



BOOSTING ENERGY PRODUCTION THROUGH CO-DIGESTION

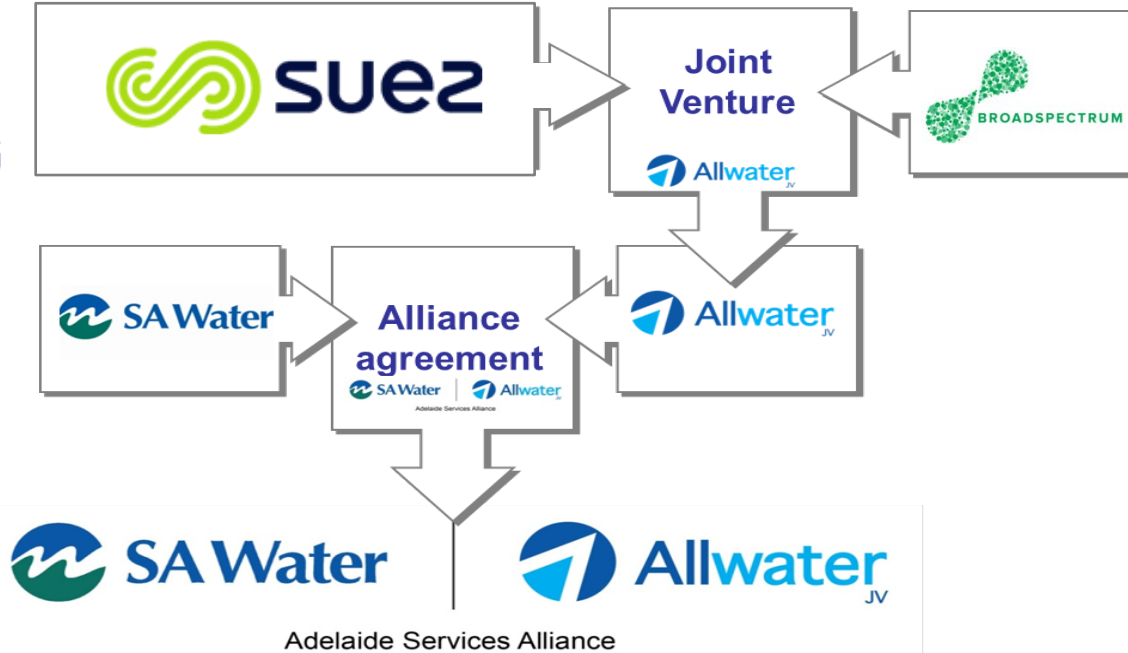
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1. Allwater, Adelaide Services Alliance, Adelaide, SA, Australia
2. SUEZ, Paris, France
3. SA Water Corporation, Adelaide, SA, Australia

Who is Allwater?



Serving 1.3 million customers living and working within the Adelaide metropolitan area



Who is Allwater?



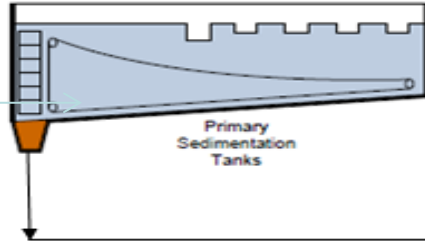
- Allwater operate and maintain:
 - 6 water treatment plants & 8,900 km of water mains
 - 6 wastewater treatment plants & 7,200 km sewer mains
 - 4 wastewater & 3 stormwater reuse schemes
 - Over 400 pumping station & fan sites



- 55 ML/day –IFAS+MLE plant
- Primary Sludge
- Thickened Waste Activated Sludge
- 5 Anaerobic Digesters 3.2 ML each



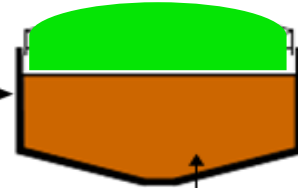
Process at Glenelg WWTP



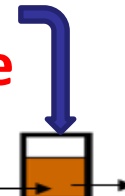
Primary Sedimentation Tanks



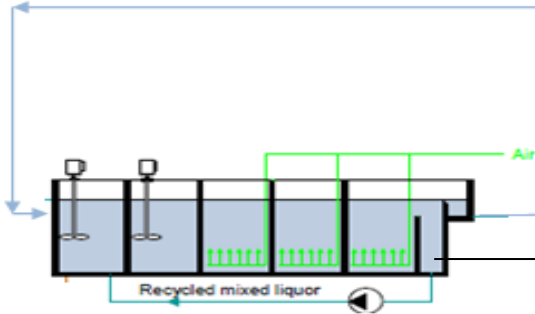
Aerobic
Digesters



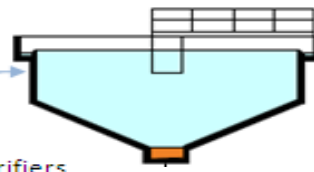
**Trade
Waste**



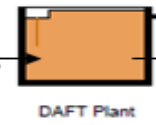
Thickened Sludge
Holding Tank



Bioreactors



Clarifiers



DAFT Plant



Co-Digestion Process

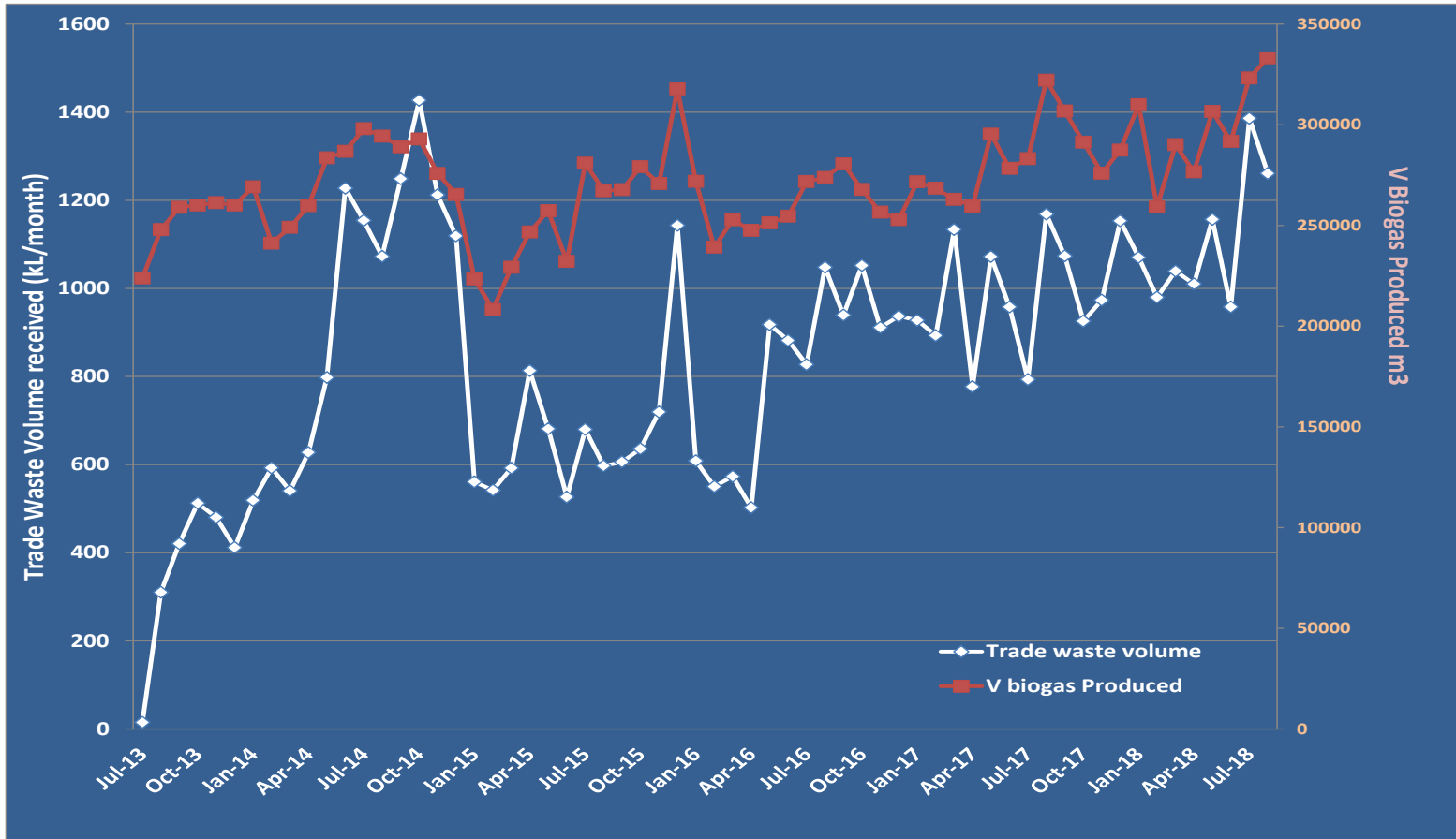


Substrates received

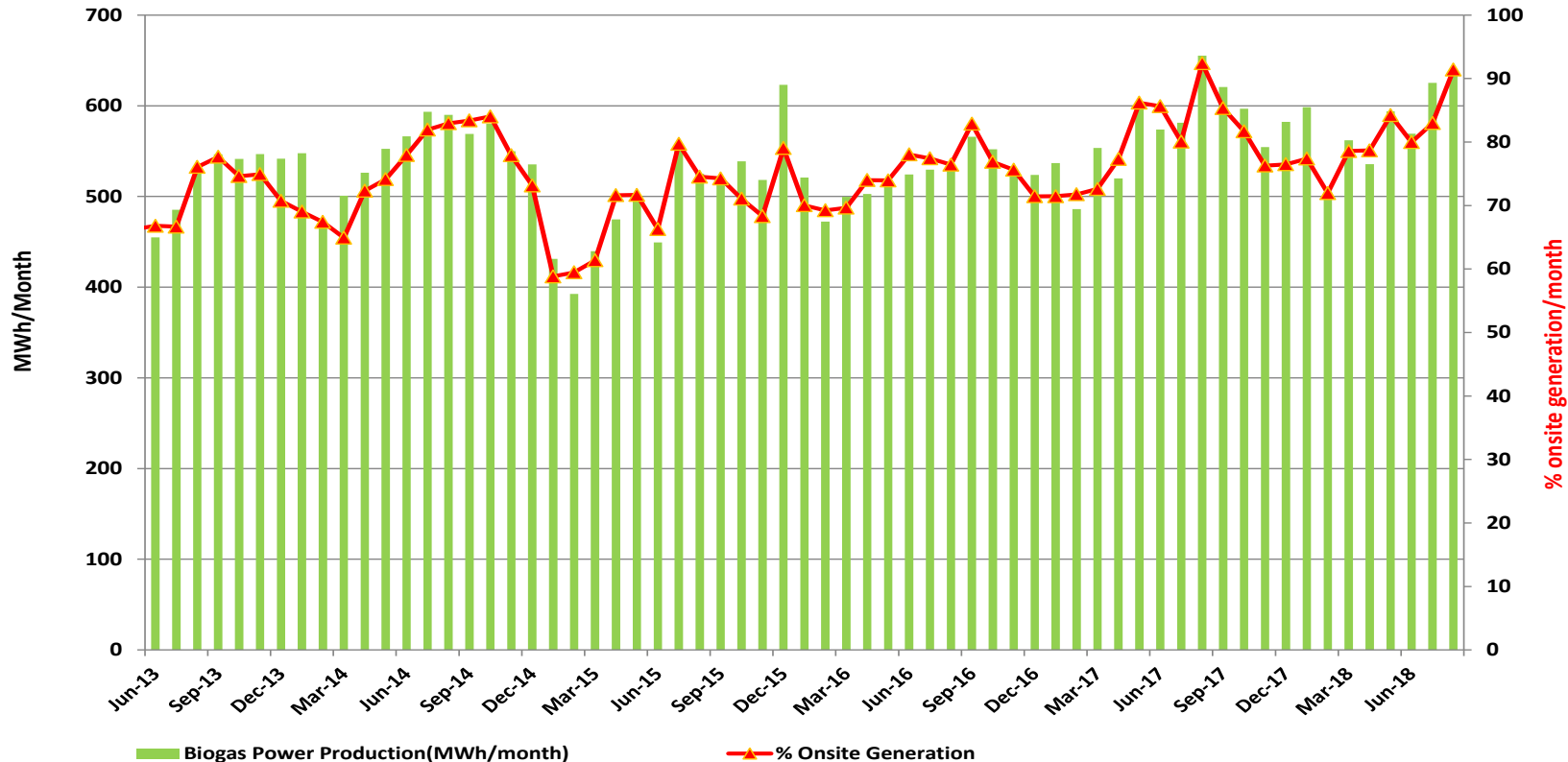


Substrate	BOD ₅ (mg/l)	pH	Suspended Solids (mg/l)	Total Nitrogen (mg/kg)	Total Phosphorus (mg/kg)
Brewery Fermentation Waste	3,020	8.6	49	49.4	41
Brew house Waste	9,450	5.2	778	274	63.1
Wine Bottling Waste	2,920	5.6	78	13.8	4.62
Cola drink spoiled product	62,000	2.6	38	67.3	152
Salty Whey	20,100	3.8	5,790	1,180	609
Grease trap	11,000	6.9	13,000	26.9	45.3
Waste from food court	29,500	6.1	42,300	2,040	135
Waste from confectionery factory	27,900	7.0	13,800	140	13.1

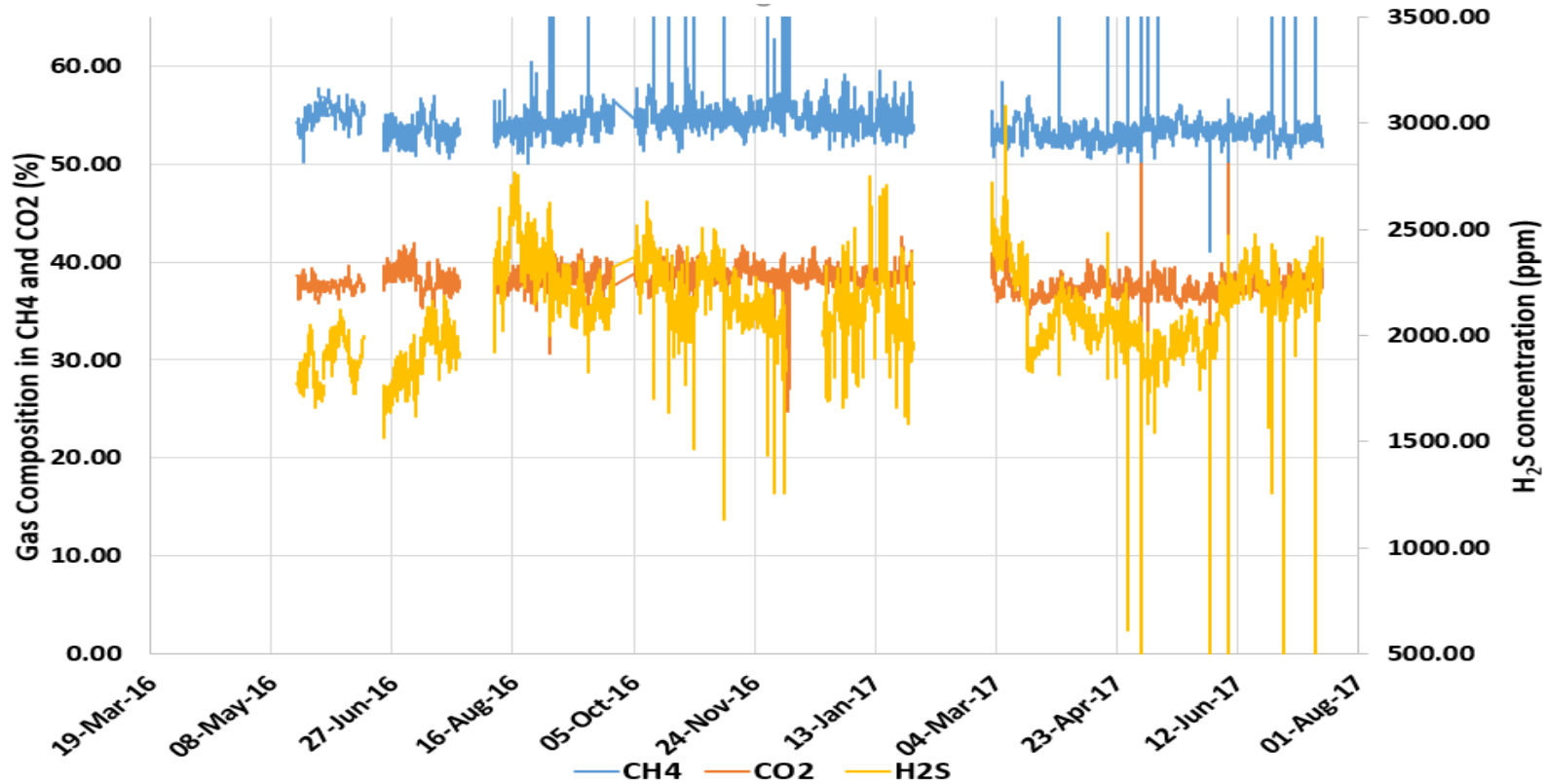
Co-digestion Volumes Received



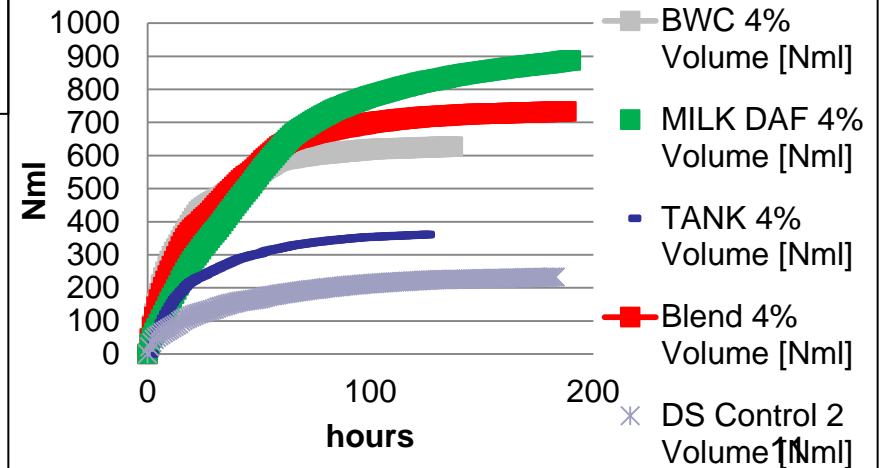
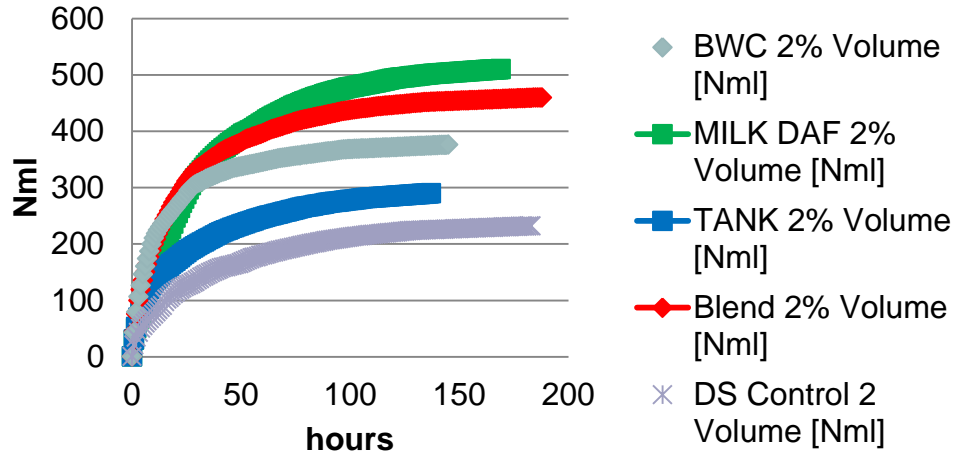
Glenelg WWTP - Power Generation



Biogas Quality



Optimisation project



- First plant of its kind in Australia
- Increased power generation from 55% to 91%
- Proven process potential: larger facility planned at Bolivar WWTP
- Optimisation project to understand impacts of blends, when to dose and downstream impact on asset life
- Optimisation through biomonitoring tools





Acknowledgments:

- **Gleneig WWTP Operations Allwater Team**
- **SA Water Research and Innovation, Trade Waste groups**



Thank you for your attention

Jennifer Dreyfus, Process Optimisation Engineer

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One Team. Growing People. Creating the future.