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Cheri Chastain
Sustainability Manager

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Energy Efficiency

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- **Heat recovery**
 - Fuel cells
 - Boilers
 - Brew kettles
 - Into fermentation
- **Lighting, equipment and electronics upgrades**
- **LEED Project in Mills River, NC**
- **Education and Monitoring**





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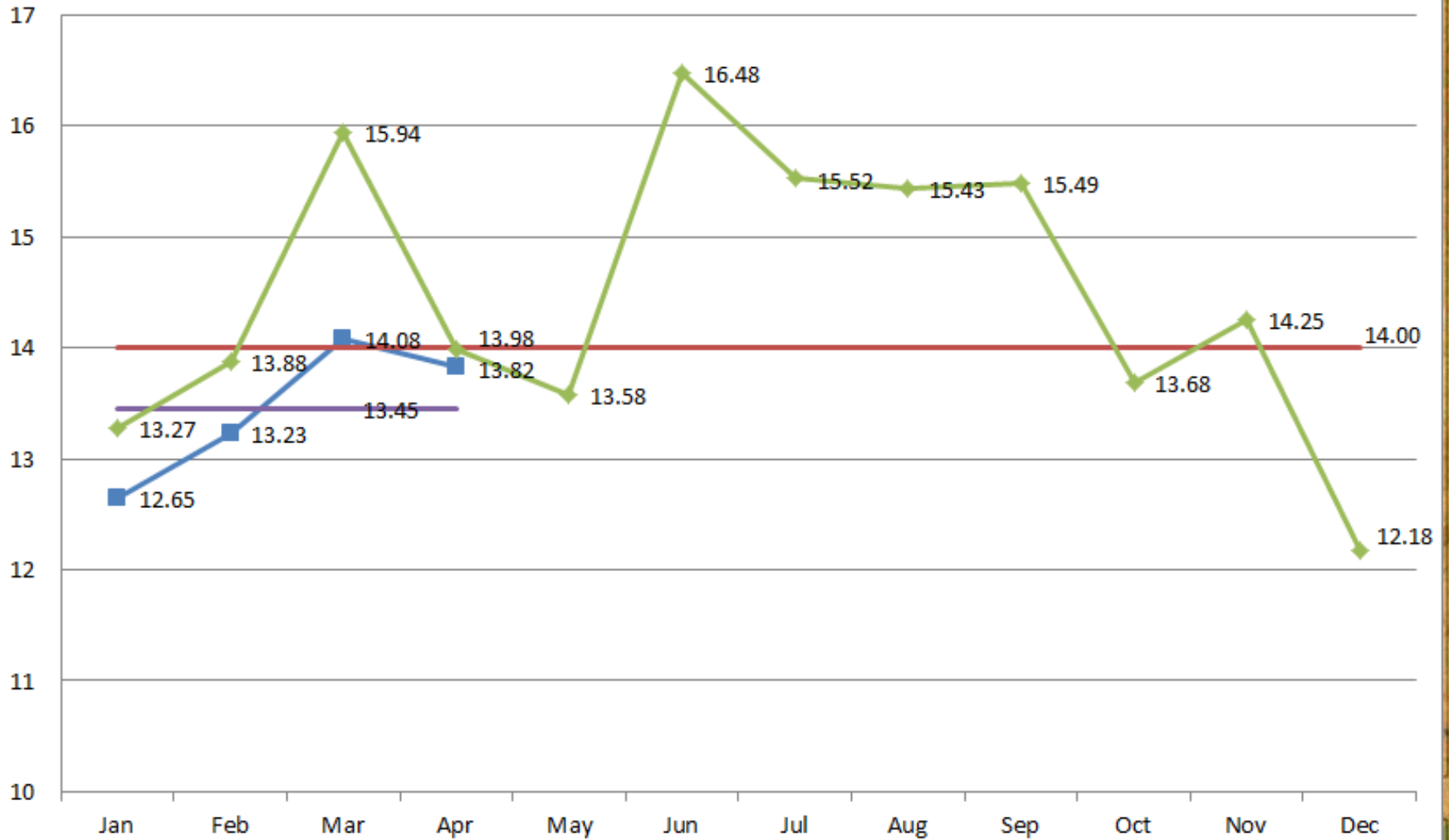
2014 kWh Consumed per BBL of Beer Produced

The amount of kWh consumed for each BBL of beer produced

2014 Goal = 14.00

2013 = 14.47

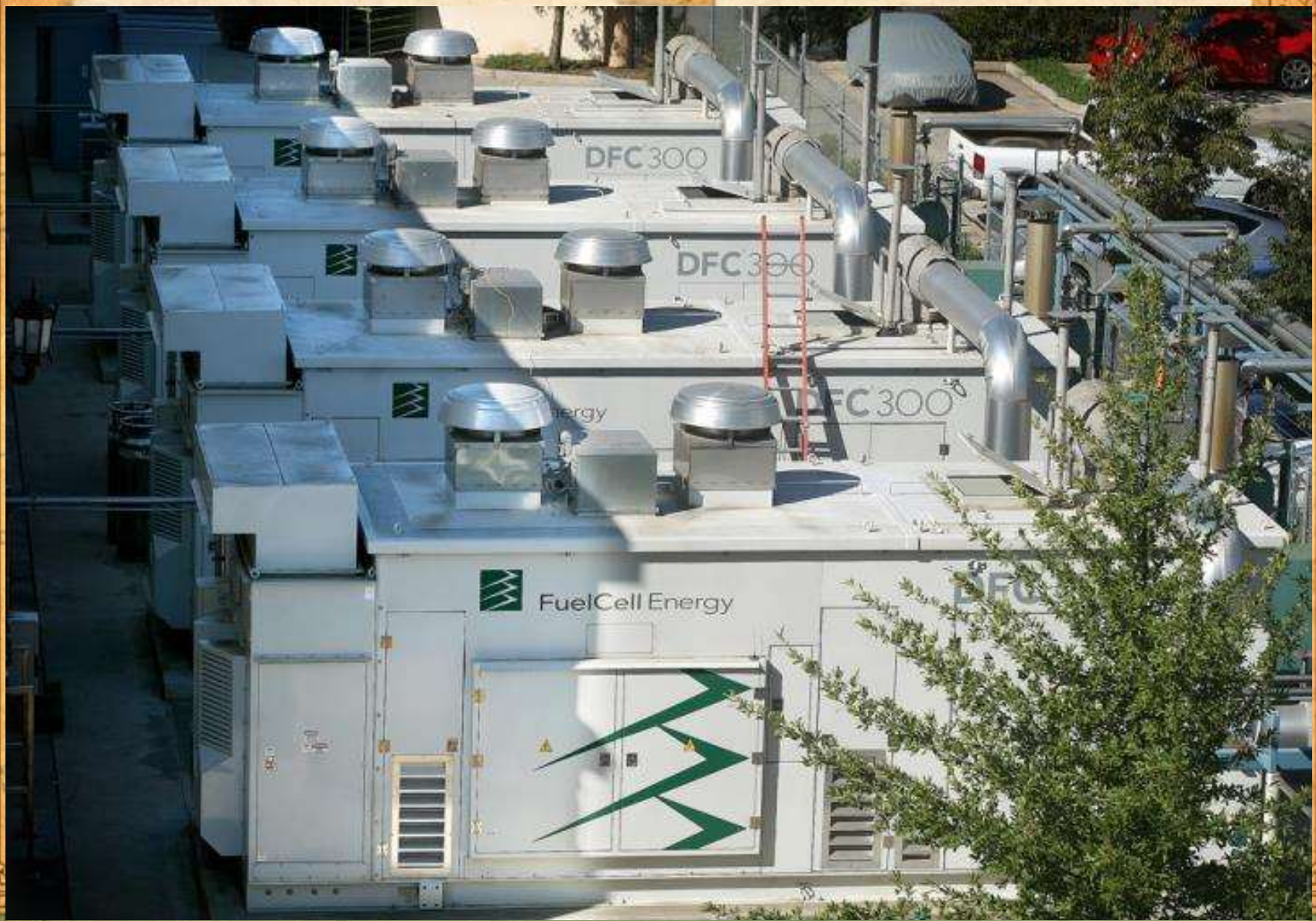
■ 2014 — 2014 YTD — 2014 Goal ◆ 2013





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DFC300

DFC300

energy

DFC300



FuelCell Energy





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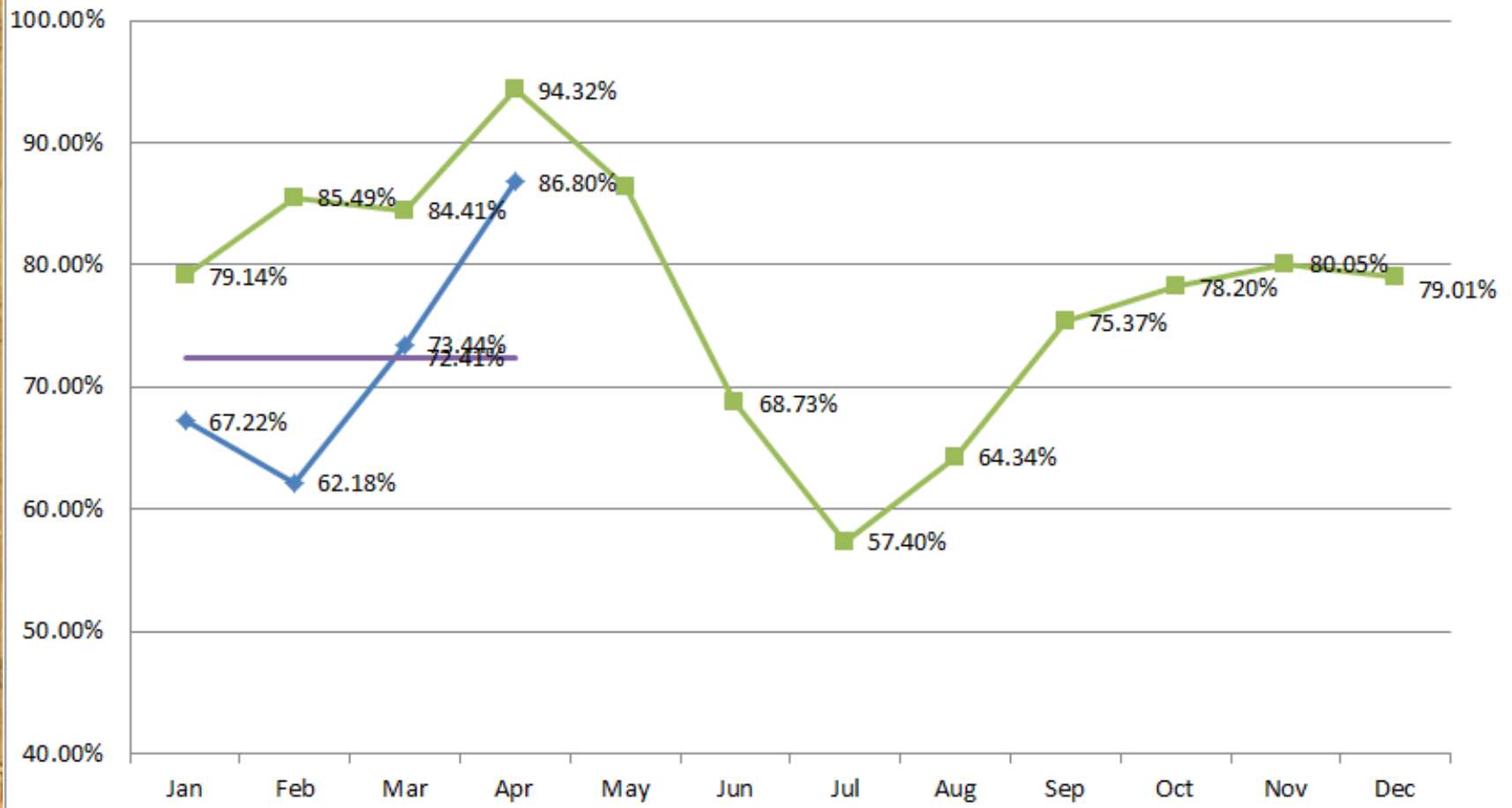
2014 On-Site kWh Generation

kWh = kilowatt hour, unit of electrical energy

The percentage of electricity consumed that was generated on-site via solar panels and fuel cells

2013 = 77.74%

2014 2014 YTD 2013



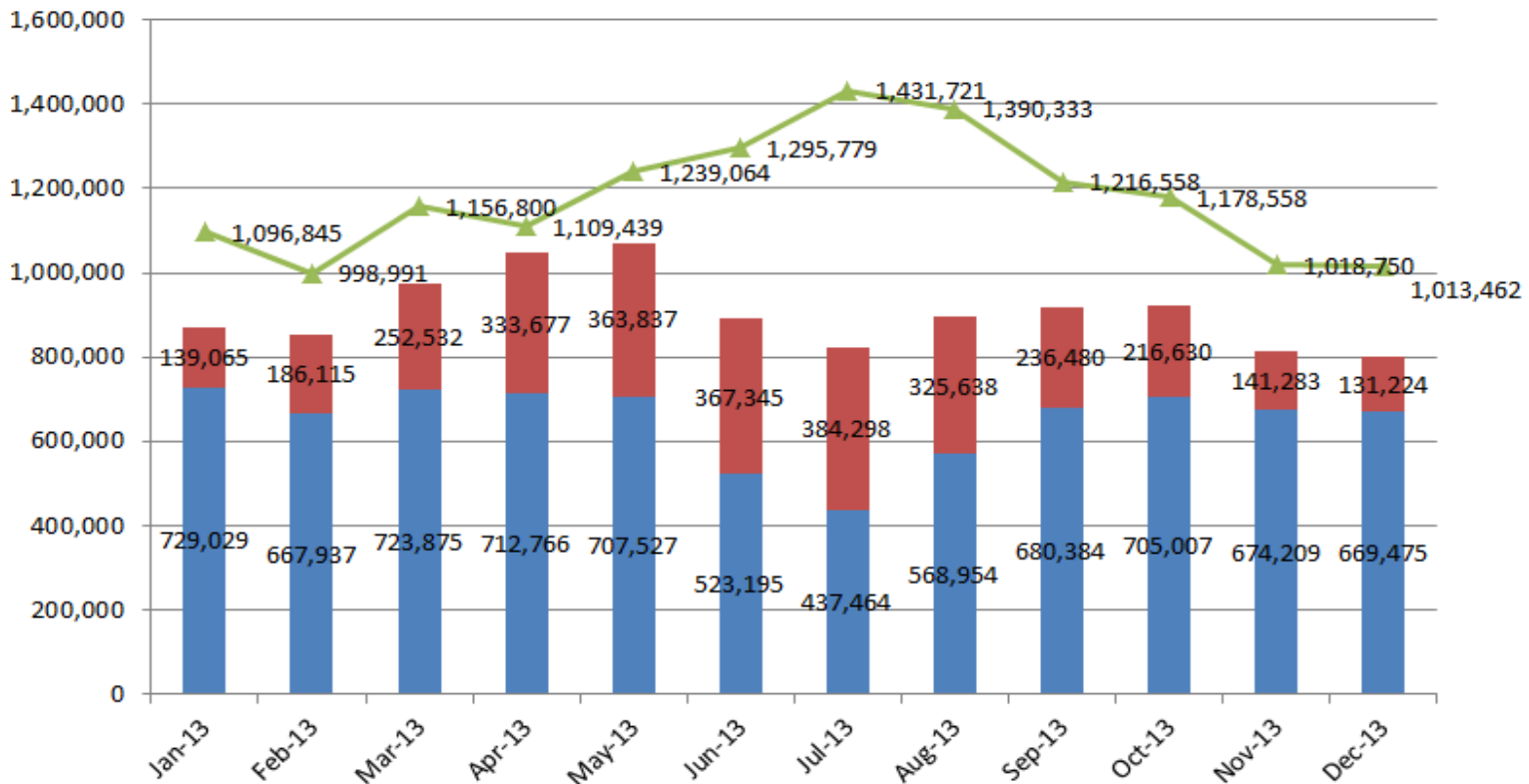


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2013 kWh Generated by Type v. Energy Consumption

This chart compares the electricity generated on-site via solar panels and fuel cells to total electrical consumption. The difference is purchased from the PG&E electrical grid.

■ kWh Generated by Fuel Cells ■ kWh Generated by Solar ▲ Total SNBC kWh Consumed



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Closing the Biogas Loop - Chico

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Spent brewing process water is pretreated onsite.



The first treatment phase is an anaerobic digester.



Boilers provide the heat source in order to boil wort.



The biogas is recovered, cleaned up, compressed and used to offset the natural gas needed for our boilers.

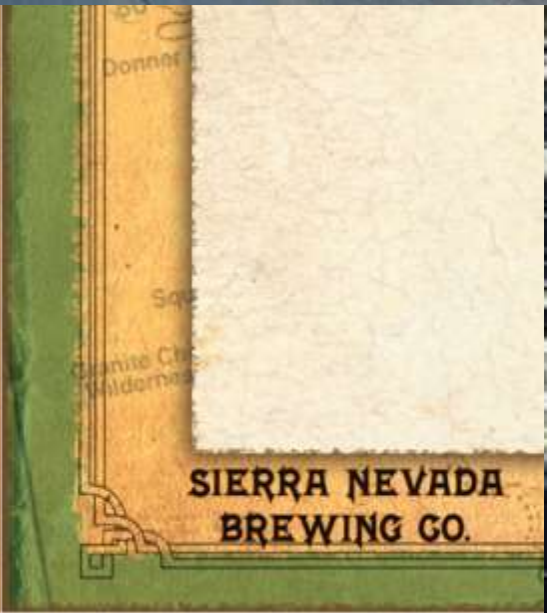


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Solar Thermal



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Moving East – Mills River, NC

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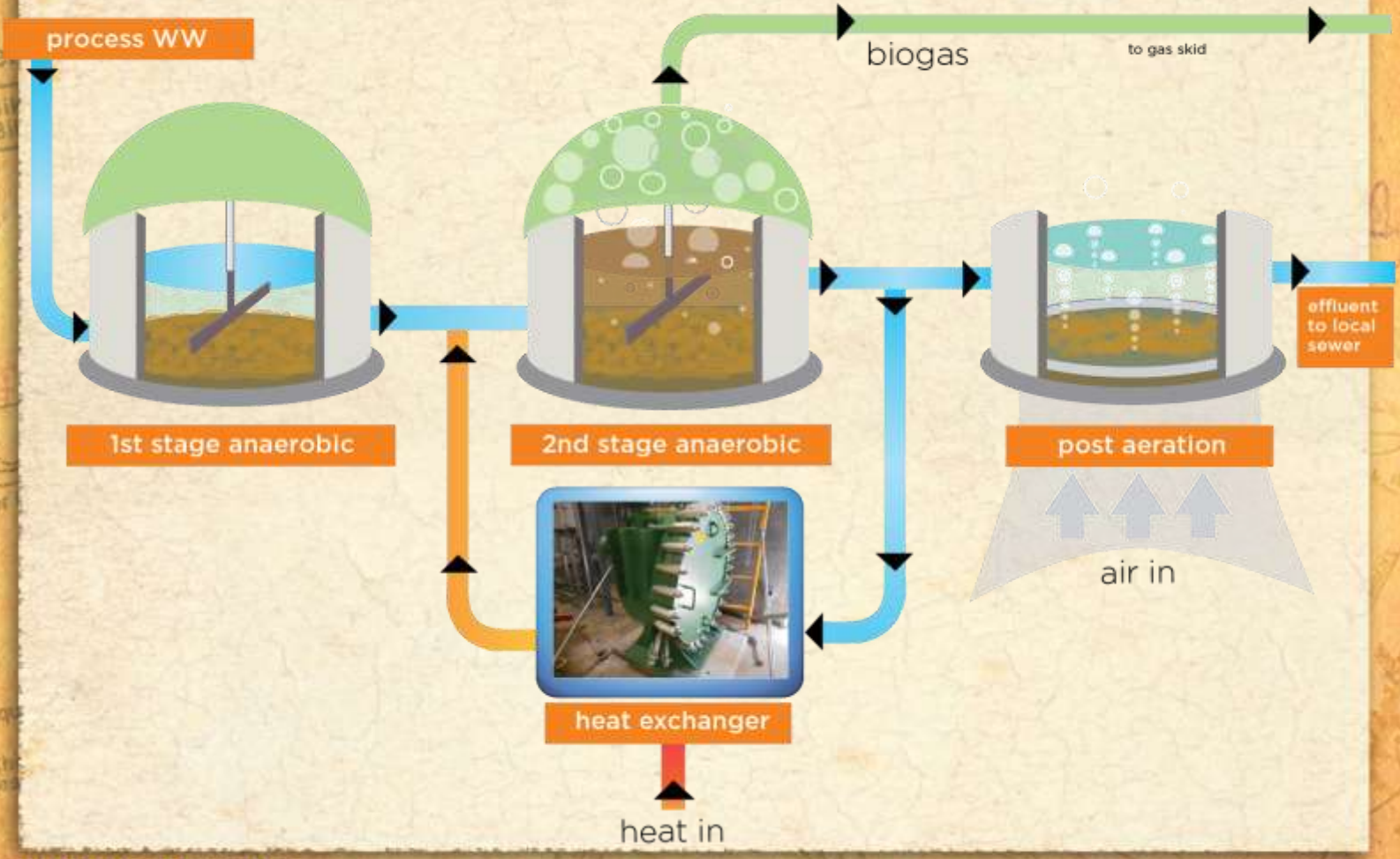
http://www.youtube.com/watch?feature=player_embedded&v=fWjlsbNo7Ws



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Treatment Process



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Site Under Construction

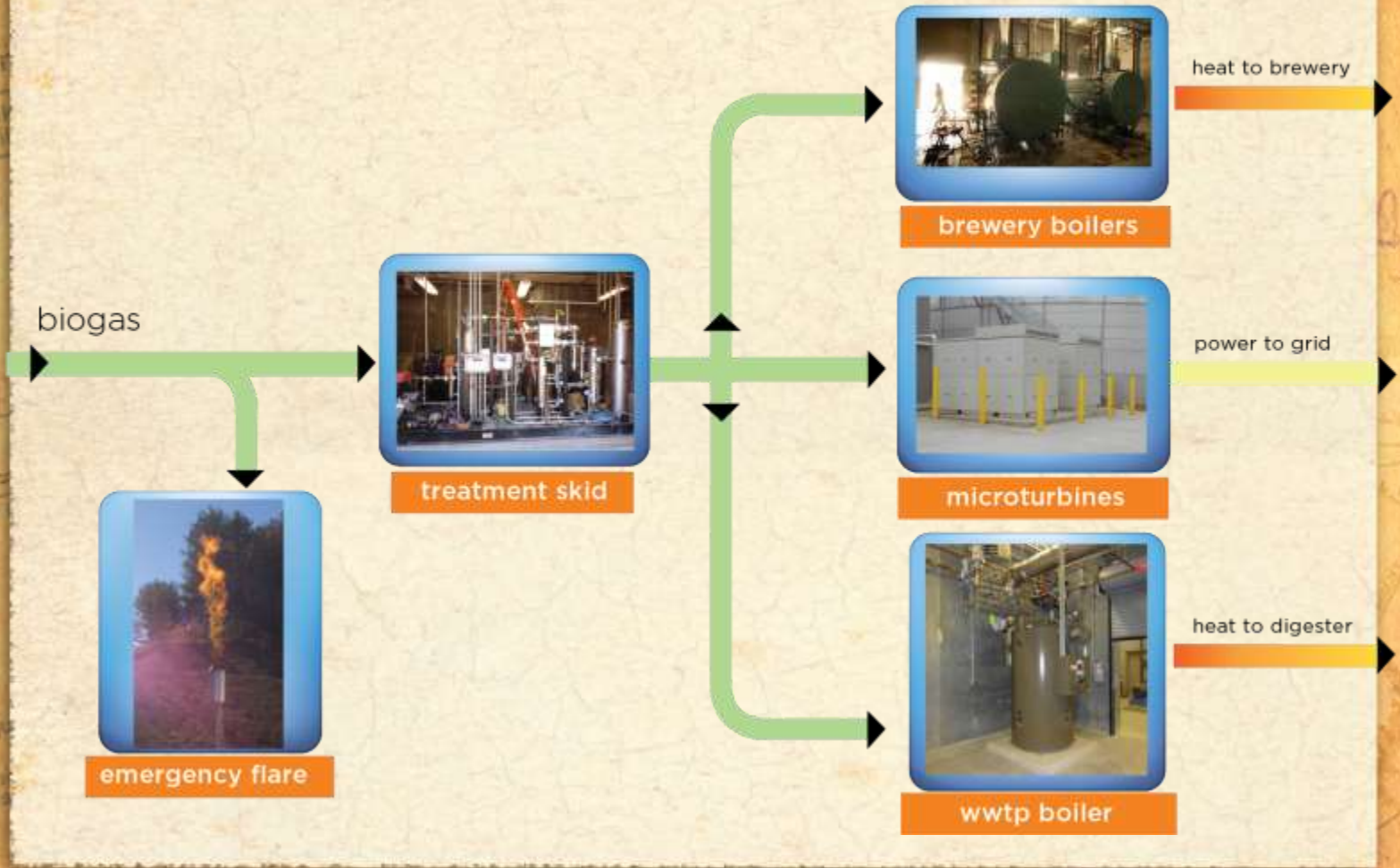


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Biogas Process



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Cheers!



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