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Green Hydrogen Energy And Best Use Study For Land And Fresh Water

<u>Purpose</u>

Assess Practicality To Construct Green Hydrogen Production Facility

Intended Users

Investors, Affiliates, and, Green Hydrogen Water LLC

<u>Date:</u>

June 29, 2023

<u>Preface</u>

This Business Case is intended to objectively and rationally uncover the strengths and weaknesses relative to the development of a Green Hydrogen Production Facility and the related global hydrogen markets. Additionally, it will provide the Stakeholder relevant information essential to initiate a decision to participate in the Green Hydrogen Production Facility.

As a core strength, the <u>Stakeholder will have an option to participate independently, or, with a</u> <u>successful Group</u>, with proven success, in On-Shore Green Hydrogen Projects and Large Project Funding. <u>If needed, the Global Group will participate, and, bring sufficient collateral.</u>

Additionally, the subject property will be introduced along with its unique proximity within a wind turbine farm, and, regional natural gas line at the property's entrance. These two unique features provide for convenient grid connection. <u>The Business Case will provide significant and essential data to support fresh water production sufficient to operate a modern Green Hydrogen Production Facility.</u> (Detail and Photos Available At: <u>www.greenhydrogenwater.com</u>)

There will also be data supporting the "best use" for the property as compared to agriculture, and, other manufacturing uses such as bottled water production. A brief overview will identify local and regional community benefits as well. The below hydrogen units of measure are related to current patented hydrogen technology with high efficiencies.

SPECIAL NOTE #1:	Needed (m ³) Water Per Hour:	<u>41.760 (m³) Per Hour</u>
SPECIAL NOTE #2:	Available (m ³) Water Per Hour:	<u>397.468239 (m³) Per Hour</u>
SPECIAL NOTE #3:	Surplus (m ³) Water Per Hour:	<u>355.708239 (m³) Per Hour</u>
SPECIAL NOTE #4:	Proposed Regional Market:	Encompasses Over 40,000 Square Miles
SPECIAL NOTE #5:	Certified Business Valuation:	Supporting Seven (7) Fresh-Water Wells
SPECIAL NOTE #6:	Calculations/Variances:	Decimals - Excel, Calculator
SPECIAL NOTE #7:	Water Need For One (kg) of (H2):	13.5 (l) Water Needed For One (kg) (H2)
SPECIAL NOTE #8:	Price Used (kg) (H2):	Nine \$9.00 (USD) (kg)

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Introduction To Property

The property consists of 102.53 acres (ac) of usable land located just one-half mile off a major State Highway. Direct access to the property includes maintained roads allowing for year-around access. The property is located in the center of a major wind turbine farm and has a regional natural gas line at property's entrance.

The topographical features support a flat landscape allowing for 100% use of the land. Additionally, major upgrades have been made to prepare for future capital improvement projects. Present condition is excellent and turn-key for construction of a Green-Hydrogen Production Facility.

Global comparable Green Hydrogen Production Facilities support successful construction on less than Seventy (70) (ac). Thus, the variance between the 102.53 (ac) and the 70 (ac) provides for a conservative and most satisfactory abundance of land available to construct a World Class Green Hydrogen Production Facility. (Reference: Fukushima, Japan's New Hydrogen Facility).

<u>Hydrogen Markets</u>

Global announcements for hydrogen production to decarbonize various industries are increasing and include targets for Net Zero Emissions by 2050. Industrial demands are projected to be over 40% percent by 2030.

The market for hydrogen is one of the largest growing markets in the world. The International Energy Agency (IEA) in addition to the U.S. Department of Energy (DOE) provide supporting data that reflects opportunities based on global and regional demands to reach "Net Zero Emissions by 2050. Specifically, hydrogen is known to not emit CO2, and, is a leading option in reaching Net Zero Emissions. Currently, the majority of United States' hydrogen production facilities use hydrocarbon feedstock that releases large quantities of carbon dioxide and other gases into the air.

The United States has legislation providing for the transition from fossil fuel to hydrogen fuel to address climate change. Additionally, there are encouraging economic incentives for Stakeholders in conjunction with hydrogen projects. <u>As demands for Net Zero Emissions increase</u>, so will the demands for Green Hydrogen Production Facilities.

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Seven (7) Wells Production

The below "Tables" include seven (7) wells: Table (1) at 100% well water production, and, (Table 2) at 85% well water production. (85% calculations factor in preventive maintenance).

Hydrogen Water Production								
100% Table 1								
	Table 1		[100% Proc	duction Table .	<u>1]</u>			
	Wells	Gallons Per Minute (gpm)	Volume @ 100 (%) (gpm)		Adjusted Volume (gpm)	Gallons (gal/hr)	Cubic Meters (m³/hr)	Metric Tonne (mt/hr)
	1	250	250		250	15000	56.781177	56.78117
	2	250	250		250	15000	56.781177	56.78117
	3	250	250		250	15000	56.781177	56.78117
	4	250	250		250	15000	56.781177	56.78117
	5	250	250		250	15000	56.781177	56.781177
	6	250	250		250	15000	56.781177	56.78117
	7	250	250		250	15000	56.781177	56.78117
	Totals	1750	1750		1750	105000	397.468239	397.468239

Hydrogen Wa	ter Product	ion						
85% Table 2								
	Table 2		[85% Produ	uction To Acc	count For Pr	eventive Main	tenance Table 2]	
	Wells	Gallons Per Minute (gpm)	Volume @ 85 (%) (gpm)		Adjusted Volume (gpm)	Gallons (gal/hr)	Cubic Meters (m³/hr)	Metric Tonne (mt/hr)
	1	250	212.5		212.5	12750	48.26400045	48.26400045
	2	250	212.5		212.5	12750	48.26400045	48.26400045
	3	250	212.5		212.5	12750	48.26400045	48.26400045
	4	250	212.5		212.5	12750	48.26400045	48.26400045
	5	250	212.5		212.5	12750	48.26400045	48.26400045
	6	250	212.5		212.5	12750	48.26400045	48.26400045
	7	250	212.5		212.5	12750	48.26400045	48.26400045
	Totals	1750	1487.5		1487.5	89250	337.8480032	337.8480032

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The below "Tables" (Table 3 and Table 4) support the estimated hydrogen revenues relative to water production referenced in (Table 1 and Table 2). (Revenue calculated at Nine (\$9) (USD) (kg).

Hydrogen Revenue Estimates (USD)							
Table 3							
	Table 3		[100% Water Prod	luction Hydrogen Re	venue Estimat	es (USD) Table 3]	
	Water Cubic Meters (m³/hr)	Daily 12 (HRS) Production (m³/day)	Annual Days Production 310 (m³/yr)	Annual Liters (l/yr)	(I) Required To Produce One (kg) (H2)	Annual (kg) (H2)	Annual Estimated Revenue (\$)
	397.468239	4769.618868	1,478,581.8491	1,478,581,849.1	13.5	109,524,581.413	\$ 985,721,233

Hydrogen Rev	venue Estimate	s (USD)					
Table 4							
	Table 4		[85% Water Produ	ction Hydrogen Reve	enue Estimate	s (USD) Table 4]	
	Water Cubic Meters (m³/hr)	Daily 12 (HRS) Production (m³/day)	Annual Days Production 310 (m³/yr)	Annual Liters (l/yr)	(i) Required To Produce One (kg) (H2)	Annual (kg) (H2)	Annual Estimated Revenue (\$)
	337.848003	4054.17604	1,256,794.5719	1,256,794,571.9	13.5	93,095,894.2	\$ 837,863,048

Subject Property Market

The market for the "subject property", based on its location has the potential to include a region that physically encompasses over 40,000 (forty-thousand) square miles (sq mi). The current planning for hydrogen facilities is concentrated in the South, and, the furthest North West border of the State. Thus, leaving the Central Region as a prime location for economical green hydrogen distribution to the relative cities. Additional markets for the "subject property" include: 1) selling electricity to the existing electrical grid that surrounds the "subject property"; and, 2) providing hydrogen through the existing natural gas line located at the "subject property's" entrance.

Hydrogen As Feedstock

Over the last five years multiple countries have adopted significant policy to reduce carbonbased fuels and transition into green energy. As those policies mature, hydrogen will play an important role becoming an essential feedstock for various energy sources globally.

Best Use For Property

The best use for property has been determined from the relative potential revenues compared with, and based on, annual estimated production of Hydrogen, Fresh Bottled Water, and, Agriculture use.

Table 5							
[Best Use Table S	[Best Use Table Supporting Hydrogen With Highest Potential Revenue]						
Commodity	Distribution	Acres Production	Property Use	Annual Estimated Revenue			
Hydrogen	Regional/Global	102.53	(H2) Facility	\$ 985,721,233			
Bottled Water	Regional/Global	102.53	Bottling Facility	\$ 341,000,000			
Cotton	National/Global	102.53	Cultivation	\$ 70,000			
<u>Source</u>							
Cotton: USDA, Oct							
Bottled Water: Ce)21.						
Green Hydrogen:							

Stakeholder Participation

The property and its water and wind resources will be used to develop a Green Hydrogen Production Facility. Stakeholders will have an option to participate independently, or, with a successful "Group" proven in "On-Shore Green Hydrogen Projects". The "Stakeholder" can have an opportunity to participate in ALL phases of the project, or, select a specific phase they wish to participate in. Should "Stakeholders" need a source of collateral, Green Hydrogen Water LLC has established relationships with global entities that have reviewed the project and asset/s, and, each have interest in providing collateral starting at \$ 2 Billion USD. Additional amounts are available, if needed, and can be obtained in \$ 1 Billion USD denominations.

Local and Regional Benefits

It is anticipated many local and regional entities, including public and private organizations, may benefit from successful operations relating to the Green Hydrogen Production Facility. As a standard starting point, the local Counties will realize benefits supporting their Schools, Fire Departments, Police and Sheriff Departments, along with other Commercial entities.

<u>Conclusion</u>

This "Business Case" has provided the core analysis required to support "most-sufficient" fresh water production required to sustain a modern Green Hydrogen Production Facility. Based on the water production conclusions, the estimated revenues for hydrogen production exceeded \$985 Million annually at 100% water production, and, \$837 Million annually at 85% water production.

With respect to the "Best Use" analysis, it was determined a *Green Hydrogen Production Facility would be optimal* as supported by projected annual revenues found in Table Five (5).

In efforts to reach Global Net Zero Emission demands, Green Hydrogen Production Facilities will be a primary, and, perhaps an essential Global option.

The subject property is in a prime location and has the potential to service an area approximately 40,000 square miles.

Additional strength is added in conjunction with the project stakeholders that can include *"Industry Leaders"* with a proven history in developing on-shore green hydrogen production facilities, along with, other global entities with a proven history facilitating and funding multibillion-dollar global projects. *Moreover, these participants can bring patented technology that enhances hydrogen production efficiencies multiple times. Thus, out-pacing competition.*

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Units of Measure, Calculations, Notes

- (m³) Cubic Meter
- (l) Liters
- (mt) Metric Tonnes
- (gal) US Gallons
- (ac) Acres
- (mi) Miles
- (sq mi) Square Mile
- (gpm) Gallons Per Minute
- (gph) Gallons Per Hour
- - 41.760 (m³) Per Hour = 11,031.82490 US Gallons (gal)
 - One (m³) = 264.172052 (gal)
 - One US (gal) = .0037854118 (m³)
 - One US (gal) = 3.785411784 (l)
 - One (m³) Water Weight = 1000 (kg)
 - ** NOTE **

A cubic meter of pure water at the Temperature of maximum density (3.98 C) and standard atmospheric pressure has a mass of 1000 (kg), or, one tonne.

• 13.5 (l) Water Needed To Produce One (kg) (H2) "Global Organization Data"