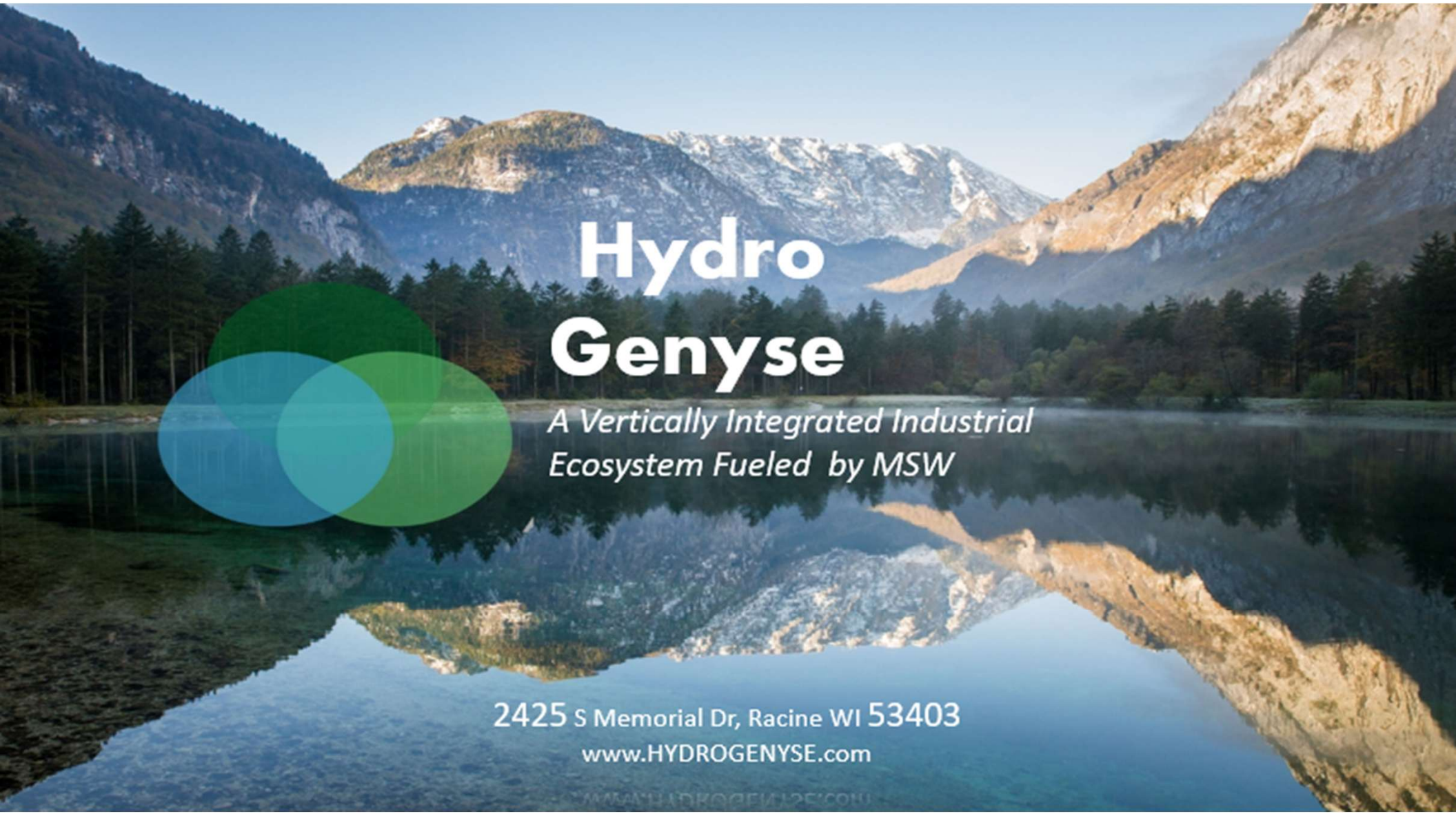

Hydro
Genyse
A Vertically Integrated Industrial
Ecosystem Fueled by MSW
2425 S Memorial Dr, Racine WI 53403
www.HYDROGENYSE.com

About This Project

This project analyzes the economic, social and climate effect involving the gasification of MSW and the direct connection to industries that can utilize by by-products on site.

59000 tons steel
24500 tons Aluminum
183500 tons aggregate

32,330 tons H2
164,614 tons CO2

70 MW green base load electric
77M gal clean water

Advantages of the ecosystem

Municipalities

- Reduced tipping fees from existing contracts
- Single source pickup cuts cost in half
- Can take haz-mat, yard waste, wastewater treatment flock
- Shared Revenue from recovered materials

Quarry Advantages

- 50% reduction in energy costs provided by the plant
- Reduction or elimination of de-watering expenses
- Revenue from aggregate
- Revenue from sale or land lease agreements

This project could increase the equalized value of property in Caledonia by 25%

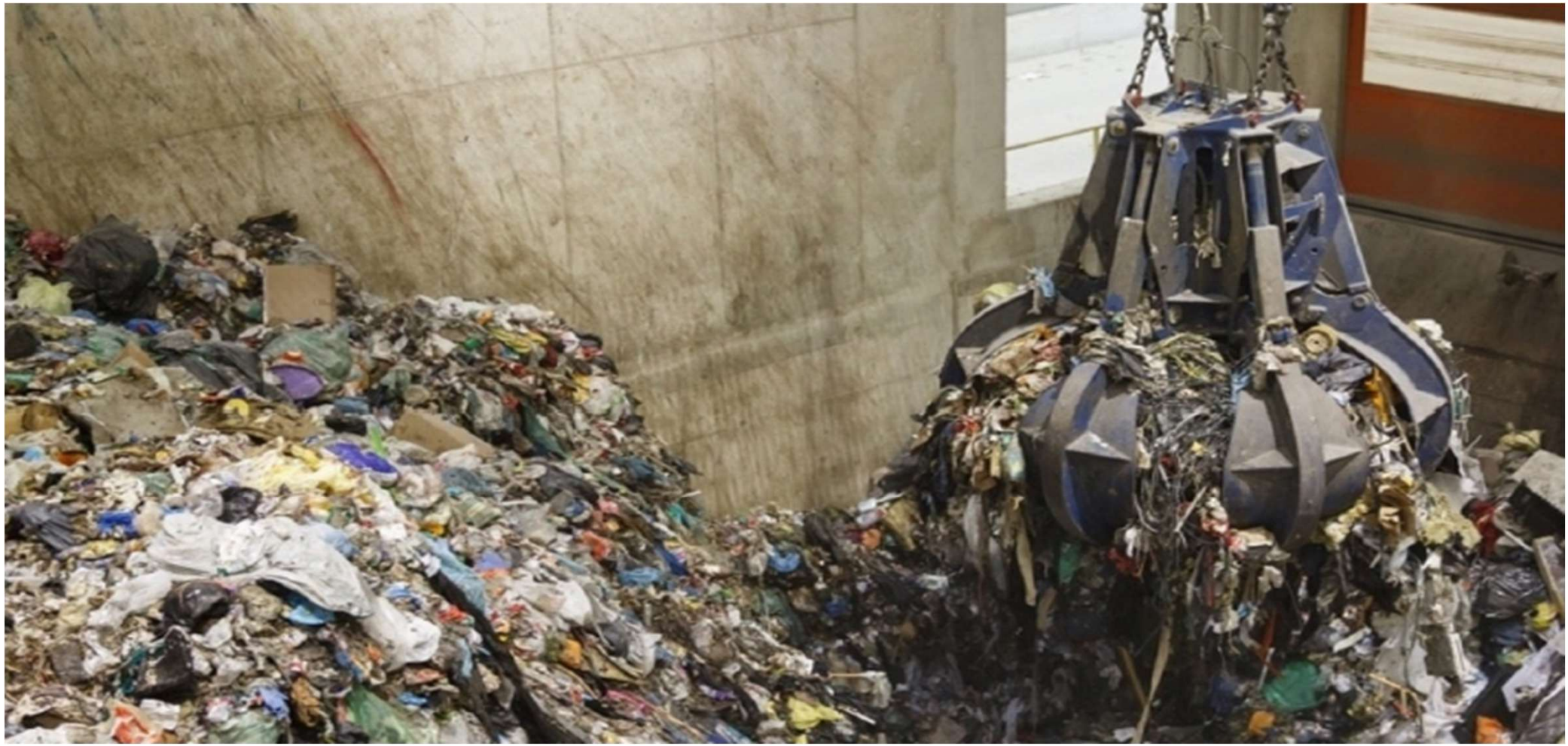
Table 3

EQUALIZED VALUE BY REAL ESTATE CLASS IN THE VILLAGE OF CALEDONIA: 2003 - 2008

Real Estate Class	Statement of Equalized Values: 2003			Statement of Equalized Values: 2008			Change in Equalized Value: 2003 - 2008	
	Land	Improvements	Total	Land	Improvements	Total	Number	Percent
Residential	$317,952,000	$1,055,953,100	$1,373,905,100	$464,900,600	$1,554,834,700	$2,019,735,300	$645,830,200	47.0
Commercial	27,808,000	106,585,700	134,393,700	45,767,600	144,116,300	189,883,900	55,490,200	41.3
Manufacturing	3,438,000	22,512,700	25,950,700	7,847,900	24,851,200	32,699,100	6,748,400	26.0
Agricultural	3,515,100	0	3,515,100	2,364,100	0	2,364,100	-1,151,000	-32.7
Undeveloped	1,054,700	0	1,054,700	614,500	0	614,500	-440,200	-41.7
Ag Forest	0	0	0	35,100	0	35,100	35,100	- -
Forest	3,106,000	0	3,106,000	6,310,200	0	6,310,200	3,204,200	103.2
Other	8,132,700	22,902,800	31,035,500	13,154,400	30,189,500	43,343,900	12,308,400	39.7
Total	$365,006,500	$1,207,954,300	$1,572,960,800	$540,994,400	$1,753,991,700	$2,294,986,100	$722,025,300	45.9

Source: Wisconsin Department of Revenue and SEWRPC.

Unsorted municipal solid waste is the source of energy




Gasification of waste will provide sustainable
baseload power, industrial gases and
economic development

Systems are modular and expandable – this project will use 6 modules

Projects in Japan

PROVEN TECHNOLOGIES AT COMMERCIAL SCALE

(Thermoselect) Gasification

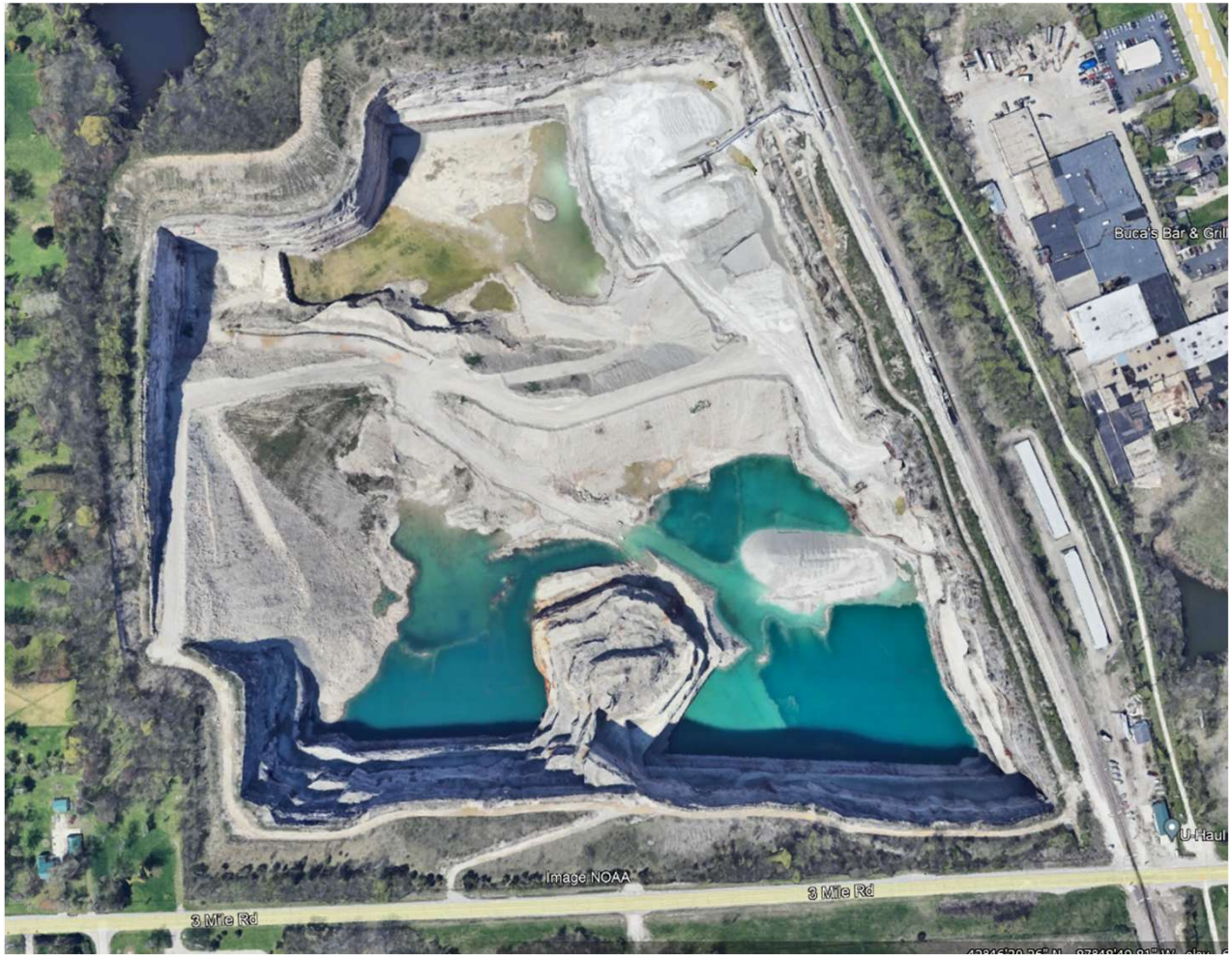
Technology Application -
Convert synthesis gas produced from MSW into clean energy

- 43 patented processes – over 300 patent awards worldwide
- 30 years of operating experience
- Has reliably processed millions of tons of waste
- 7 plants operating in Japan processing MSW since 1999

A Proposed Development Site in Racine

The project lies on 20 acres and can house the following:

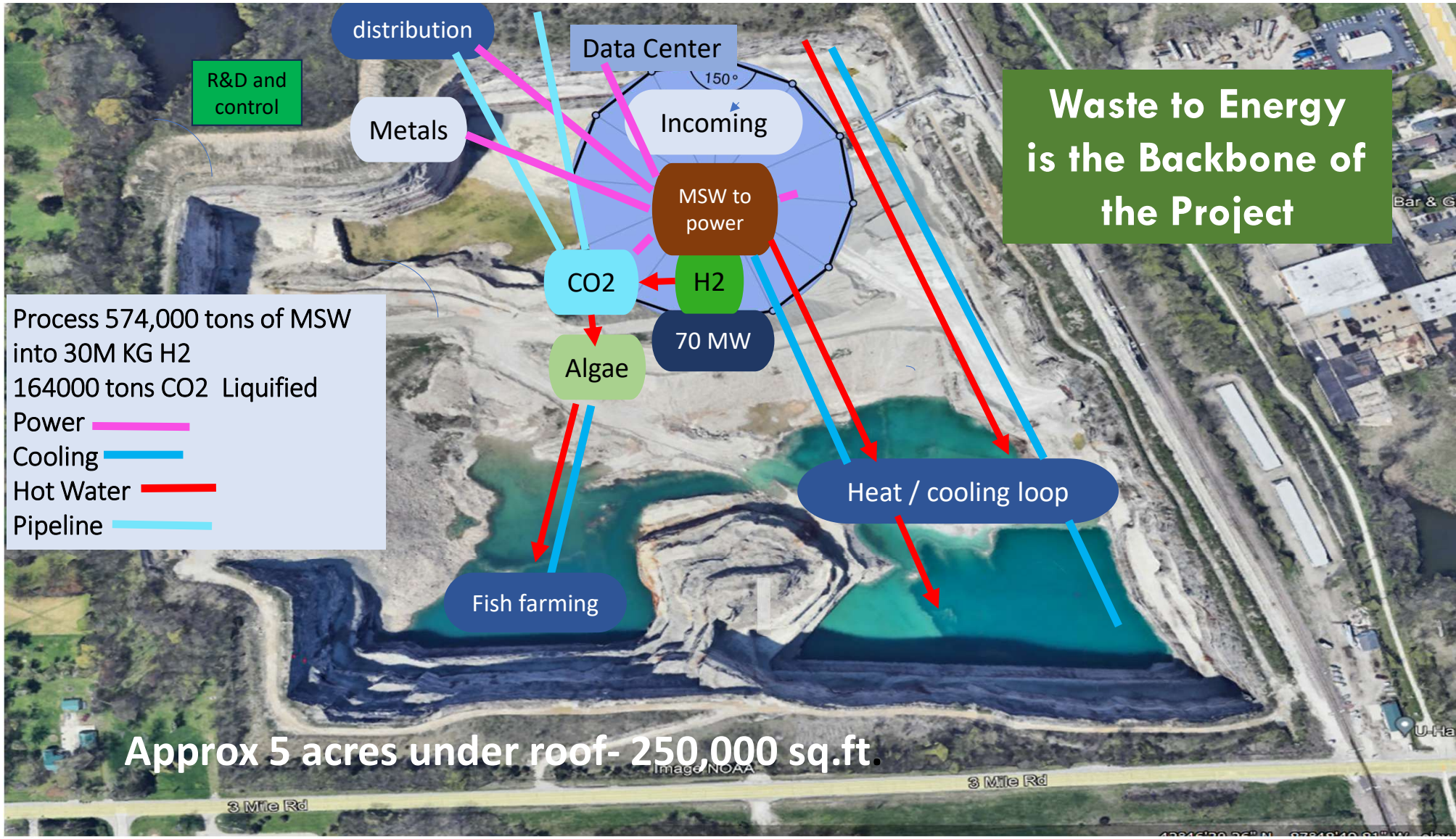
- Waste to Energy
- Green Hydrogen
- Green Steel
- Up to 140 MW peak power or 70 MW baseload power
- Green Aluminum
- Fish and Produce

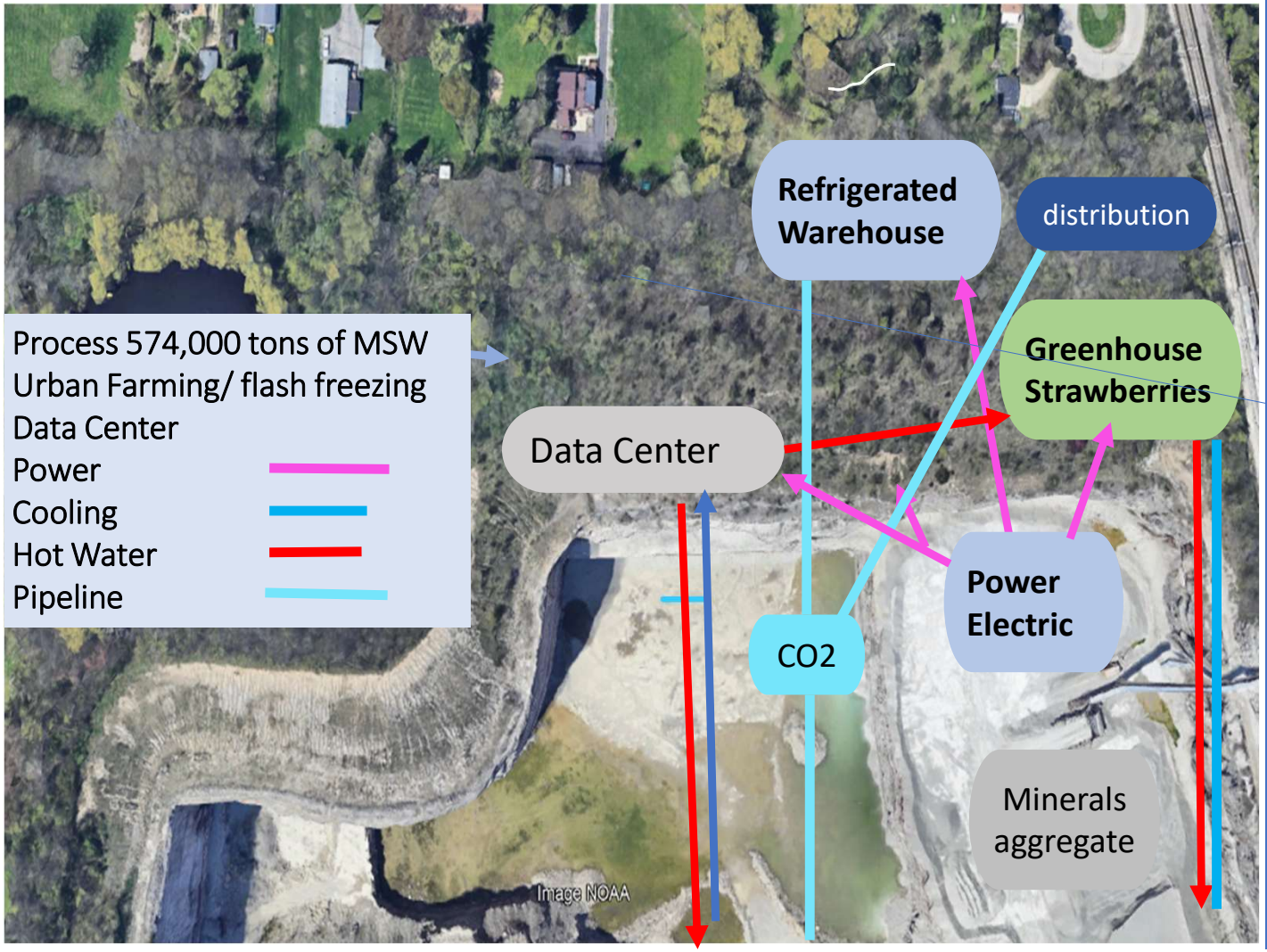


Utilizing Water for Cooling

This site is naturally filling with valuable water. This water is currently being pumped into Lake Michigan at great expense.

We can use this water and save energy on the industrial processes.


distribution
Data Center
R&D and control
Metals
150°
Incoming
MSW to power
Waste to Energy is the Backbone of the Project
CO2
H2
70 MW
Algae
Process 574,000 tons of MSW into 30M KG H2
164000 tons CO2 Liquified
Power
Cooling
Hot Water
Pipeline
Heat / cooling loop
Fish farming
Approx 5 acres under roof- 250,000 sq.ft.
3 Mile Rd
3 Mile Rd



Waste heat can power urban farming all year on the NW corner. Further processing and refrigerated warehouses would be on the same site.

A data center can utilize the power and free cooling.

This can supply organic food for the schools and local restaurants.

The circulation loop would create a waterfall that would be used to regulate water temperature with little energy

H2 fed to the fuel cells or generators can yield 154MW of green peak power and 77M gal of clean water

60000 metric tons H2 can deliver clean power with no emissions on site

CO2 from the process is captured and liquified for sale or use on site

210M gal clean water by-product is also captured and re-used.

Heat recovery off the fuel cells can deliver 14,000 tons of cooling with an absorption chiller

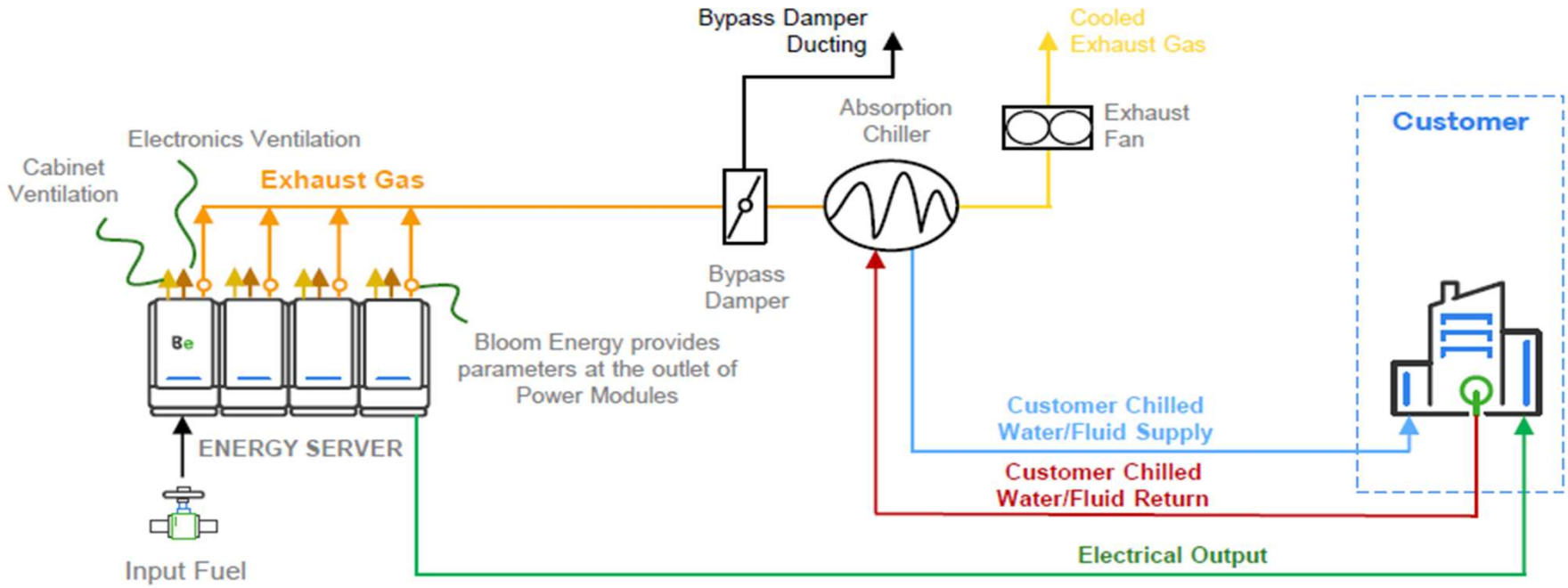
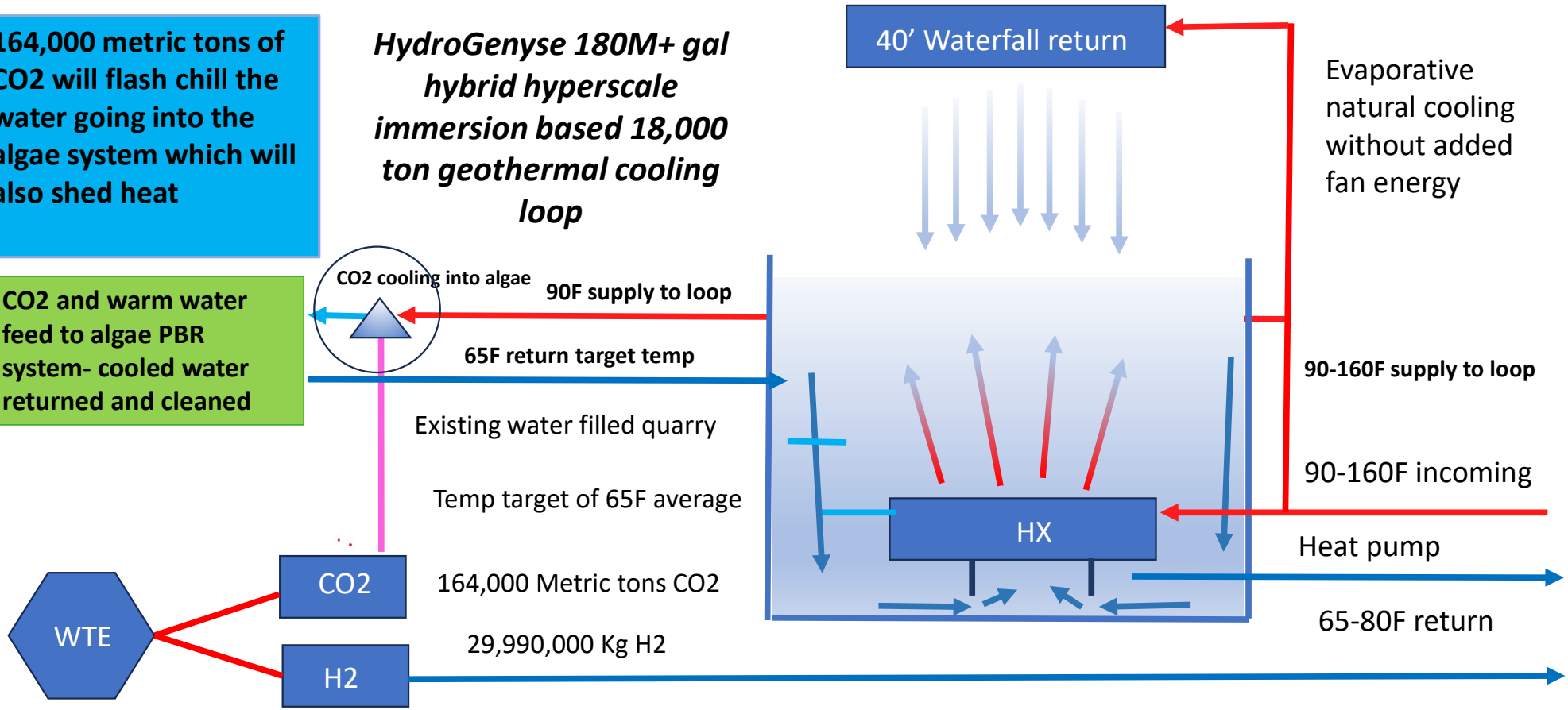


Figure 2: Bloom Energy Server Delivering High Temperature Heat for a Cooling Application

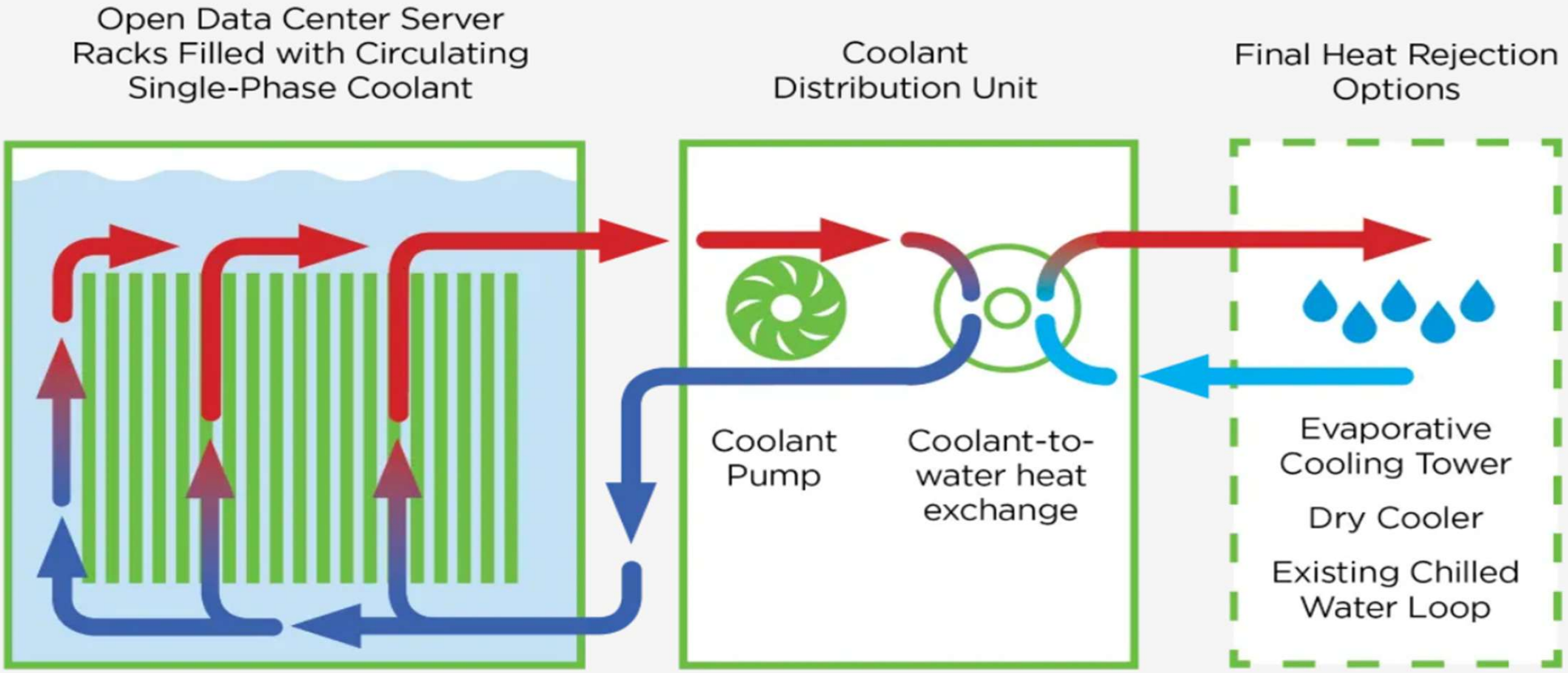
Additional 18MW of cooling from a hybrid heat pump

164,000 metric tons of CO2 will flash chill the water going into the algae system which will also shed heat

HydroGenyse 180M+ gal hybrid hyperscale immersion based 18,000 ton geothermal cooling loop



The chilled water loop can add 14MW of cooling



Heated coolant exits top of rack. Coolant returns to rack from heat exchanger at user-specified temperature.

This urban agricultural powerhouse can feed thousands of the same people supplying the MSW

1000's of tons of nutritional grade algae that can also feed fish.

Millions of lbs of restaurant grade fish

Urban high demand produce production all year

Processing on site

Each additional industry on the site will have a disruptive cost advantage in the market:

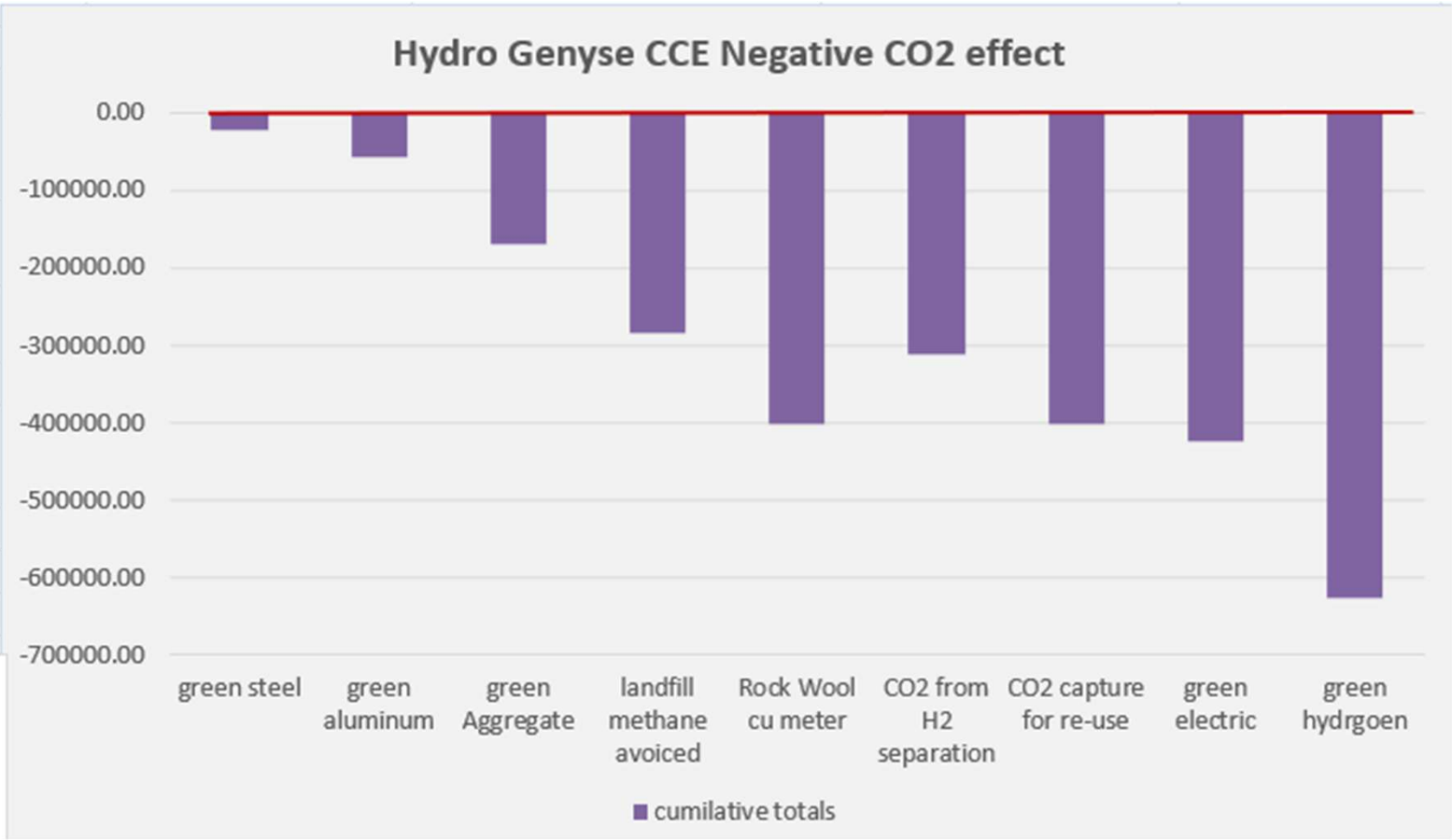
Steel- *49,000* ***tons*** *ready for end user*

Aluminum- *24,000* ***tons*** *sorted and bailed*

CO2- *164,000* ***tons*** ***a by-product of H2 PSA method***

Hydro Genyse CCE system is 2.91 tons negative CO_2 for every ton of MSW diverted from landfills

Tons Per Year



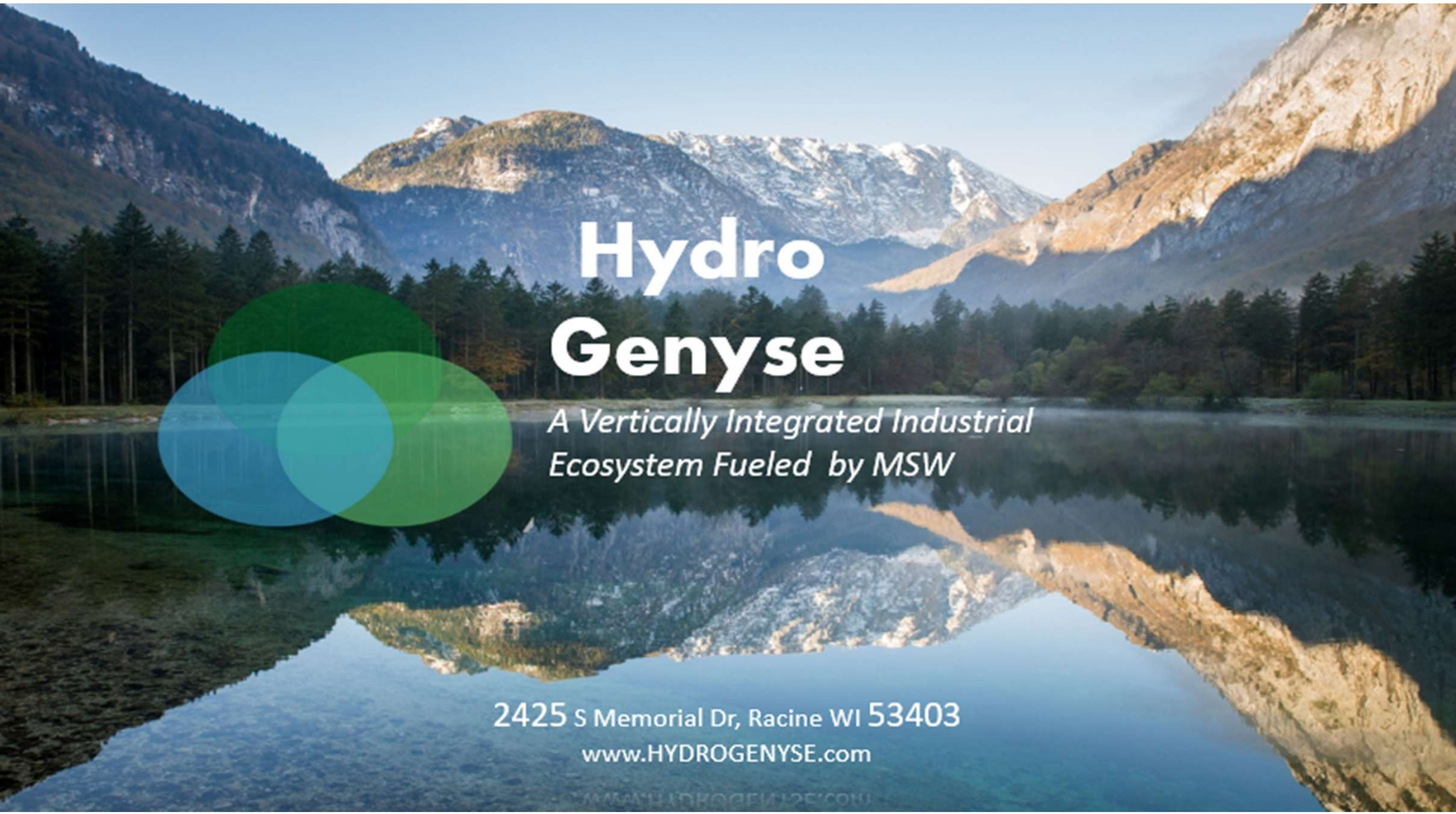
Hydro-Genyse Staff

Ralph Bencriscutto, President of Tower Energy International LLC. Founder of Hydro Genyse with over 30 years of experience designing and installing profitable integration of industrial process utilization of waste heat, water and energy. Tower Energy has completed over 3000 grant subsidized projects with paybacks under 2 years.

Dr. Malek Alkasrawi PhD-Chemical Engineering, MS in Biotechnology, BS Food & Dairy Technology. 30 years of experience in applied engineering research. Associate Professor Scientist, U. Wisconsin Stevens Point, Associate Lecturer, Chemistry-U. Wisconsin Parkside and Carthage College.
Languages: Arabic, Swedish, English

Dr. Stephen Lyon PhD-Social Ecology, MS Biology, BS Oceanography, BS Limnology
41 years of experience in the Public, Private and Academic sectors, including the environmental, water, food care, health care and building care industries.
Languages: English, Swedish, Spanish, Russian.

Dr. Peggy James: Business Director: Dr. Peggy James (PhD 1988) Professor of Politics Philosophy and Law, analyzes social/ political challenges for inclusion/cooperation between municipal partners, including community agreements and workforce partnerships.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