ABNR TECHNOLOGY PROCESS FLOW DIAGRAM

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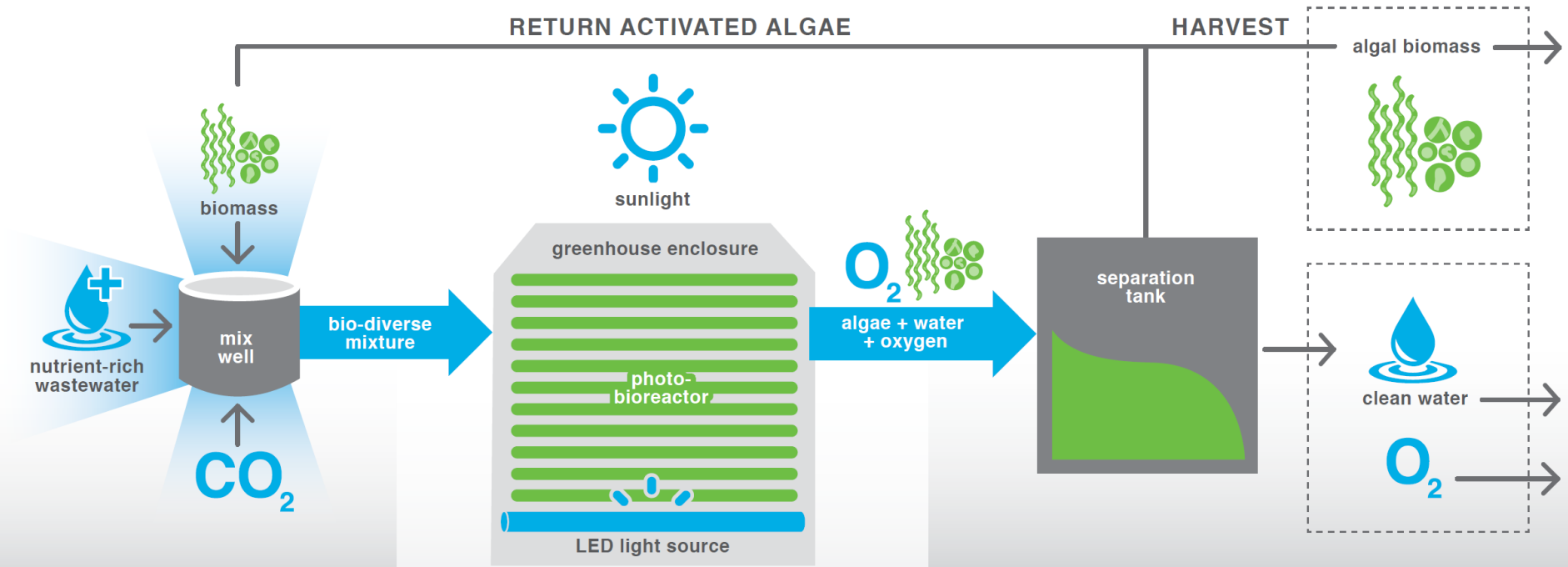

MIX PHASE

Nutrient-rich (N&P) wastewater and CO_2 are mixed with a blend of biological organisms (Algae) to initiate the recovery of harmful nutrients.

RECOVER PHASE

The mixture travels up through a series of glass pipes (Photo Bio-Reactor or "PBR") allowing photosynthesis to occur. The process consumes nutrients (N&P) and CO_2 and results in clean water and pure oxygen.

SEPARATE PHASE

Advanced ultrafiltration separates the bio-diverse mixture into two streams - a clean water stream and a return activated algae stream. The recycle stream supplies healthy biomass to reseed and treat new wastewater entering the Mix Phase. Surplus biomass can be sold into multiple, diverse markets.

System process and controls mimic traditional activated sludge plants.

SYSTEM BENEFITS

CLEARAS

- **Sustainable** and **Chemical Free** Approach to Nutrient Recovery
- Primary Benefits
  - Total Phosphorus (TP) recovery
  - Total Nitrogen (TN) recovery
- Ancillary Benefits
  - Total Suspended Solids (TSS) removal
  - Biochemical Oxygen Demand (BOD) removal
  - Carbon Dioxide Recycling Potential
  - Dissolved Oxygen Increases (30 – 40%)
  - Upstream cost savings potential
- **Non-Chemical**
  - No additional sludge handling costs
- **Modular** and **Scalable**, **Bolt-on** Tertiary Treatment
  - Easily expands to meet increased flow and loading requirements
  - Allows the plant to retire the conversation on nutrients

Ultrafiltration as final ABNR phase allows for savings associated with existing disinfection methods; chemical savings (chlorine) or power savings (UV).

SYSTEM BENEFITS

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CLEARAS ADVANTAGES OVER CHEMICAL ALTERNATIVES

CLEARAS ABNR™ NUTRIENT RECOVERY MODEL	CHEMICAL WASTEWATER TREATMENT ALTERNATIVE
Sustainable & chemical free	Chemically intensive: Requires continuous, substantive chemical dosing
Produces valuable biomass co-product at little/no cost	Waste: Produces chemical sludge with costly disposal requirements
Provides a comprehensive solution & enables other technologies	Transfers the problem from a liquid to a solid and only solves a singular problem
Achieves current and planned effluent nutrient water quality requirements	Struggles to meet existing and planned effluent nutrient water quality requirements

PERFORMANCE	SUSTAINABILITY	SCALABILITY	CO-PRODUCT VALUE
• Best-in-Class • Near Non-Detect • Protected IP	• Biological • Natural • Renewable	• Bolt-on • Modular • Design Flexibility	• Multiple Industries • Global Markets • Growing Demand

LOWER TOTAL COST OF OWNERSHIP OVER COMPETITION

CLEARAS is at the center of a changing market landscape; delivering a next generation technology solution with a total cost of ownership advantage to customers.

OUR EXPERIENCE

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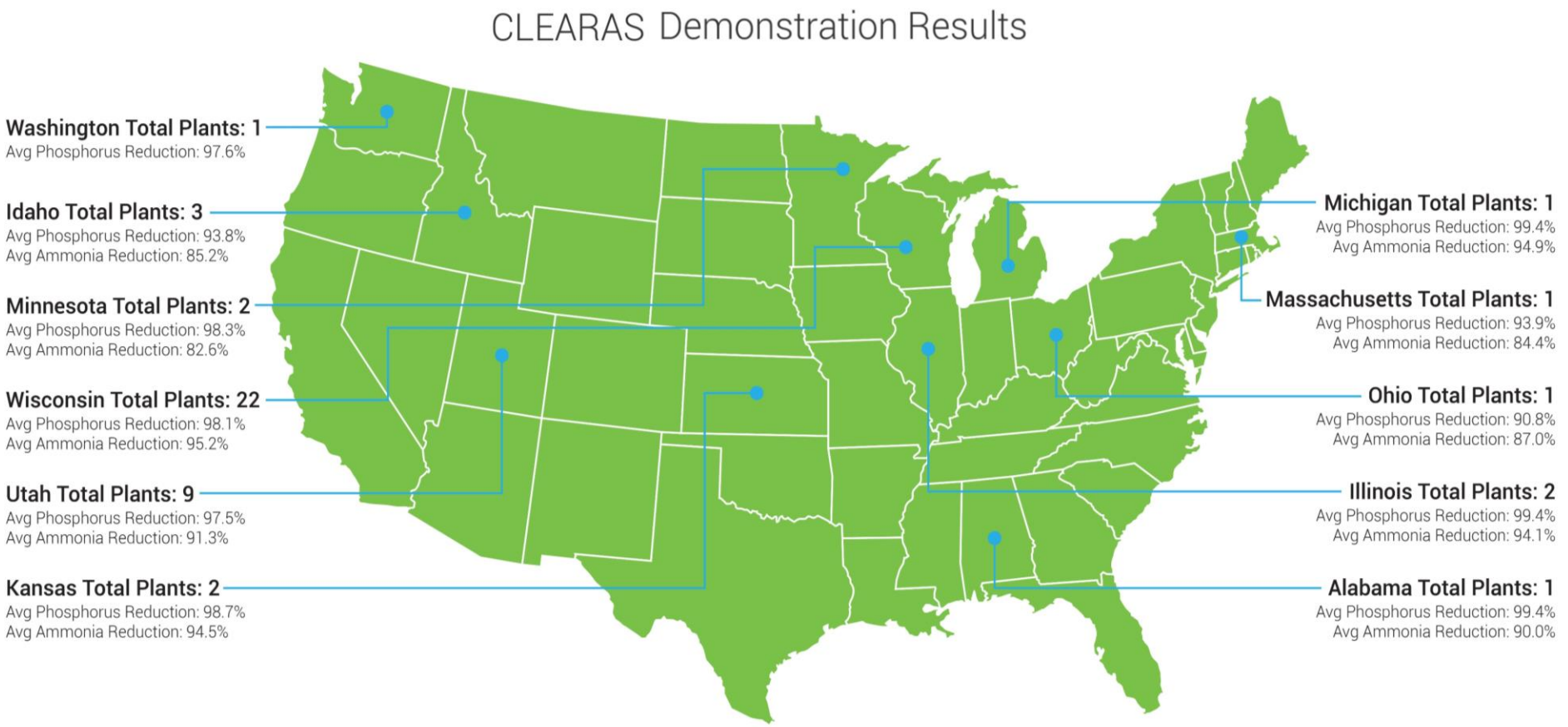

Project results driving growth opportunities. Over 25,000,000 gallons treated through technology demonstration efforts.

WISCONSIN PROJECT HIGHLIGHTS

CLEARAS

Village of Roberts

- ✓ Design Flow: 0.150 MGD
- ✓ Design TP: 4.0 mg/L
- ✓ Future TP Limit: 0.04 mg/L
- ✓ Biomass Produced: 400 lbs./day
- ✓ Estimated CLEARAS Scope: $2.13 M
- ✓ Construction Start Date: Spring 2019
- ✓ Target Commission Date: December 2019
- ✓ Source of Funding:
  - ✓ Clean Water Fund Program: (Loan)
  - ✓ Phosphorus Reduction Priority Principal Forgiveness: ($1,000,000)
  - ✓ Priority Principal Forgiveness: ($455,000)

Photobioreactor Specs.

- ✓ Number of PBRs: 10
- ✓ Linear Feet of PBR Piping: 36,125
- ✓ PBR Length: 140’
- ✓ PBR Height: 12’ 7/8”
- ✓ Greenhouse Dimensions: 160’L x 35’ 6”W x 14’ 6”H

WISCONSIN PROJECT HIGHLIGHTS

CLEARAS

Village of Cambria

- ✓ Design Flow: 0.120 MGD
- ✓ Design TP: 2.0 mg/L
- ✓ Future TP Limit: 0.075 mg/L
- ✓ Biomass Produced: 160 lbs./day
- ✓ Estimated CLEARAS Scope: $1.68 M
- ✓ Construction Start Date: Summer 2019
- ✓ Target Commission Date: January 2020
- ✓ Source of Funding:
  - ✓ Clean Water Fund Program: (Loan)
  - ✓ Phosphorus Reduction Priority Principal Forgiveness: ($1,000,000)
  - ✓ Priority Principal Forgiveness: ($400,000)

Photobioreactor Specs.

- ✓ Number of PBRs: 6
- ✓ Linear Feet of PBR Piping: 15,385
- ✓ PBR Length: 88’ 4 4/5”
- ✓ PBR Height: 14’ 1 7/16”
- ✓ Greenhouse Dimensions: 110’L x 30’W x 14’ 6”H

WISCONSIN PROJECT HIGHLIGHTS

CLEARAS

City of Waupun

- ✓ Design Flow: 2.0 MGD (membranes sized for 4 MGD)
- ✓ Design TP: 3.6 mg/L
- ✓ Future TP Limit: 0.05 mg/L
- ✓ Biomass Produced: 4700 lbs./day
- ✓ Estimated CLEARAS Scope: $14.7 M (includes a dryer for biomass)
- ✓ Construction Initiation: Spring 2021

City of Beaver Dam

- ✓ Design Flow: 5.1 MGD
- ✓ Design TP: 2.4 mg/L
- ✓ Future TP Limit: 0.075 mg/L
- ✓ Biomass Produced: 7900 lbs./day
- ✓ Estimated CLEARAS Scope: $22.3 M (includes a dryer for biomass)
- ✓ Construction Initiation: Summer 2021

CO-PRODUCT OPPORTUNITY

ABNR yields an algal biomass which can be sourced into a diverse range of markets.

Opportunity for municipal and industrial facilities to recover costs associated with the capital expenditure of ABNR.

Residual income stream back to the facility throughout the useful life of the project.

CO-PRODUCT OPPORTUNITY

CLEARAS

CLEARAS BIORESOURCES

- A subsidiary of CLEARAS, Inc.

DETAILS

- Agreement Length: 3 – 5 Years
- Biomass Value: $1,000 - $2,000/Ton
  - ~ 70% to Partner
  - ~ 30% to CLEARAS
- Aligns Incentives
- Recurring Revenue Stream

CLEARAS SERVICES

- Marketing & Communications
- Sales
- Contracting
- Initial Biomass Characterization
- Biomass Characteristics Reports
- Biomass Optimization Collaboration
- Logistics Management

PARTNER / CUSTOMER RESPONSIBILITIES

- Dewatering
- Drying
- Packaging
- Loading

ALGAE COMPETITIVE ADVANTAGE

CLEARAS

SUPERIOR TO LAND-BASED BIOMASS	
Geographically independent	Algae can be grown in a wide variety of environments throughout the world
Higher productivity	Grows faster, with continuous growing and harvest seasons
Superior composition	Most land-based plants, such as corn, can be 80% non-oil or waste; algae can be as high as 50% oils and also high in protein content
Ecologically beneficial	Emits only oxygen to the atmosphere while sequestering C02
More efficient use of energy	More than 50% of energy consumed by land-based crops is focused on building non-productive materials (e.g. cornstalks)

EXAMPLE: An acre planted with corn produces roughly 20,000 lbs. of feedstock per year. The CLEARAS ABNR system can produce roughly 8,000 lbs. of feedstock per day – nearly 150X more production per acre.

POSSESSES UNIQUE PROPERTIES	
Algae-based compounds used in most vitamins & Nutraceuticals	Omega 3s (including DHA & EPA) Omega 6s, Beta Carotenoids (including Beta Carotene),
Algae extracts are key in cosmetics	Many anti-aging creams and anti-oxidant products contain algae ingredients
Algae in natural food colorants	By year-end 2018, more than 200 commonly used artificial colors in food will no longer be legal for human consumption
Algae as a protein replacement	Algae is likely the protein replacement of the future, key advantage over land-based biomass
Algae as a Bio-Filler	Algae is used as a filler, in Bio-Foams, that are used to create many products sold globally today.

EXAMPLE BUYERS OF ALGAE PRODUCTS:
Cargill, Monsanto, M&M Mars, L'Oréal, Sephora, Reed Mari-culture, Nestle, Kraft, General Mills, ConAgra, US Nutraceuticals, Valensa

Algae is poised to be a long-term, sustainable feedstock option for food, feed, and other markets.

BIOMASS PRODUCTS

CLEARAS

Soil Amendment

Food & Feed

Microalgae can contain anywhere from 20% - 70% protein content compared to 10% for corn and 40% for soybeans.

BIOMASS PRODUCTS

CLEARAS

Bioplastics

Biofuels

Biochemicals

CLEARAS BioResources currently has offtake arrangements with companies focused on creating foam insoles for some of the largest shoe manufacturers in the U.S.