



SMART-Plant

Scale-up of low-carbon footprint
material recovery techniques in existing
sewage treatment plants

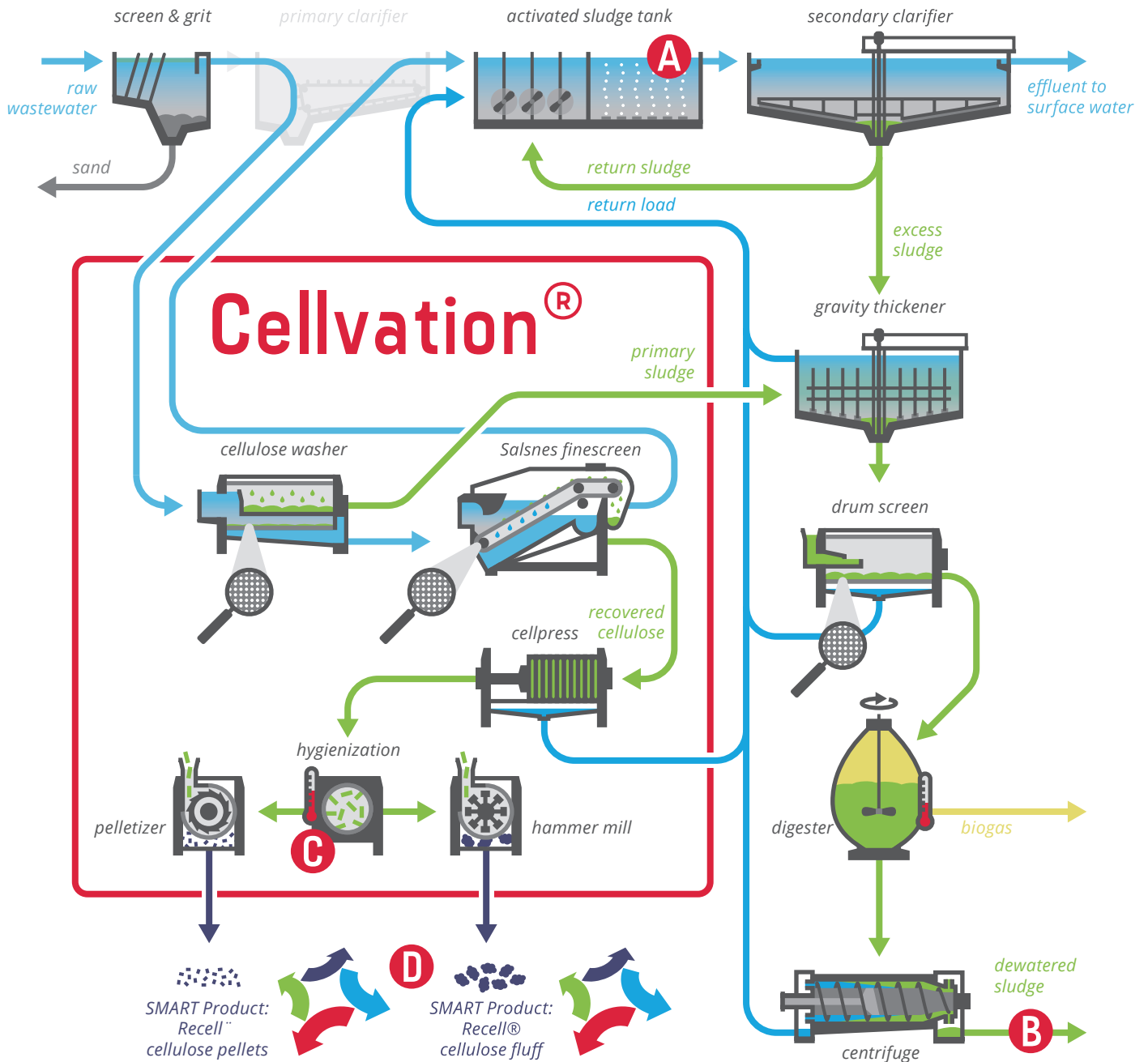


Cellvation® *Cellulose Recovery with Dynamic Sieving as Primary Treatment*

Municipal sewage water contains a high amount of suspended solids, and up to 70% of this material consists of cellulose fibers originating from the use of toilet paper. This cellulose is a valuable resource, but is also puts an additional burden on the wastewater treatment process. CirTec has developed a dedicated process called Cellvation® to separate the cellulose from the incoming sewage water and turn it into clean cellulose fibers: the product Recell®. During primary treatment, a special Salsnes fine-sieve separates cellulosic screenings from sewage water in a separate stage, which is washed and further processed to gain clean cellulose fibers. This product can be reused in construction materials or for down-stream blending with bioplastic such as PHA to form a robust bio-composite material.

Within the SMART-Plant project, a Cellvation® system with a capacity of up to 90 m³/h was installed at the sewage treatment plant Geestmerambacht (Netherlands). It demonstrates the technical feasibility of cellulose recovery and illustrates the potential of this new technology to contribute to a circular economy in the water sector.





Unique Selling Points

- A** Reduction of energy consumption for aeration by up to 20 % and increase of treatment capacity at the plant due to reduction of organic load in the activated sludge process
- B** Reduction of sludge volume which leads to lower polymer use for dewatering and lower sludge disposal costs
- C** Reaching EPA class A rating for the cellulose product
- D** Recovery of a high quality product: clean cellulose fluff or pellets for reuse in road construction (e.g. as additive in asphalt) or as a raw material for bio-composites and other buildings materials