BlueTech RESEARCH

Actionable Water Technology Market Intelligence

Analysing Opportunities at the Water Energy Nexus - Water and Energy

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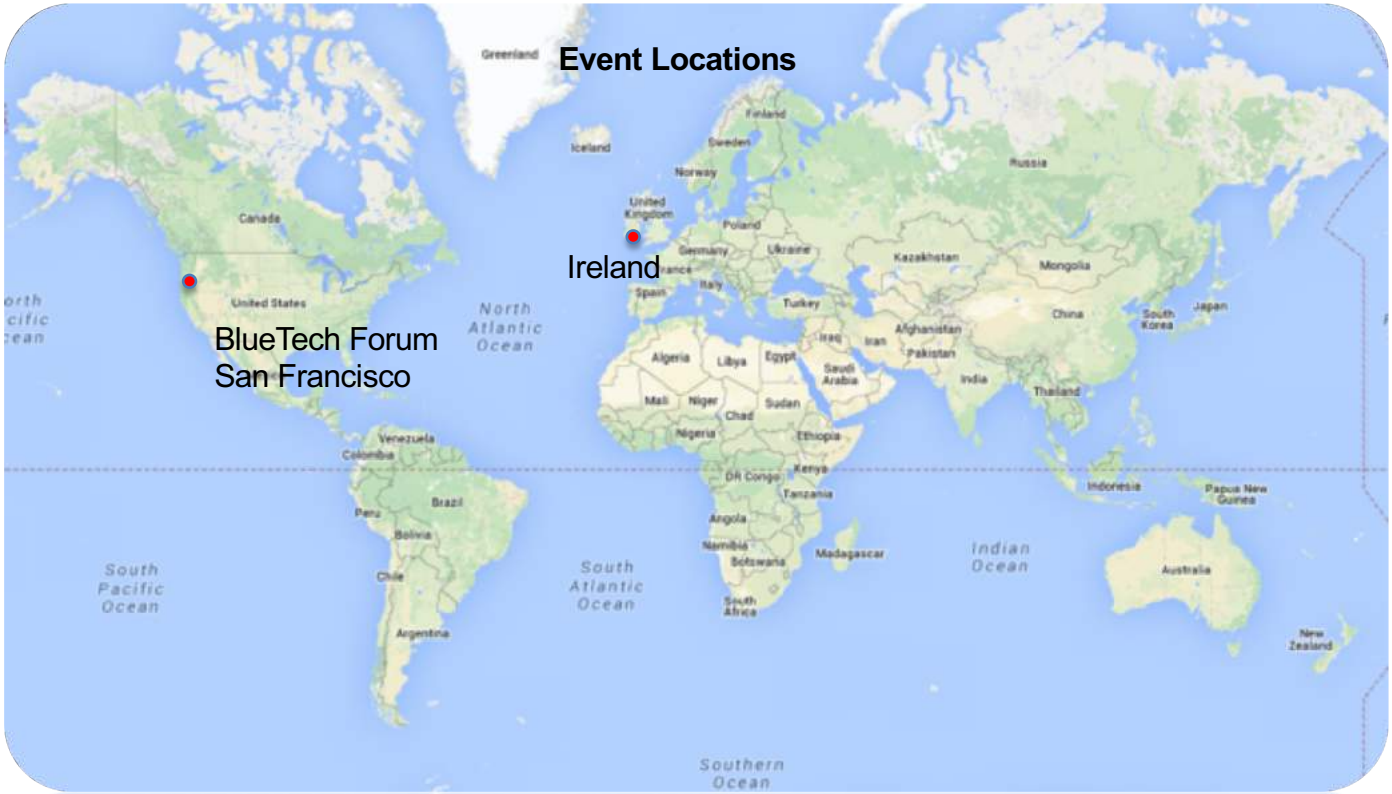
Corporate Background & Office Locations

BlueTech® Research, founded in 2011, has quickly grown to be the definitive source of analysis and insight on the global water technology market. Our dedicated team of analysts have a techno-commercial focus provide unrivalled deep domain expertise in the water industry.

BlueTech Forum & Related Events

BlueTech® Forum, founded in 2010, has grown to be the definitive water technology innovation forum. In addition we host satellite events through partnerships at Aquatech Amsterdam, WEFTEC and Aquatech China.



Select Reference Clients

We support leading Water Technology Companies, Strategic Investors, Water Hubs, Utilities, Consultants and Fortune 500 Corporations

Rethinking Water Systems Efficiency

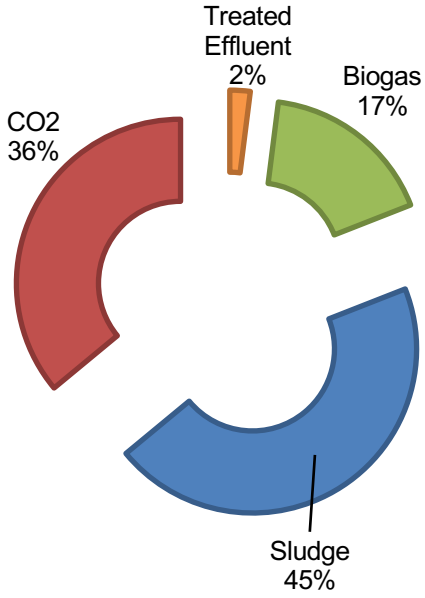
There is Energy in Wastewater

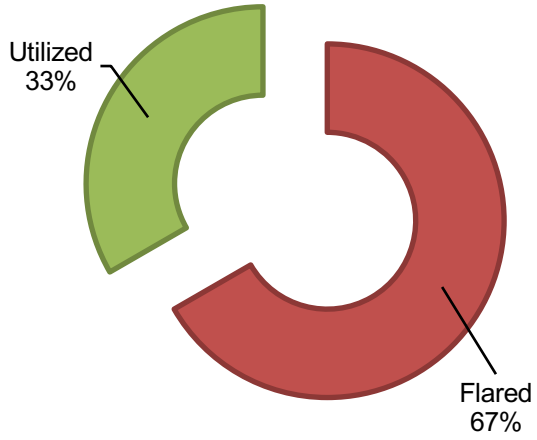
- *If we obtained our Joules from Plug Sockets as opposed to Pizza & Pasta, how many kW hours would we consume?*

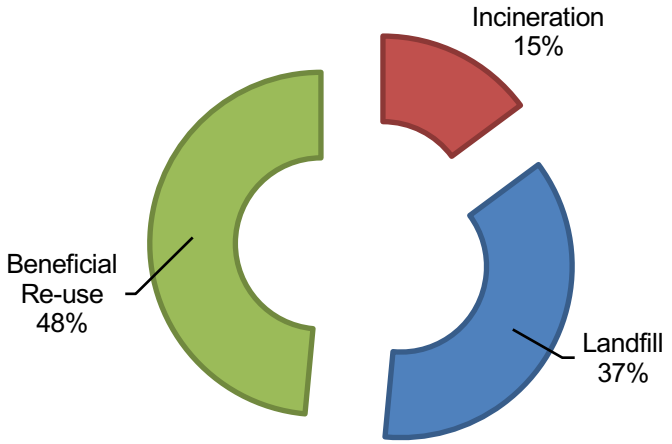
- *The energy in the wastewater produced by one person each day could power a 100 watt light bulb for 5 hours*

Total USA Municipal WWT Wastewater Energy Input

49 M MWhr in USA Municipal Wastewater / yr





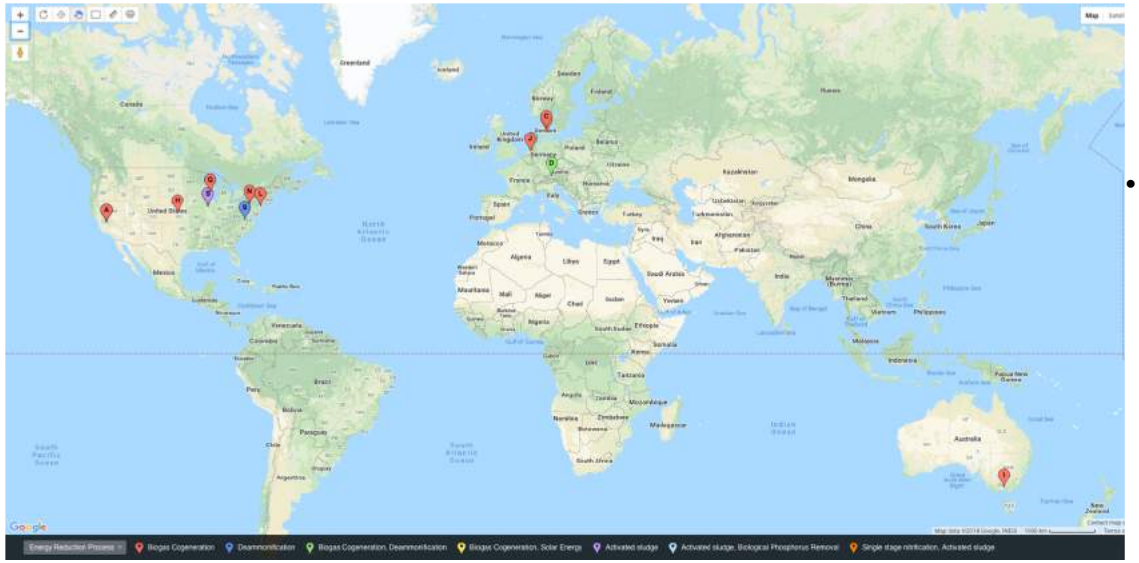


Utilized: 12%

Not Utilized: 88%

Systems Level Disruption – Energy Neutrality

BlueTech Energy Neutrality map

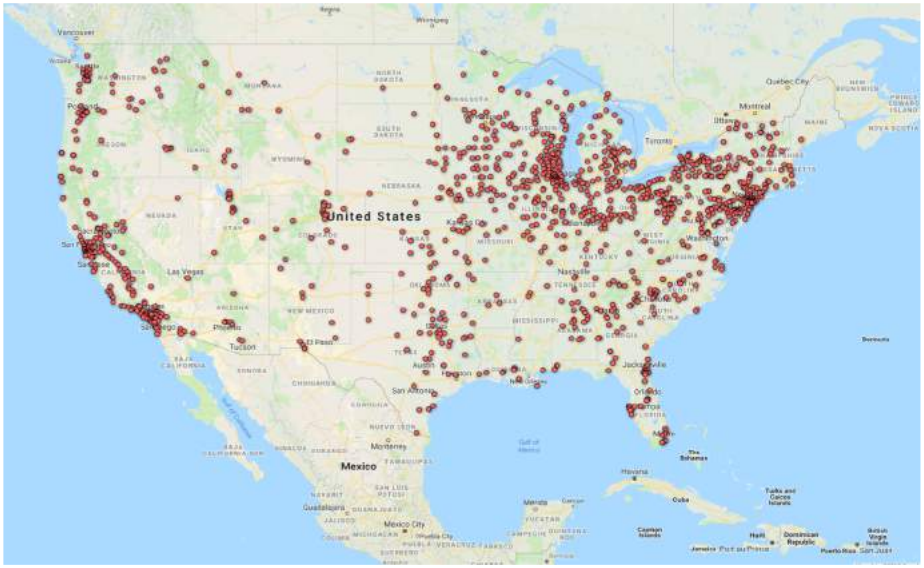


- There are 17 energy neutral plants which we have identified based on a review of the literature and interviews with industry experts. BlueTech Research has developed an interactive map of these plants and their locations.

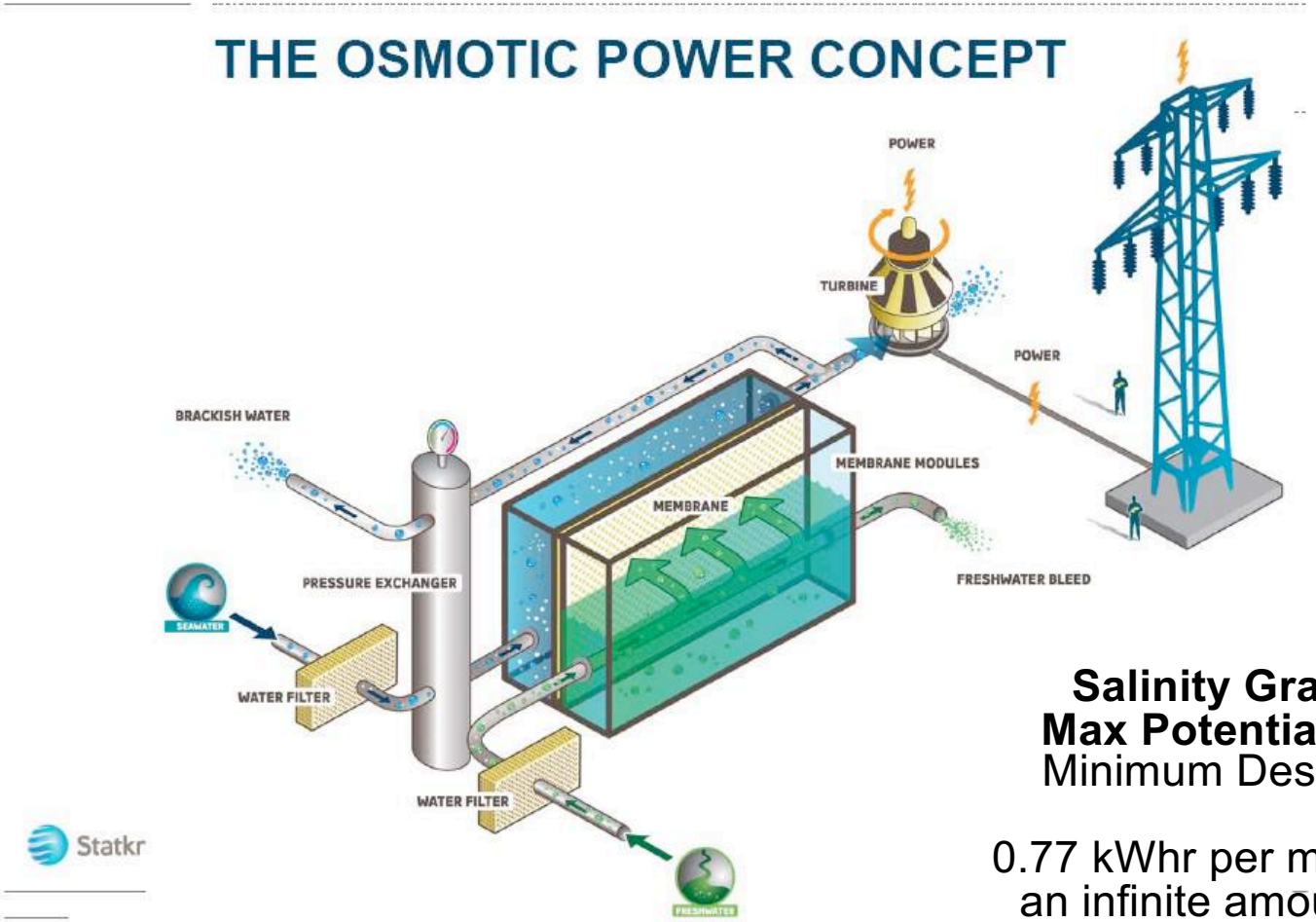
- This map below shows current operating WWTP's in the US with operating anaerobic digestion.

- We think each one of these plants could potentially achieve energy neutrality or move closer to it. Our prediction is that in ten years the landscape will have changed as energy recovery and energy neutrality become more widely accepted at wastewater treatment plants.

Operating plants with anaerobic digestion (US)



Salinity Gradient Energy Osmotic Power (PRO / RED)



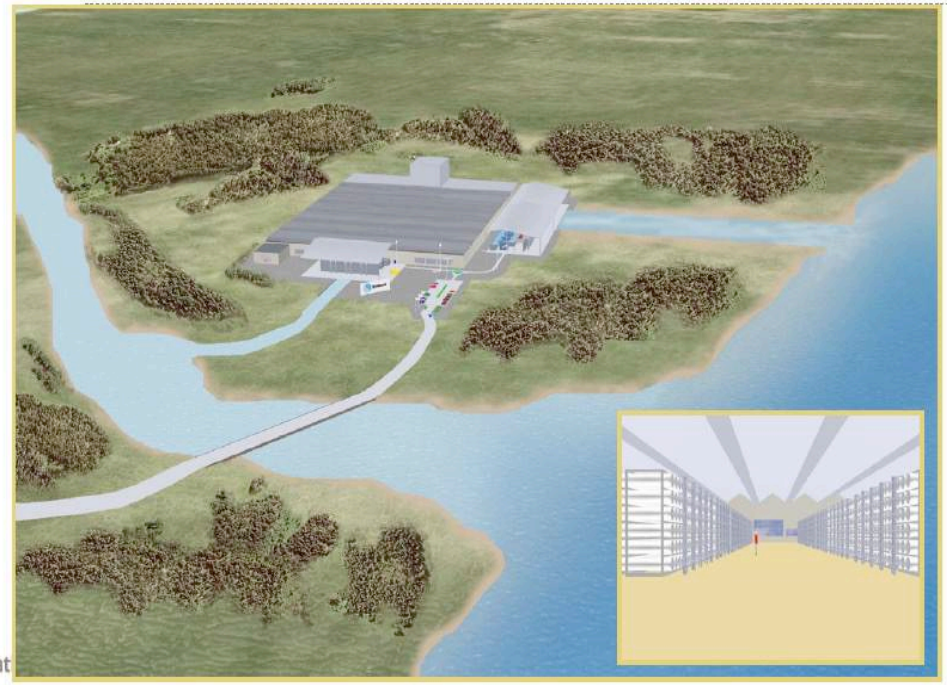
Salinity Gradient Energy: Max Potential: The inverse of Minimum Desalination Energy

0.77 kWhr per m3 of Seawater and an infinite amount of Freshwater

THE MIXING ENERGY IN PRO

- Based on the thermodynamic laws work can be extracted from the entropy of mixing fresh water and sea water

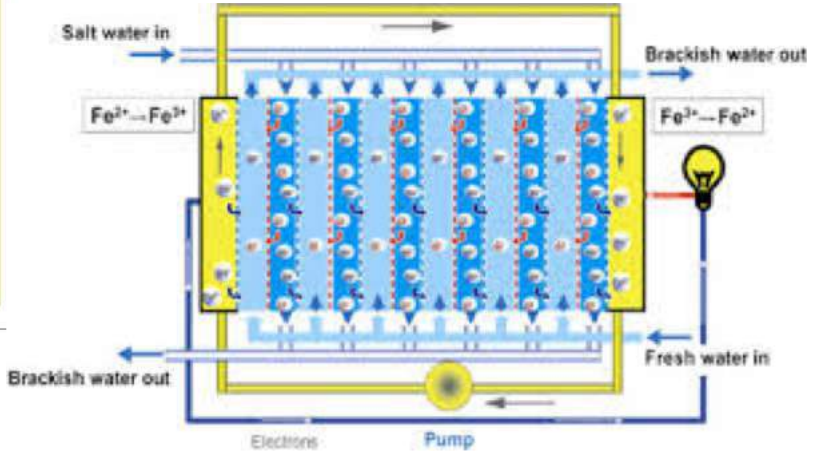
SEA LEVEL OSMOTIC POWER PLANT



Desalination Energy Recovery

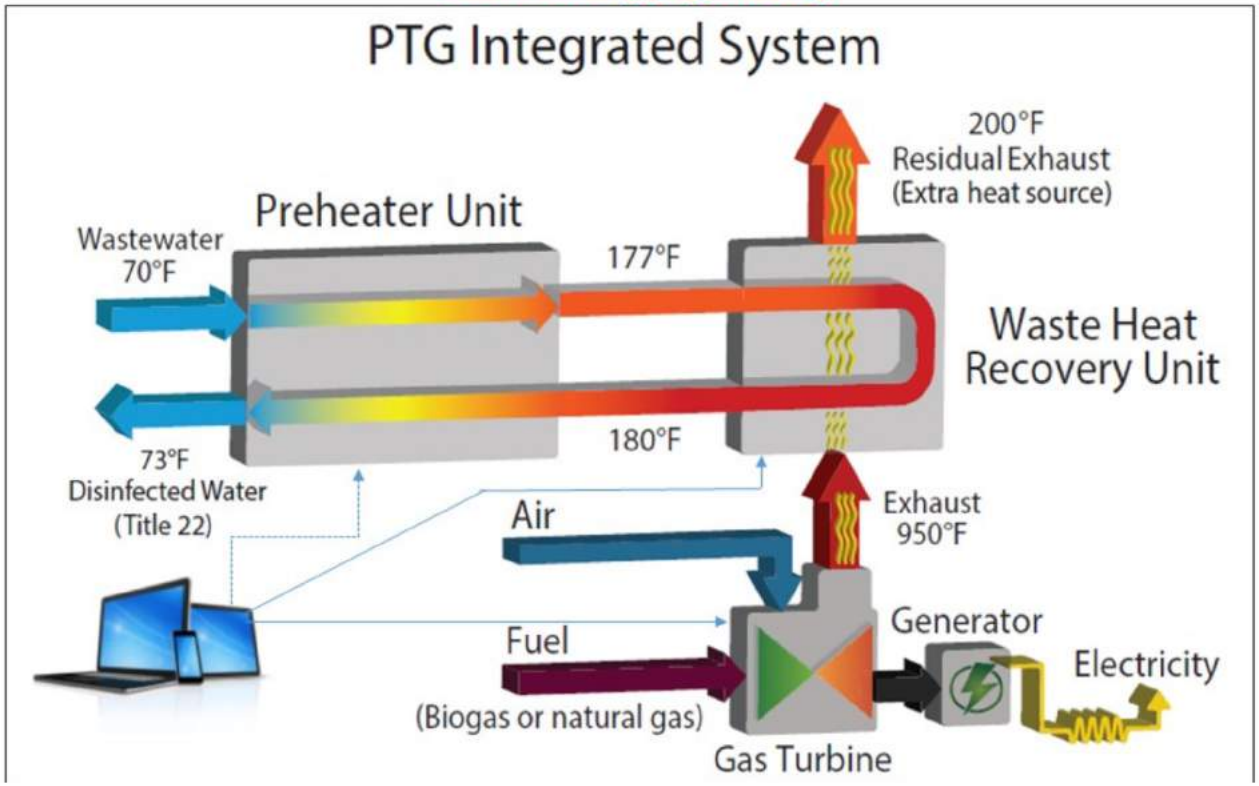
Max Potential: The inverse of Minimum Desalination Energy

0.77 kWhr per m3 of Seawater and an infinite amount of Freshwater



Pasteurizing water with waste heat

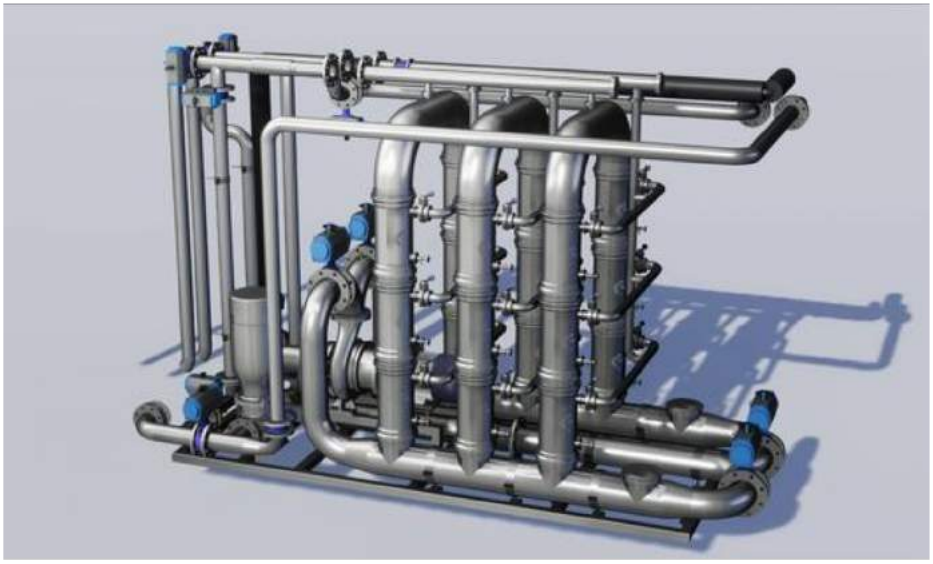
PTG's patented systems utilize proprietary software & controls to achieve 80%+ energy efficiency



PASTEURIZATION TECHNOLOGY GROUP

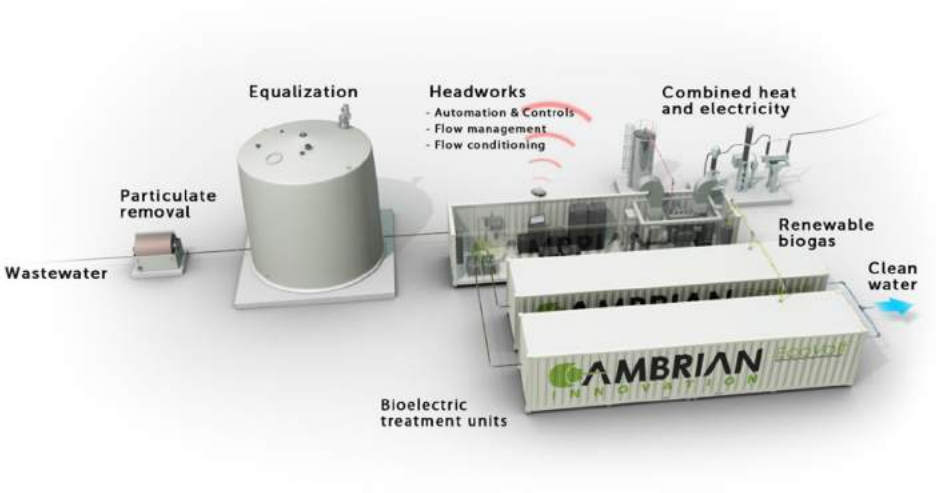
Reusing water and conserving heat

hydrasyst®

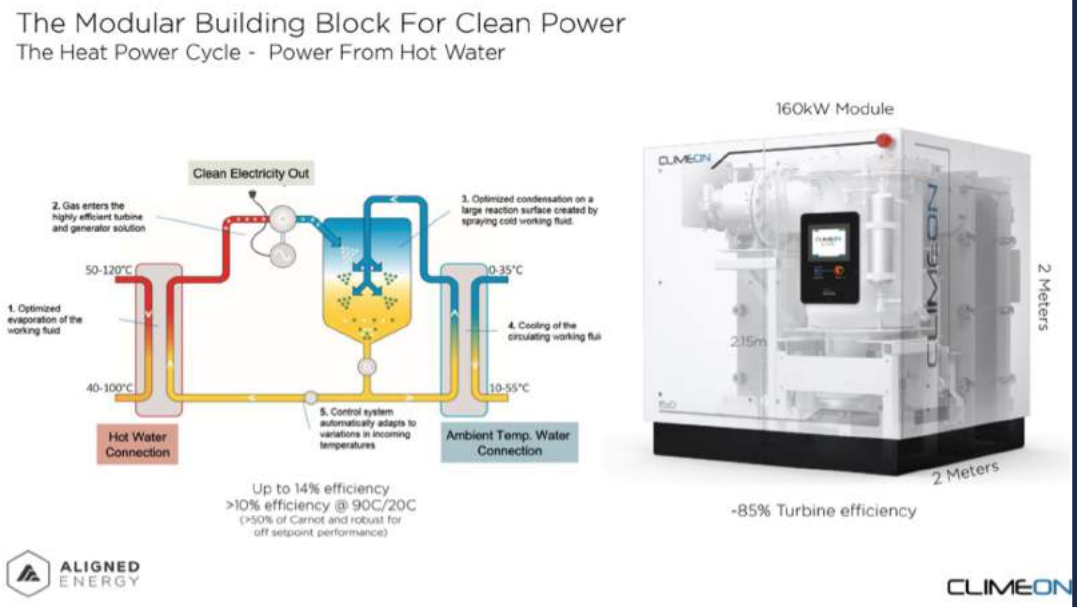


AQUARECYCLE®

Cambrian Innovation



Climeon – upgrading heat to electricity!



Virgin Voyages/Fincantieri

Sir Richard Branson's company Virgin Voyages has been a customer to Climeon since 2016, when it ordered a total of 18 Heat Power modules for three ships. Sir Richard Branson says:

"The best way of doing good is to do it without it costing a lot of money. Ideally you even save money while doing good - Climeon offers this, which makes it so exciting. In the years to come, we will see more players doing business with companies that are making a real effort to get their own house in order. We are going to work on conveying the message - we are proud of what Climeon are doing for our ships and we are going to let people know about it".

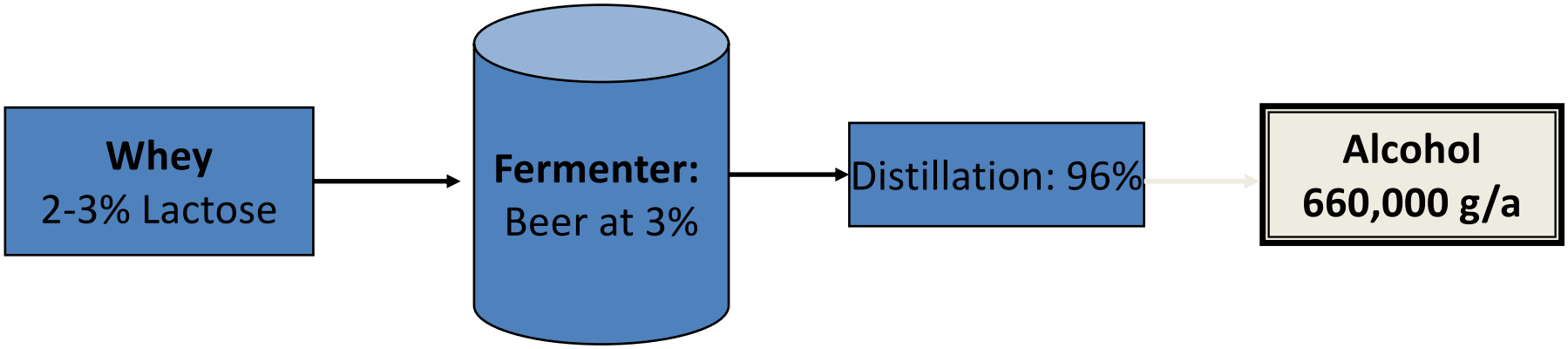
Seawater Cooling at Talisker Distillery

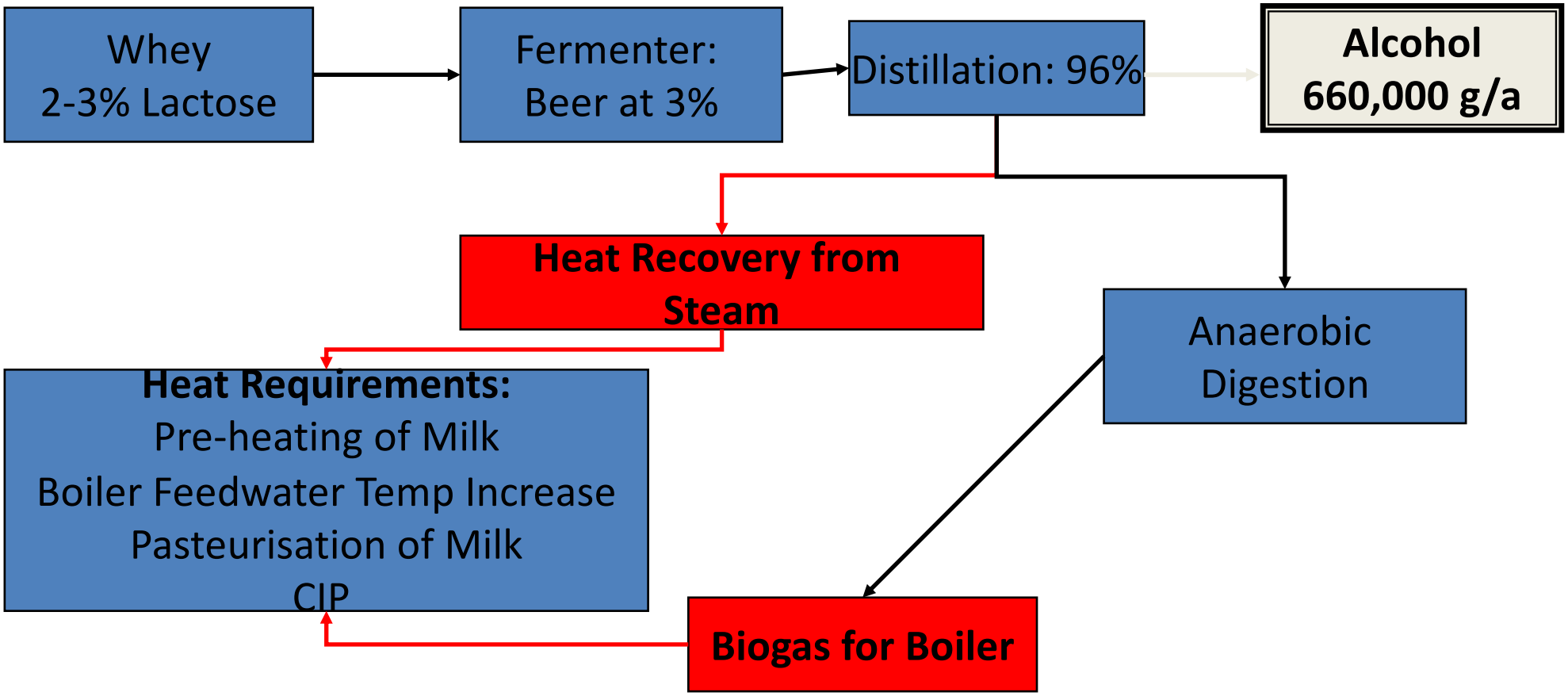
Carbery Milk Products

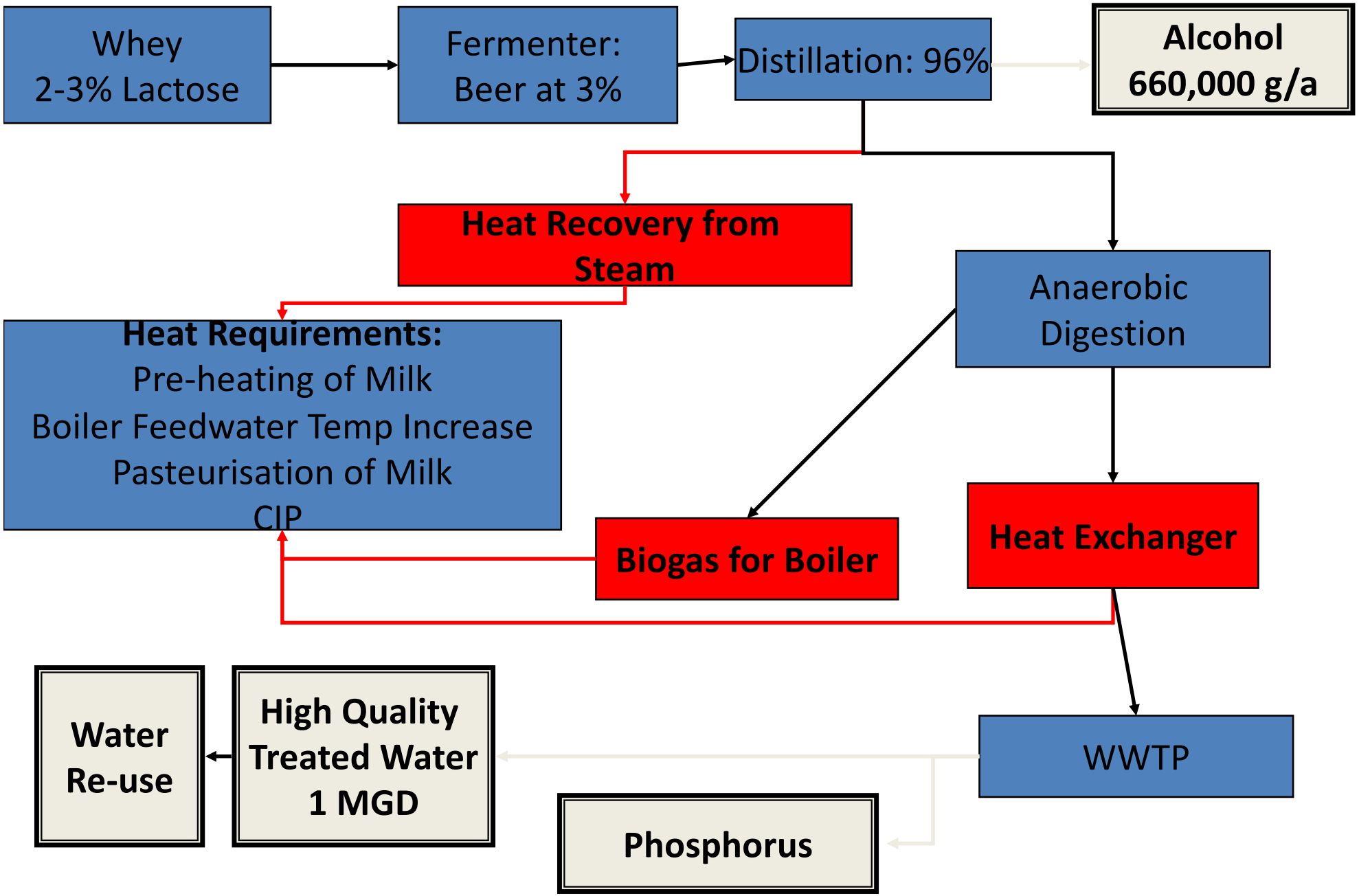
The story starts with Whey

- 90.5 Billion pounds of whey produced,
- about 45% of this can be accounted for in whey products.
- But …55% is unaccounted for and much of that may be treated as a wastewater, but could be fermented into alcohol.
- Potential in US
  - 203 Million gallons of ethanol

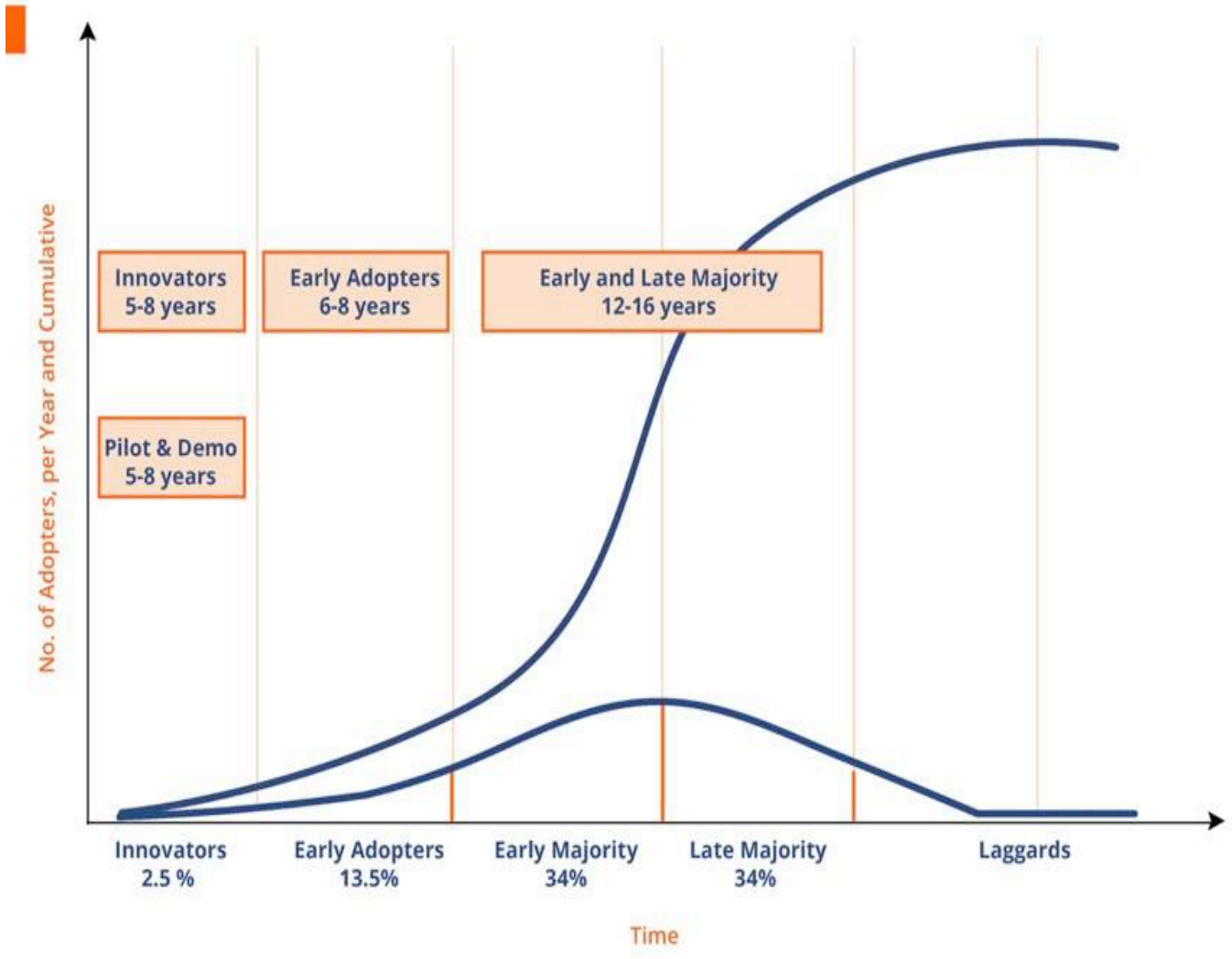
The Flow Sheet







BlueTech Water Technology Adoption Model



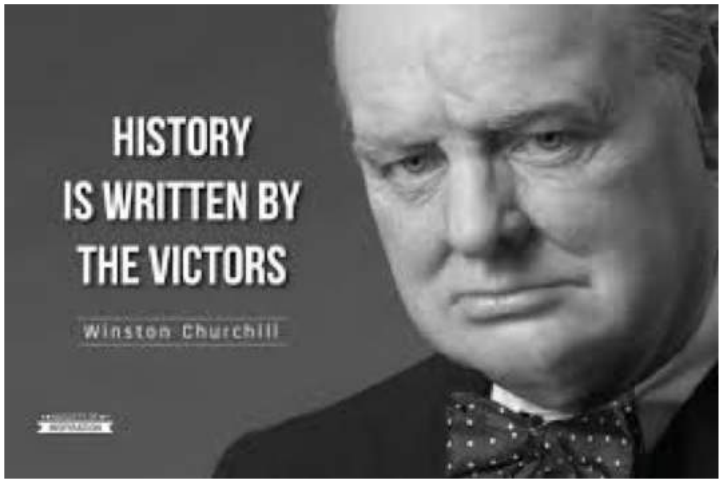
Success & Failure Rates in Water Technology

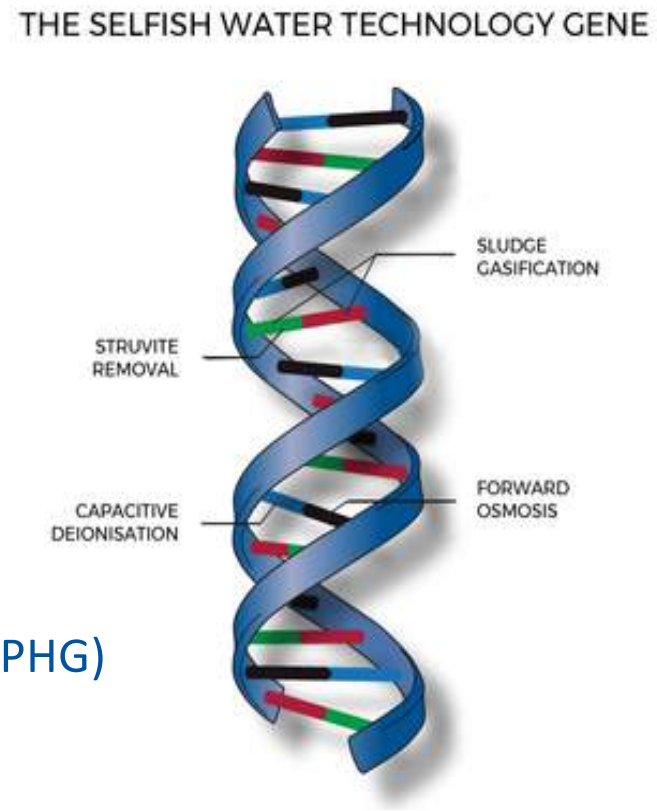
- BlueTech Research looked at 55 showcase companies from 2010-2014 & 85 BlueTech Tracker companies
- Success rates of BlueTech Innovation Showcase Alumni **Companies over twice the industry average**
- The failure rate is **also over twice the industry average!** - indicating a tendency to 'go big or go home'.
- Defining Success is more complex than it seems at first glance

BlueTech RESEARCH Actionable Water Technology Market Intelligence	Venture Capital Model	BlueTech Tracker Sample Dataset *[1]	BlueTech Forum Alumni
Successful	20%	12.5% [8.5% acquire + 4% >$10M/a]*[2]	27.5% (15% acquired + 12.5% >$10M/a)
Failed	20%	20%	35%
Operating	60%	67.5%	37.5%

***[1] BlueTech Tracker Sample Dataset: Longitudinal Analysis of 84 companies founded between 2000 -2005**
***[2] 4% = >$10 M | 8.5% = Acquired**

Success of BlueTech – Showcase Alumni





Defining Success - whose success?

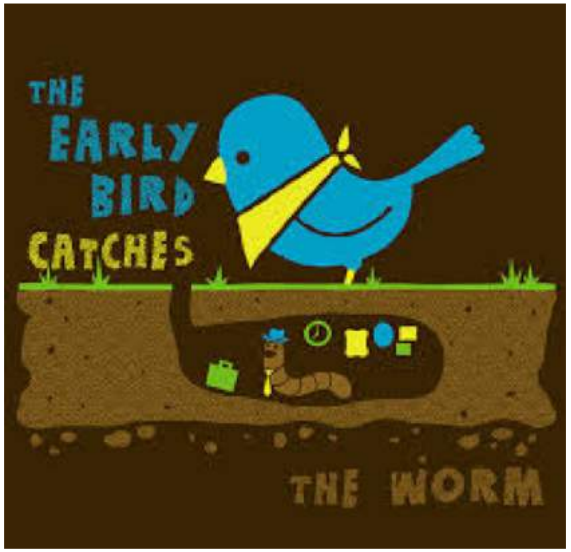
- Founder
- Investor (… which one?),
- Technology

In Many of the 'Failures' the technology lives on:

- HTI → FTS,
- MaxWest → Aries Clean Energy (PHG)
- M2 → Hydro International
- Oasys → ???

- While BlueTech has a good track record in selecting companies, we are better still at picking promising technology trends.

Myths: The Early Bird Catches the Worm
Reality: The second mouse gets the cheese



What Technologies are we likely to see?

- Technologies that deal with water issues locally
- Technologies that use ‘butter knives’ instead of chainsaws and realize systems efficiencies
- Technologies which provide water services with less energy consumption and less water

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