Supplementary Information

Table S1 Correction of equations used in the FW-DW system, compared to the one used in Dijkgraaf et al. (2019)

Parameter	Equation in Dijkgraaf et al. (2019)	Correction
Energy conversion from MJ to kWh	Energy in kWh = Energy in MJ $* \frac{10^6}{3600 * 24}$	Energy in kWh = Energy in MJ $* \frac{10^3}{3600}$
Methane yield in anaerobic digestion unit	$y_m = m_{COD}^{HPS} * \ y_{m\ practical}$	$y_m = m_{COD}^{HPS\ to\ AD} * \ y_{m\ practical}$
	y_m is methane yield (m^3), m_{COD}^{HPS} is total COD mass in the HPS(kg), $m_{COD}^{HPS\ to\ AD}$ is total COD mass that goes into ADU (kg), $y_{m\ practical}$ is the practical methane yield per kg COD (m^3/kg)	
Water dilution requirement in HPS	$V_{dil}^{HPS} = \frac{m_x^{HPS}(t) - V^{HPS} * \ c_{x\ max}^{HPS}}{c_x^{HPS}}$ If $c_x^{HPS}(t) > c_{x\ max}^{HPS}$	$V_{dil}^{NS} = \frac{m_x^{HPS}(t) - V^{HPS} * \ c_{x\ max}^{HPS}}{c_{x\ max}^{HPS} - c_{GW}^{x}}$ If $c_x^{HPS}(t) > c_{x\ max}^{HPS}\ and\ c_{x\ max}^{HPS} > c_{x\ GW}^{HPS}$
	$V_{dil}^{HPS}$is water dilution requirement in the HPS, $m_x^{HPS}$is mass of x in HPS before dilution, V^{HPS} is total volume of HPS, $c_{x\ max}^{HPS}$ is maximum concentration of x in HPS, c_x^{HPS} is concentration of x in HPS before dilution, $c_{x\ GW}$ is concentration of x in groundwater, x indicates nitrogen (N) or phosphorus (P)	
Mass of N or P in HPS after dilution	$m_{x\ flushed} = m_{xo} - max(V_{N\ dil}, V_{P\ dil}) * c_{xo}$	$m_{x\ flushed} = \frac{m_{xo} + V_{dil} * \ c_{x\ GW}}{V^{HPS} + V_{dil}} * V^{HPS}$
	$m_{x\ flushed}$ is mass of x in the HPS after dilution performed and then flushed (mg), m_{xo} is mass of x before dilution (mg), $V_{N\ dil}$ is Volume of dilution due to N (L), $V_{P\ dil}$ is Volume of dilution due to P (L), c_{xo} is concentration of x before dilution (mg/L), V_{dil} is volme of dilution (L), V^{HPS} is volume of HPS (L), x indicates nitrogen (N) or phosphorus (P)	