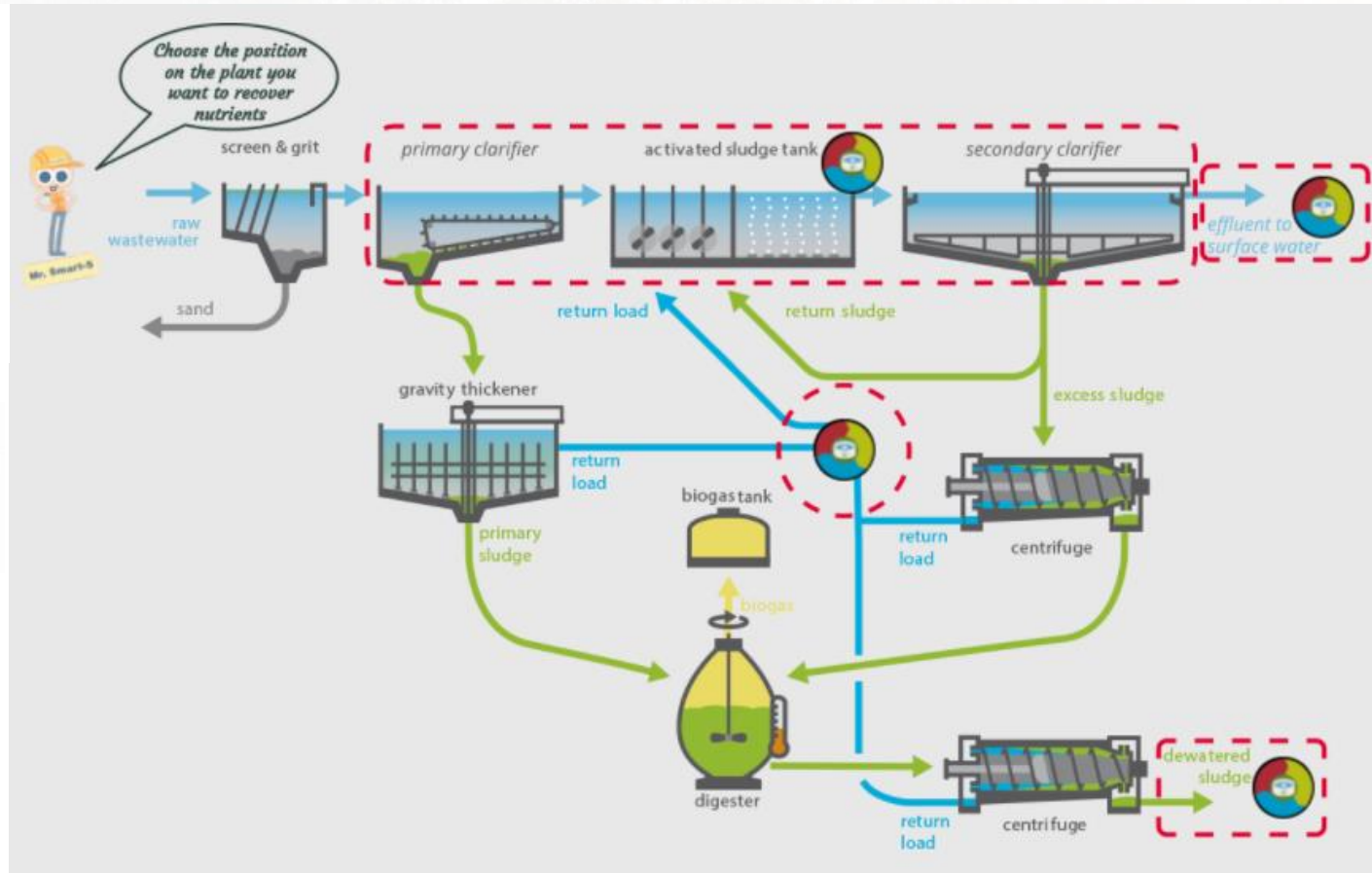


SMART-Plant: long term results and perspectives

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SMARTechs

Where to apply them?



- Ammonia and P recovery from secondary effluents through ion-exchange
- P recovery as struvite in the biological wastewater treatment line
- Producing P-rich sludge through the side-stream treatment of sludge liquor
- Producing P-rich compost through the dynamic composting



SMART – Products

What can you recover? How much?

Long-term evidence based results

- Cellulose 2,0-7,3 kg per PE per Year
 - PHA 1-1,2 kg per PE per Year
 - CaP 0,4-0,8 kgP PE per Year
 - Struvite 0,2-0,4 kg PE per Year
- Ammonia and ammonium sulphate 20-30 kgN PE per Year
- Spent zeolite resin (rich in K and NH₃)
 - Biofertilizer
 - **Energy saving 4-68 %**
 - **GHG emission reduction 1-71 %**
 - **Sludge reduction 18-30 %**



Calcium Phosphate

- High purity product with 13 % P content
- Low impurities (Al < 0.4 mg/g, heavy metals < 0.1 mg/g)
- Used as a raw material for fertiliser, pesticide and chemical production

Aqueous Ammonia and Ammonium Sulphate

- Aqueous ammonia (3 - 7 g N/ L) as raw material for plastic, textile and cleaning products
- Ammonium sulphate (21 % N) as raw material for fertiliser and in chemical production
- Low impurities (heavy metals < 5 µg/L)

Spent Zeolite Resin

- IEX media rich in potassium and ammonia that can be used as a conditioner in composting
- Direct use as slow release fertiliser in agriculture, forestry, energy crops and gardening

Struvite

- Use as a feedstock in fertiliser industry
- Direct use in agriculture, forestry, energy crops and gardening
- Slow-release fertiliser
- High purity and safe for the environment

Biofertiliser

- Direct and safe use in agriculture
- Bio-based fertiliser: nutrient rich stabilised organic amendment
- Demonstrated high agronomic quality equivalent to mineral fertiliser



SMART Products – is the market ready?

