as fodder or as litter in livestock farming
- Testing of different qualities of landscape materials for combustion purposes
- Introduction of innovative bioenergy concepts for the nature conservation area: dry fermentation process (input mix of landscaping material, municipal greenery cuttings and horse straw; manure pocket digesters)

Regular meetings of the ARBOR Saarland Task Forces “Organic Waste” and “Sewage Sludge” [2011–2015], environmental and socio-economic assessments for all ARBOR scenarios as well as scientific review at the ARBOR Transnational Advisory Board Meeting [10/2014] guarantee the strategic fit of the outcomes.