Cellulose from sewage
Why

1. Saving energy (reduction of energy for aeration)
2. Reduction of maintenance costs
3. Recovery of valuable resource
Where

Primary treatment

*From primary sludge*

*From activated sludge*
Harvesting of cellulosic screenings

- In 9 European countries harvesting cellulosic screenings;
- 33 full-scale installations, from which 16 as primary treatment before activated sludge.
- Largest installation The Netherlands for 170,000 pe
- All full-scale applications still PWW (Primary sludge and RAS in lab scale)
Valorisation routes

Impact on downstream processes

Waterboard
Screening toilet paper/cellulose from sewage, using finescreen

Consumer
Toilet paper sewer system

OLAF
Use cellulose as carbon source

Cellulation
Use cellulose as fiber

Processing in asphalt

Optimisation sludge dewatering

Production of PLA

Cellu2PLA
Use cellulose as carbon source

Pyrolyses

CADOS
Use cellulose as fiber

Scirencap
Impact on downstream processes

European Commission

ARREAU
Impact on downstream processes

WwTP Aarle-Rixtel
Capacity: 320,000 PE (150 g TOC/day)
DWF: 2,922 m³/h
FFT: 16,500 m³/h

Finescreen capacity 4,000 m³/h

Co-funded by the Eco-innovation Initiative of the European Union
First results (after 3 months)

- SVI remains 70 -90 ml/l
- No negative impact on removal of P and N
- No negative impact on dewatering of sludge

- Still a significant fraction of cellulose in activated biomass
This project is co-funded by the European commission, through a subsidy under the Eco-Innovation.

Impact on downstream processes

Project partners:

Waterschap Aa en Maas

KWR Watercycle Research Institute

BWA
Recovery of fibers from sewage – one solution
First commercial application
Asphalt based upon toilet paper
So far! Questions?

- "We cannot solve our problems with the same thinking we used when we created them"

- Albert Einstein -