



CABS 2018, Winnipeg

Liquid Biowaste Management – Heat Treatment

Why do we need to treat liquid biowaste ?

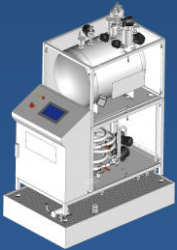
- **Mandatory – biosafety regulations**
- **Legal reasons**
- **Image – environmentally friendly**
- **Confidentiality – patents protection**



How do you treat liquid biowaste ?



- **Chemical decontamination – chemicals/time treatment**
Limited application



- **Thermal decontamination – time/temperature treatment**
Broad range of application

What does a biokill system look like ?

Small

>>>>>>>

Medium

>>>>>>>

Large



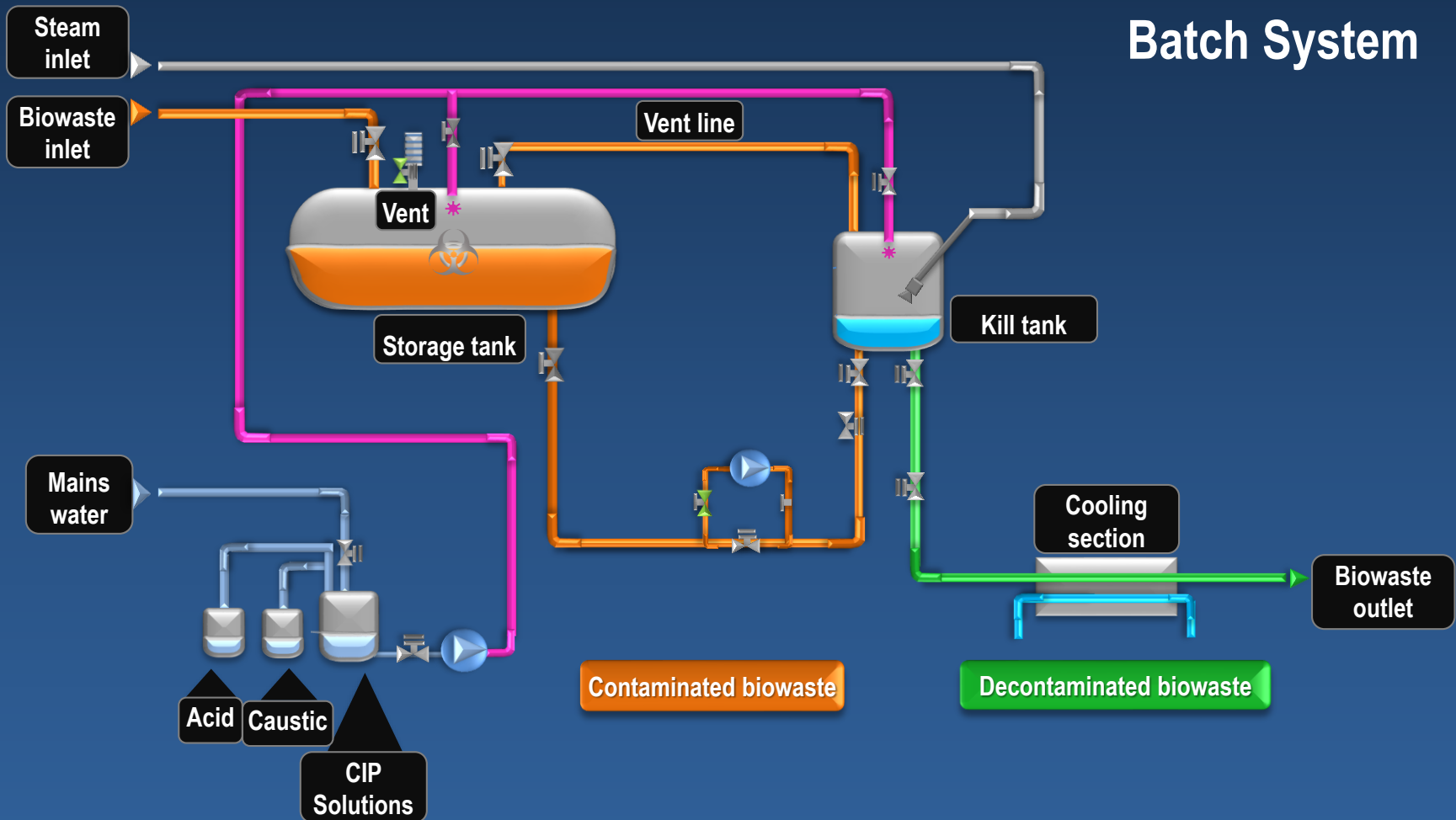
Batch

|

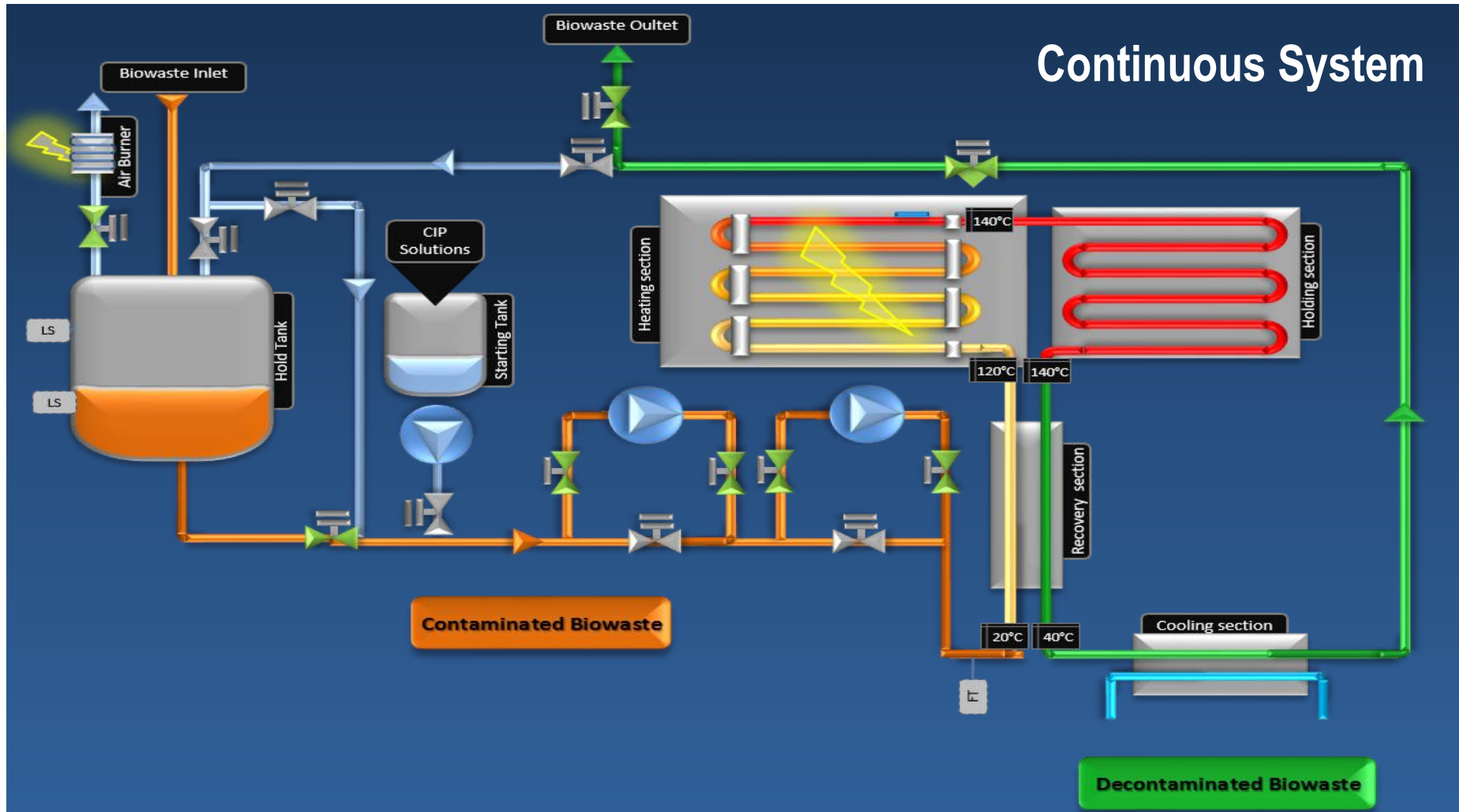
Continuous

How do they work ?

Batch System



How do they work ?



Which one is best ?

~~Batch vs Continuous~~

...should not be the first question coming to mind.

What is my effluent like ?

Knowing your effluent

The cornerstone of your project

- Flowrate: daily, weekly, regularity, peak flows...
- Nature: water like, sticky, solids, reactions...

Knowing your effluent

	Small	Medium	Large
Flowrate	Batch (Cont.)	Batch Cont.	(Batch) Cont.
Solids	Batch Cont.	Batch Cont.	Batch (Cont.)

What to look for?

Continuous System

Key features:

- ✓ Recovery section
- ✓ Exchanger technology
- ✓ Safety
- ✓ CIP
- ✓ Storage tank sizing + flowrate



What to look for?

Batch System

Key features:

- ✓ Treatment
- ✓ Vent filter(s)
- ✓ Noise
- ✓ Lifetime
- ✓ Heating/Cooling cycles
- ✓ Utilities consumption



Other criteria to take into consideration

Batch & Continuous systems

- ✓ Space
- ✓ Automation
- ✓ Maintenance
- ✓ Budget



Extra process to integrate

Batch & Continuous systems

✓ Neutralization – pH control/adjustment





Thank you for your time