SMART-Plant

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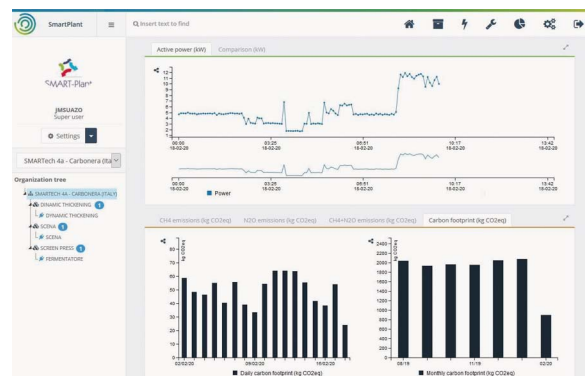
Monitoring

Online Energy and Greenhouse Gas Monitoring and Control

SMART-Technologies for resource recovery aim to move towards low-carbon and energy-efficient wastewater treatment. Real-time monitoring of energy demand and greenhouse gas emissions during process operation is crucial to inform operators on the actual performance of SMARTechs, optimise their operation, and detect process disturbance. Based on data from energy meters and greenhouse gas sensors Wellness Smart Cities has developed a web application platform to continuously record and display energy consumption and operational carbon footprint of the processes together with sustainability indicators and other metrics conventionally monitored in wastewater treatment.

In the SMART-Plant project, Wellness Smart Cities physically installed real time energy consumption and greenhouse gas meters at all demonstration sides. All measured variables are directly shown in an online tool to give the plant operator optimal insight and control. On top, Brunel University developed structured approaches to analyse heterogenous data from online sensors and laboratory analyses such as data mining techniques for pattern recognition, dependencies identification, and outliers detection.
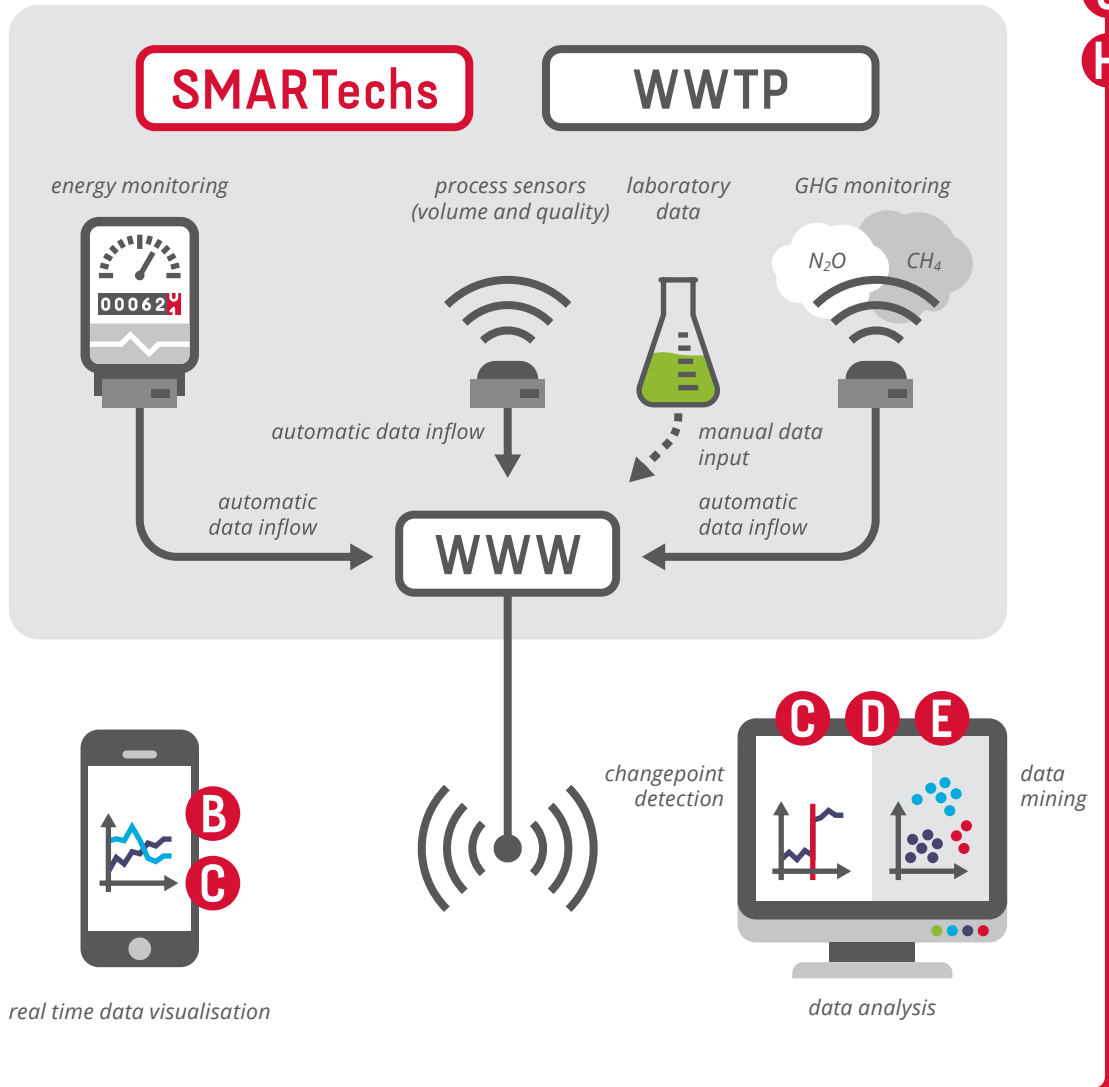

WWW.SMART-PLANT.EU

Monitoring

Online Energy and Greenhouse Gas Monitoring and Control

A
F
G
H

SMARTechs   WWTP

energy monitoring

00062

process sensors (volume and quality)

laboratory data

GHG monitoring

N_2O CH_4

automatic data inflow

manual data input

automatic data inflow

automatic data inflow

WWW

B
C

real time data visualisation

C D E

changepoint detection

data mining

data analysis

Unique Selling Points

A Real-time monitoring of energy demand and greenhouse gas emissions

B Actionable insights 24 hours a day

C Detection of process irregularities

D Identification of operational modes to mitigate greenhouse gases

E Integration of monitored data to build prediction models

F Compatible with multiple technologies and manufacturers

G Easily integrated with other sensors

H Reduction of operational costs by process optimisation

i www.wellnesstg.com
info@wellnesstg.com

Brunel University London

Wellness TechGroup