



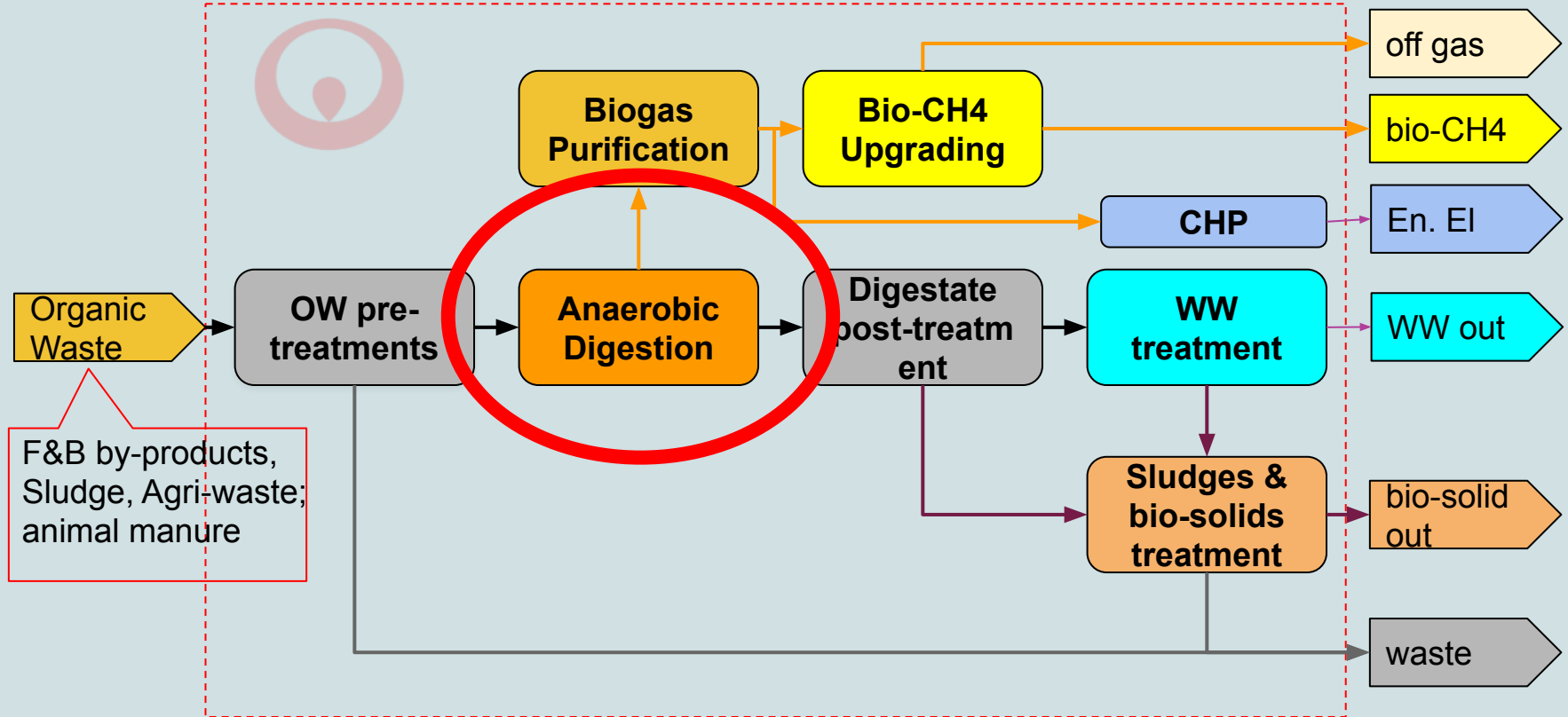
October 9th 2019



BIOMETTM Biogas plant

Water Technologies

Waste/By-Product Anaerobic Cycle

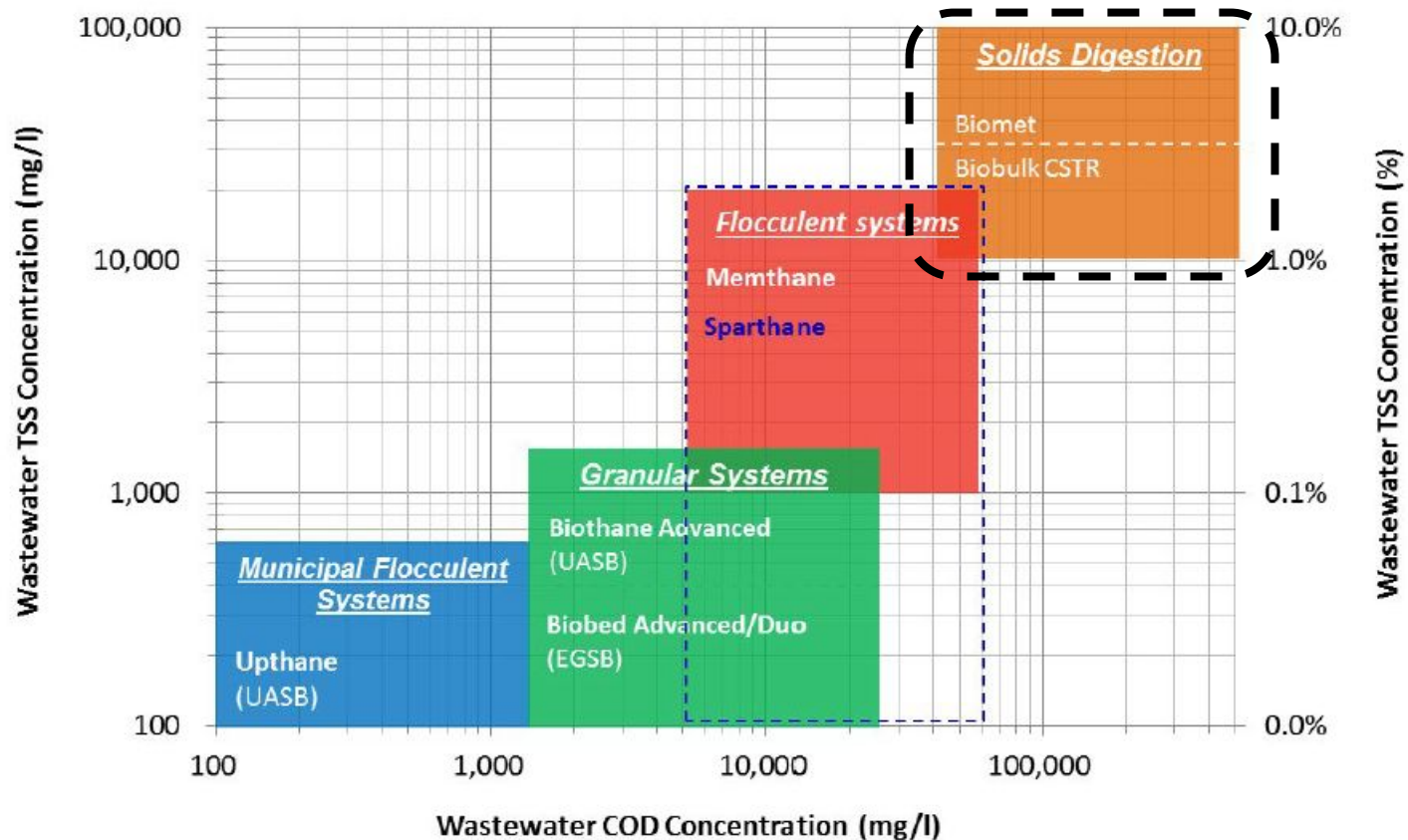


Veolia processes in AD



VEOLIA Technologies	Biomet	Memthane (AnMBR)	UASB	EGSB
Biomass	flock	flock	granular	granular
Loading rate VLR (kgCOD/d/m3)	3-5	5-10	5-10	15-25
Digester H (m)	12-20	12-20	6-9	12-20
Foot-print	😊	😊😊	😊😊	😊😊😊
SS tollerance	😊😊😊😊 10-12%	😊😊	😊	😐
COD removal	😊😊 75-80%	😊😊😊😊	😊😊	😊

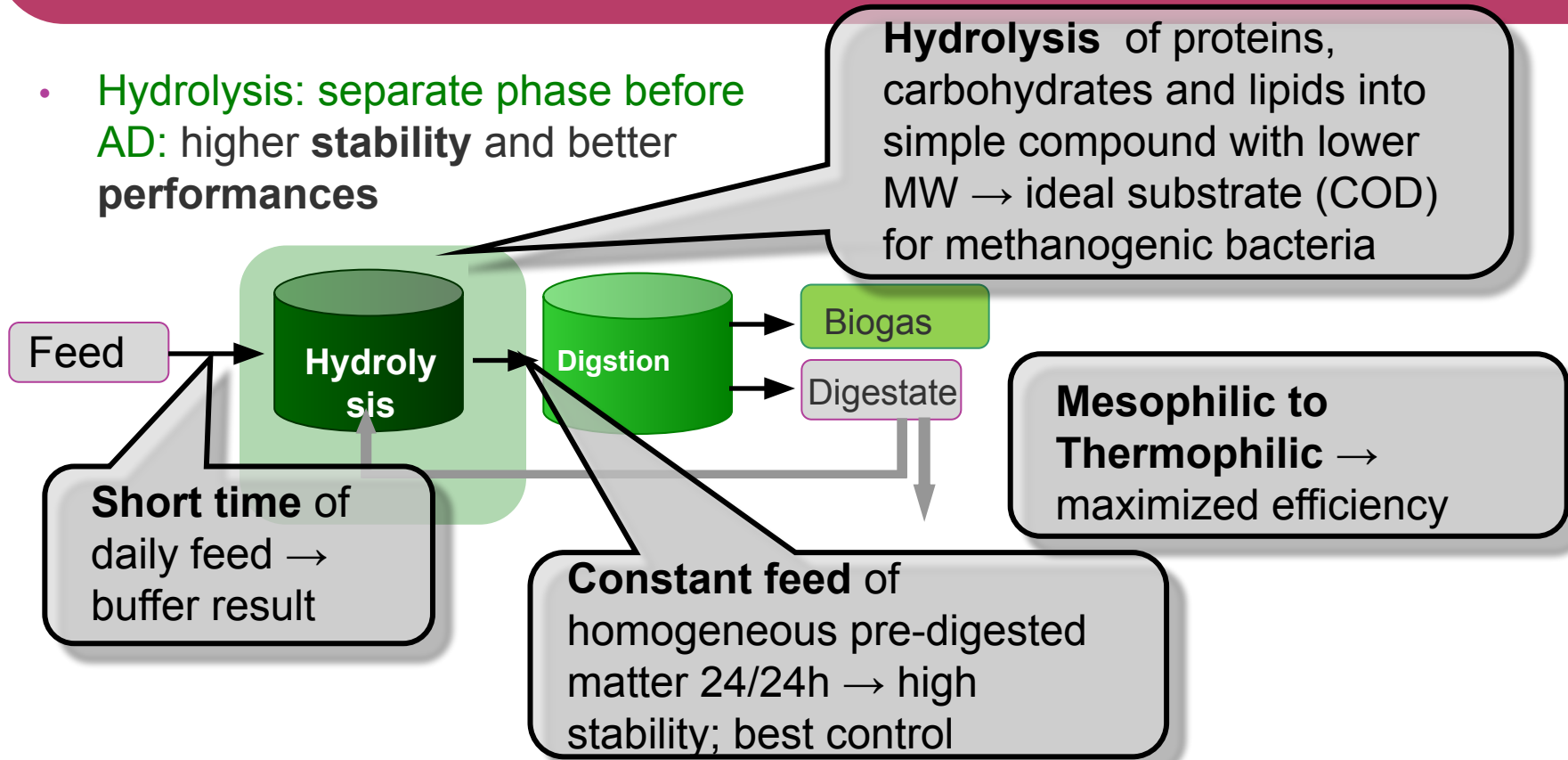
Choosing technology





BIOMET[®] - process plus - 2 stages

- Hydrolysis: separate phase before AD: higher **stability** and better **performances**



BIOMET ® - design plus - mixing

External mixing devices with chopping pumps for a better biomass **disgregation** and easier **maintenance**



Internal fixed nozzles
No movable devices inside the reactors



BIOMET[®] - design plus

External heat exchanger

Countercurrent → no thermal shock
big size piping → easy to clean
High flow speed → no fouling.



Digestors design

Ratio ϕ / H → good mixing; < thermal losses; > foam control



BIOMET[®] - REFERENCES



BIOMET ® - VALFRUTTA Conserve Italia



Site: Pomposa (Ferrara)

Year: 2010

Production: 1000 kW EE

Feeding: **35 kt/y**

- Fruit and vegetable by-products
- sludge from WWTP
- Vegetable byproducts



BIOMET - SEDE Graincourt - WtE

Place: Graincourt - France

Year: 2012

Feeding: 25 to 50 kt/y

- slaughterhouse by-products
- dairy by-products
- vegetables by-prod.
- fish industry by-prod.
- waste from kitchen and restaurants



BIOMET ® - EALCompost - Lodi - WtE



Site: Lodi - Italy

Year: 2016

Production: 1000 kW EE

Feeding: 34 kt/y OFMSW

Organic Fraction Municipal Solid
Waste

BIOMET ® - references

n	Client's name	Place	Capacity	Inclusion/ exclusion	Scope of work	Completion start-up
1	BOSCO	Brusadino place; Parma; Italy	input: 20000 t/y mais silage output: 1000 kW EE	Incl: biogas plant Excl: CHP; Civil W.	Authorization design; Plant design; supply; erection; start-up	Jan-09
2	CONSERVE ITALIA	Pomposa; Codigoro; Ferrara; Italy	input: 37000 t/y byproducts; WWTP sludge; mais silage output: 1000 kW EE	Incl: biogas plant; digestate dryer Excl: CHP; Civil W.	Authorization design; Plant design; supply; erection; start-up	Jun-10
3	SEDE ARTOIS Metha.	Graincourt; France	input: 25000 t/y many waste output: 1000 kW EE	Incl: biogas plant Excl: CHP; Civil W.	Plant design; supply; erection; start-up	June 2012
4	AGRIFERRARESE	Ostellato; Ferrara; Italy	input: 25000 t/y mais silage; Cow manure. output: 1000 kW EE	Incl: biogas plant Excl: CHP; Civil W.	Authorization design; Plant design; supply; erection; start-up	July 2012
5	EAL COMPOST	Terranova dei Passerini; Lodi; Italy	input: 36000 t/y organic waste output: 1000 kW EE	Incl: biogas plant; digestate treatment; CHP Excl: Civil W.	Authorization design; Plant design; supply; erection; start-up	December 2016
6	DANONE	Yalutorowsk, Siberia region, Russia	input: 54750 t/y whey output: 300 Nm3/h biogas	Incl: biogas plant; sludge dewatering; biogas line Excl: Civil W.	Plant design; supply; erection support; start-up support	Commissioning January 2019

CONTACTS



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