Introduction to ARREAU
Accelerating Resource Recovery from the water cycle

EIP-Water conference
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Theo van den Hoven & Kees Roest
Agenda today

- Welcome and short introduction to ARREAU (15 min.)
- Presentations progress ARREAU working groups (15 min. each)
  - Phosphorus
  - Cellulose
  - Drinking Water
  - Cross-cutting issues
- Break (30 min.)
- R3Water project (Uwe Fortkamp, 10 minutes)
- Financial instruments (15 min.)
- Discuss ARREAU Action Plan 2016 (30 min.)
- Concluding remarks
- AOB
European Innovation Partnership on Water
New EC instrument to boost innovation

• Launched in May 2012 to
  • Facilitate, support and speed up development and application/deployment of innovative solutions to water challenges
  • Create market opportunities for innovations

• High level governance and visibility

• Strategic Implementation Plan
EIP-Water

Cross-cutting issues
- Water governance
- Decision support systems and monitoring
- Financing for innovation

Water-reuse and recycling
Water and waste water treatment, including recovery of resources
Water-energy nexus
Flood and drought risk management
Ecosystem services

Smart technology

Vision and objectives
Start Action Group April 2014

Members 35

Objectives

• Review current European initiatives and best practices
• Identify success factors and barriers for profitable value chains
• Support initiatives on resource recovery and upcycling
Current focus areas

EIP-Water

ARREAU Steering Group

Cross-cutting issues

Working Groups

- Drinking water resources
- Phosphorus from wastewater
- Cellulose from wastewater
- Other resources
Main deliverables

- Review of best practices on recovery of phosphorous and cellulose from wastewater and residuals from drinking water (www.eip-water.eu/arreau).
- A review of barriers and bottlenecks for the valorization of resources from the water cycle.
- Several workshops (e.g. at IWW Amsterdam, November 2015).
- Start discussion with EIB on supportive financial instruments.
Type of drinking water residuals

Processing steps

- Softening
- De-ironing / removal manganese
- Coalulation (removal of very fines)
- De-coloring (removal of humics)
- Activated coal filtration

Main residuals

- Softening pellets
- Lime-sludge
- Lime-Iron sludge
- High grade iron-sludge
- Low-grade Al-/ or Fe-sludge
- Brine
- Activated coal sludge
Recovery and upcycling of resources from water can be profitable

Shared Service Center Dutch Waterworks

- Calcium for glass and carpet industry
- Iron for bricks and S-control in biogas
- Struvite for fertilizer industry

IWA Award
September 2015
Teaming up benefits ....
Recovery and upcycling of phosphorus and cellulose

Phosphorus for fertilizer and basic chemicals market

Cellulose

- Cellulose Fibres
- Direct re-use paper
- Biofuel
- Bioplastic
- Anti-draining additive asphalt
- Bricks
- Flower pots
- Cellulose pellets
- Soil conditioning

CelluCycle
Cados
Cellulose Assisted Dewatering of Sludge
Recovery and upcycling of phosphorus and cellulose from wastewater

- Many local project initiatives
- Several positive business cases
  - Integral value chain assessment
- Partners: water utilities, tech providers, fertilizer companies, chemical industry, (organic) farmers
- Uncertainty about legislation
- Financial risks a key hurdle
  - European Investment Bank opportunity
Cross-cutting issues

- *Need for policy support*
  - Initiatives on Member State level (e.g. Switzerland)
  - EU wide policy development is needed.
- *Governance (building the value chain, defining responsibilities and benefits)*
- *End user acceptance*
- *Finance*

*Large scale demonstrations needed*
Action Plan 2016

- Identify showcases of successful value chains for further dissemination and support
- Explore opportunities to expand the membership to Eastern Europe (continuous) starting with a phosphorous-platform in the Czech Republic
- Further explore relevant European initiatives including industrial waste water in the phosphorous cases (continuous, upload update to EIP-W Marketplace every 6 Months)
Action Plan 2016 continued

- Explore synergy with other Action Groups
- Look for useful cooperation with other European platforms (e.g. WssTP WG Resource Recovery, the European Sustainable Phosphorous Platform) and projects (e.g. R3Water, Value4Urine, Screencap) (continuous).
- Promote large scale demonstrations (continuous)
- Develop market plans (December 2016)