

SUSTAINABILITY & RESILIENCE

FOCUSED STRATEGIES FOR IMPACT, SCALE & FUNDING








United States Business Council
for Sustainable Development



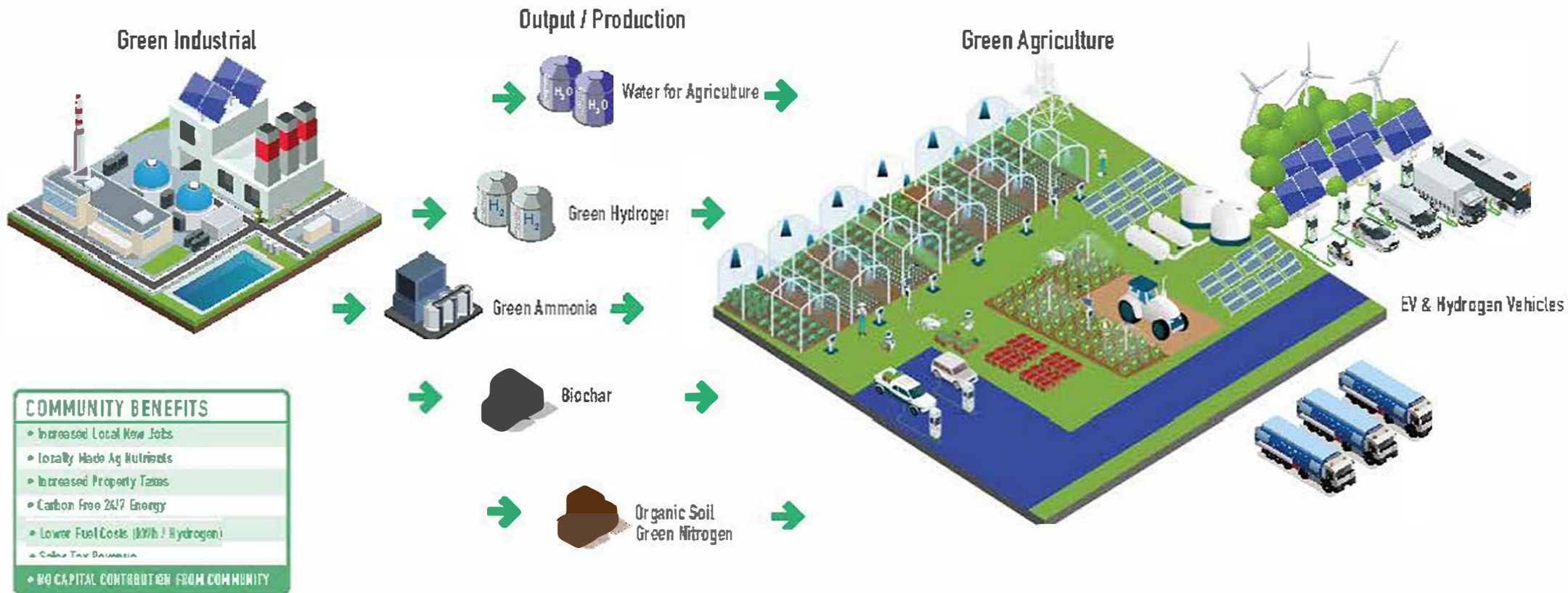
TARIQUE J RASHAUD | JANUARY 2023

Carbon Market Strategic Focus : *Food-Water-Energy Nexus*

	Energy Efficiency	BIOCHAR (Food/NBS)	RENEWABLE ENERGY	CARBON CAPTURE	WASTE-to-ENERGY & CIRCULARITY
					
SAMPLE PROJECT TYPE:	Industrial	Pyrolysis (Agriculture) Soil Amendment	Micro-Grid solar & H2	CCUS & DAC units	Waste-to-Energy & Composte
PROGRAM AUTHORITY:	Gold Standard ACR, GCC	Expected to be approved by American Carbon Registry ("ACR") in Q2'23; F	Global Carbon Council	Various	Established through Verra; Future through Global Carbon Council
TARGET MARKET(S):	Voluntary	Voluntary and Compliance ⁽¹⁾	Voluntary	Voluntary	Voluntary



SUSTAINABLE AGRICULTURE, MANUFACTURING & TRANSPORTATION





POWERTAP
— HYDROGEN —

MAVERICKS

Xemplar Carbon
FOOD - WATER - ENERGY

NET ZERO CARBON INDUSTRIAL PARK

GREEN ENERGY & FUELING INFRASTRUCTURE

NET ZERO BEYOND | RENEWABLE INFRASTRUCTURE

Wind and Solar Energy Production

Battery Storage

Waste to Energy Plant

Charging Center Hydrogen and EV

Fueling Center

Clean Hydrogen Technology and Production

Waste Water Purification

Net Zero Controlled Environment Agriculture

eVTOL Airport





POWERTAP
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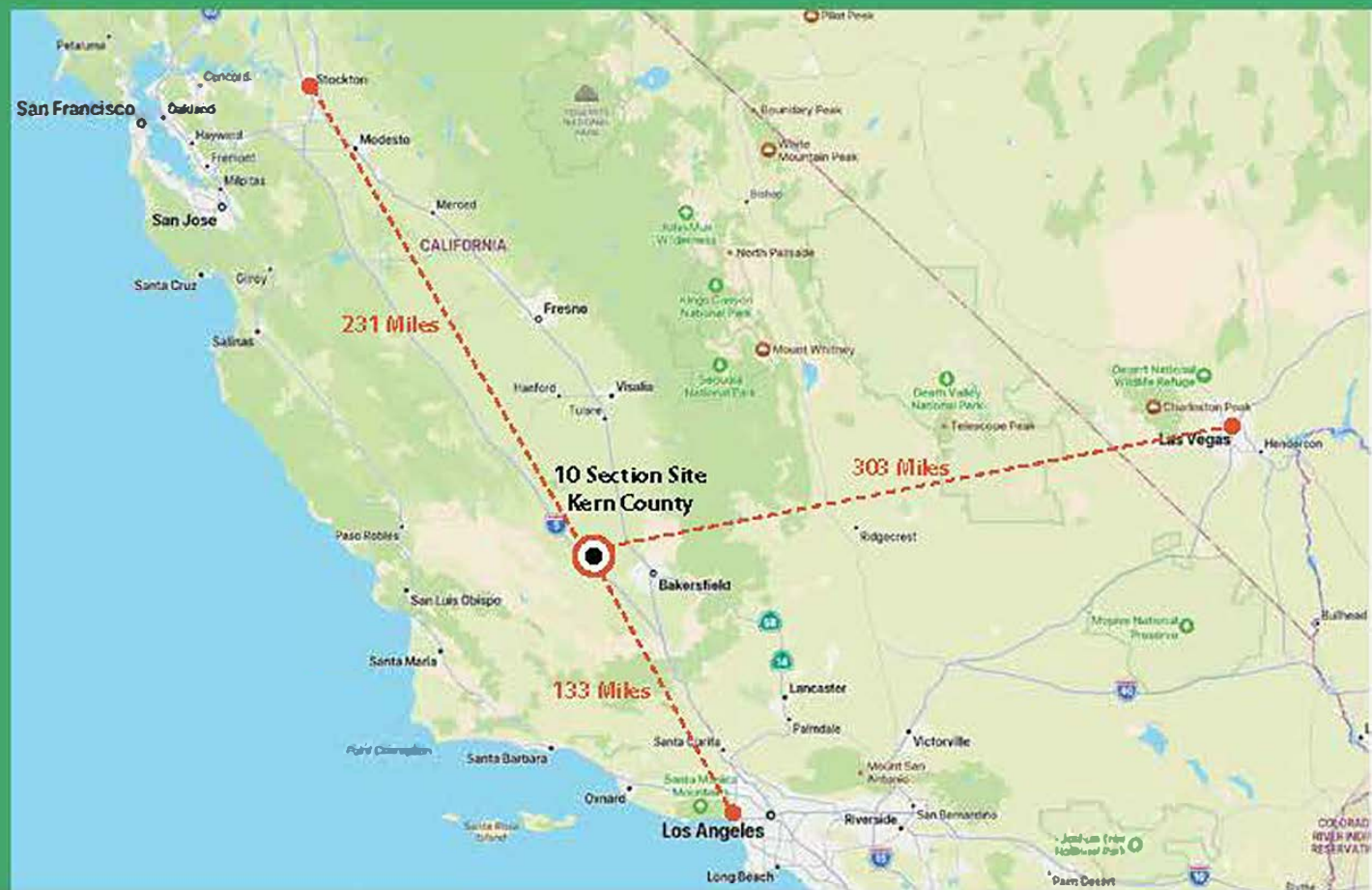


NET ZERO CARBON INDUSTRIAL PARK

10 SECTION

10 SECTION CENTRALLY LOCATED

- 133 MILES TO PORT OF LOS ANGELES
- 231 MILES FROM STOCKTON
- 303 MILES TO LAS VEGAS



Strictly Private & Confidential





POWERTAP
— HYDROGEN —

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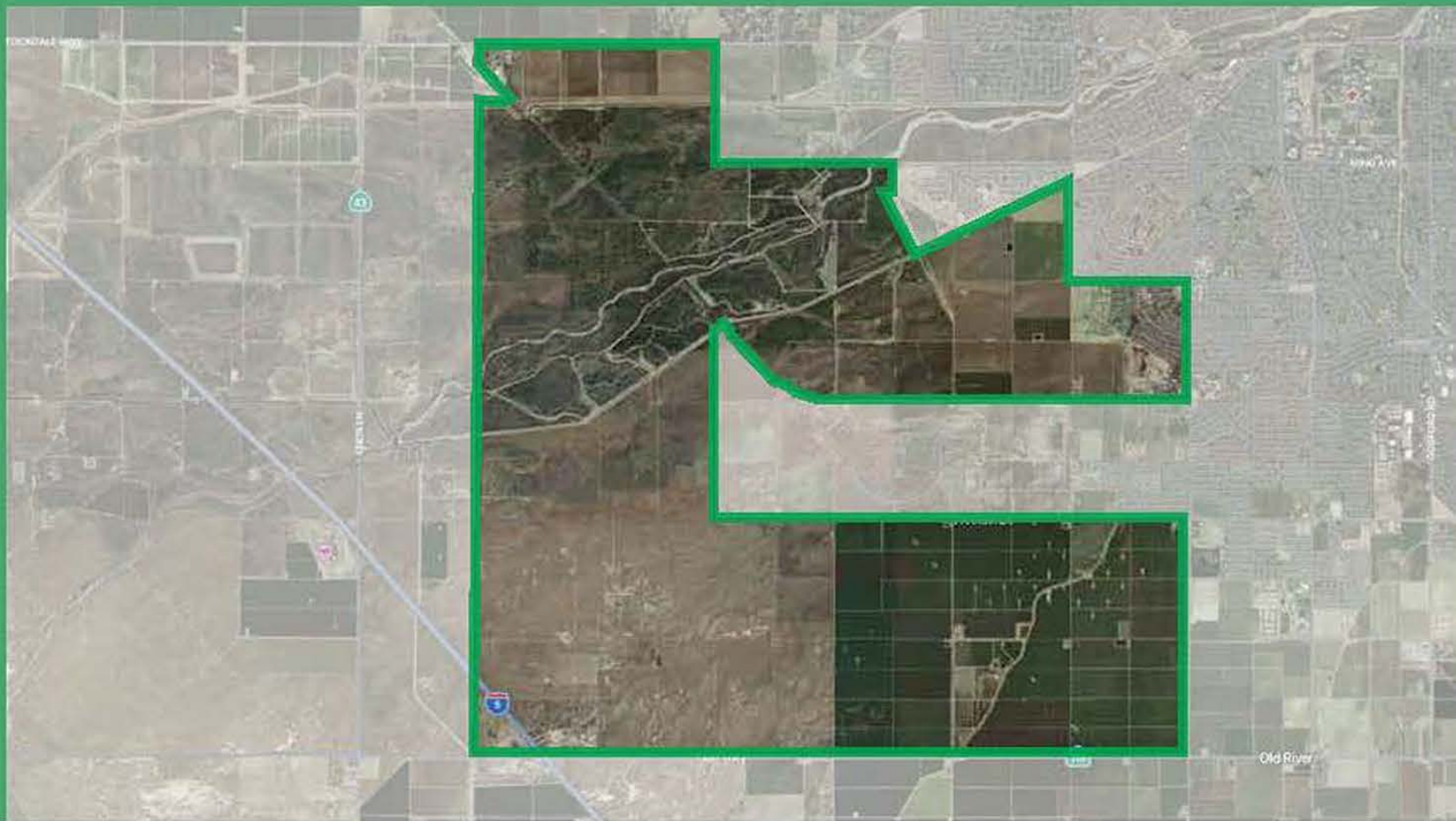


NET ZERO CARBON INDUSTRIAL PARK

10 SECTION

AVAILABLE INDUSTRIAL SITES

- 1920 Acre Green Energy & Industrial Park
- Carbon Sequestration & Sustainable Materials
- 24 / 7 Carbon Free Electricity & BTUs
- Light Duty and Heavy Duty EV Charging
- Light Duty and Heavy Duty Hydrogen Fueling
- De-Carbonize Your Manufacturing Today





POWERTAP
— HYDROGEN —

MAVERICKS

Xemplar Carbon
FOOD - WATER - ENERGY

NET ZERO BEYOND

CONTROLLED ENVIRONMENTAL AGRICULTURE

NET ZERO BEYOND CONTROLLED ENVIRONMENTAL AGRICULTURE

Vertical Farms (CEA)—On Site Crop Production

Total Available Market—Combined Markets \$295B+

Food Processing—On Site Food Processing

Large On-Site Demand—Daily & Seasonal

Resilient—Always On

Large Fleet & Shipping—EV Fleet Charging

Excess Capacity Available Grid—Carbon Footprint,
Fleet & ESG Tracking



MAVERICKS
MICROGRIDS





restoration
BIOPRODUCTS



MARKET INSIGHT

**\$1 Billion**

Market size in 2021

**12.6%** CAGR
During Forecast Period

SEGMENTATION ANALYSIS

Biochar Market Share Analysis, By Application



- Agriculture
- Animal Farming
- Electricity Generation
- Other Applications

TOP KEY COMPANIES

Source: Introspective Market Research

The global Biochar Market size was valued at USD 1 billion in 2021 and is projected to reach USD 2.29 billion by 2028, growing at a CAGR of 12.6% from 2022 to 2028. the analysis period 2023–2030



Carbon
optimum

Powering Tomorrow Together

Unique Solution

Decarbonizing Concrete and Cement. We developed the below solution to permanently capture, neutralize, and reverse the cumulative level of CO₂ in the earth's atmosphere emitted through cement factories. Our process of accelerated conversion and **valorization** of CO₂ yields microalgae biomass from which high value products and biocrude oil are made to be sold into multiple markets and industries.



Capture

Capture CO₂ and particle pollution before emission into the atmosphere.



Recycle

Recycle gases, liquids, and solid wastes, then process and permanently neutralize CO₂.



Accelerate

Accelerate the natural CO₂ conversion process through microalgae to produce biomass.



Convert

Convert CO₂ into high value-added products that benefit the community in multiple industries.



Produce

Produce decarbonated crude oil as fuel for future generations.

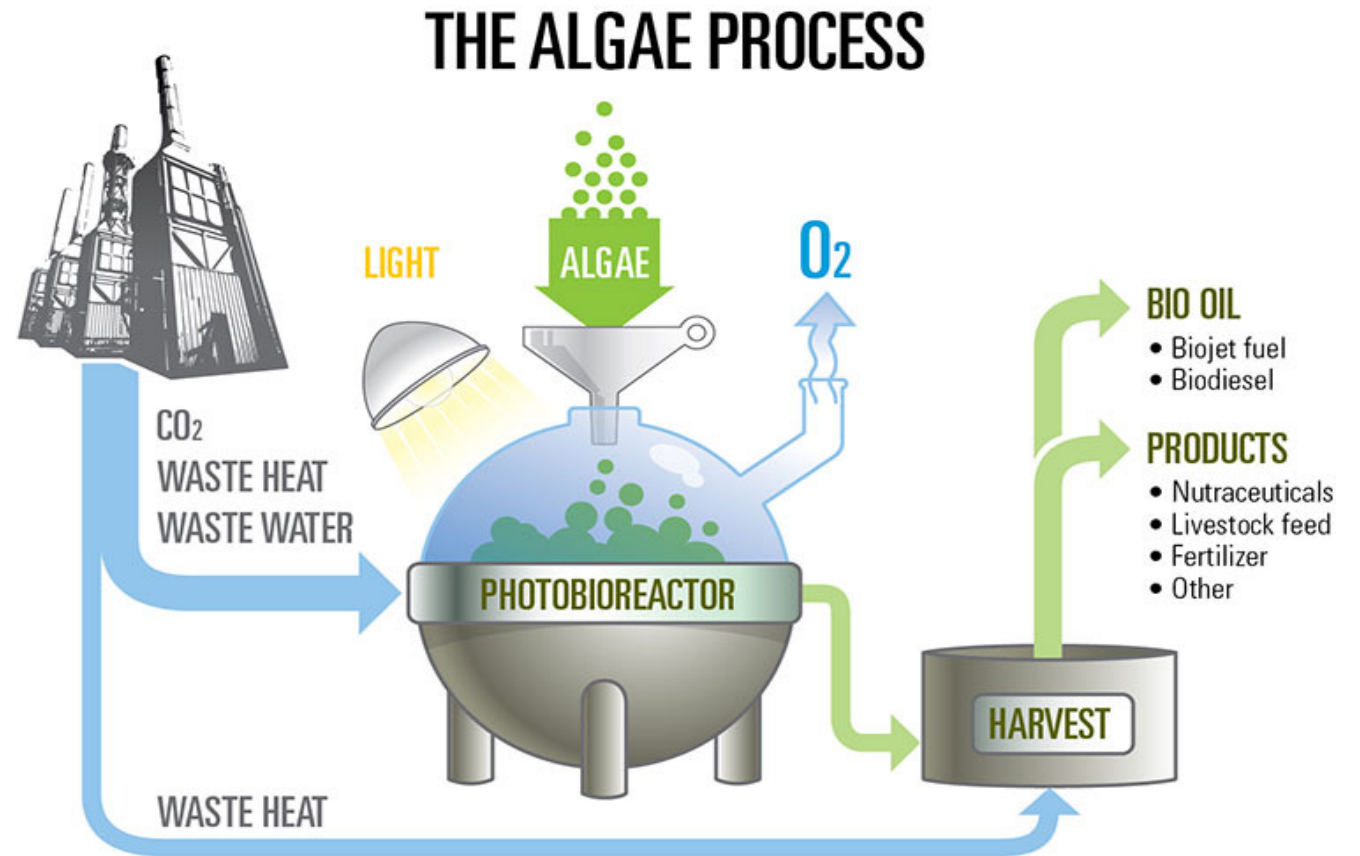
➤ **Microalgae** are one of the first organisms to naturally **close the loop with CO₂** and utilize photosynthetic behavior.

➤ Photoautotrophic microorganisms and are part of the building blocks of life and **are the most important source of natural bio actives on the planet.**

Our Process

To produce 1 million tons of biomass, Carbon Optimum Corporation's technology **neutralizes 1.8 million tons of CO₂**.

- We transport and process CO₂, flue gas emissions, waste heat, and wastewater from a **Strategic Partner site**.
- Our Photobioreactors (PBRs) **cultivate microorganisms in a closed and controlled automated environment** with the use of artificial light, water, the addition of CO₂, and a small amount of nutrients.
- By means of filtration and centrifugation, we convert, neutralize, and extract the biomass from the PBRs to manufacture the high-value products or biofuel.
- Clean O₂ is released and any remaining materials are recycled back into the algae process, preventing additional environmental waste.



Our Process

Produce



Harvest & Extraction of intracellular components



Centrifugation, Biomass & Products

Intertek

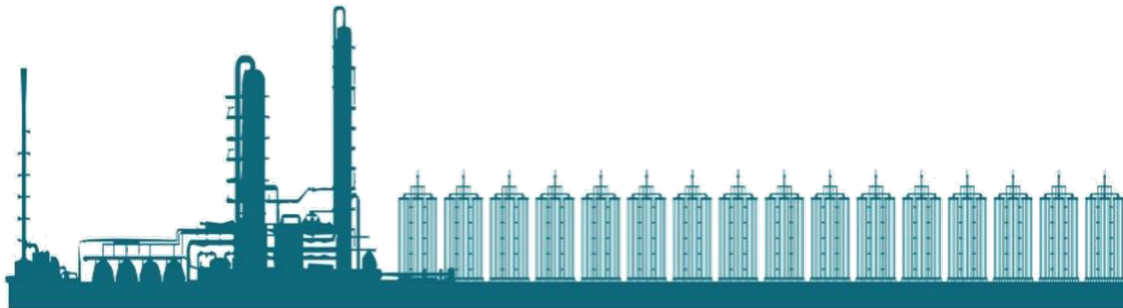


Certified Biomass

Intertek

Valued Quality. Delivered.

Our Scalable Technology



Photobioreactors: To scale up the process from a small number of units to thousands...

It's important to point out:

- No fresh water / Recycling of wastewater
- No arable land / Small ground surface

Our Products



COC Green Nutritive

- High content of Omega-3 fatty acids
- High protein content
- Source of vitamins and antioxidants
- Source of pigments



COC Green Omega

- Cardiovascular protection
- To control the mechanisms of development of atherosclerosis
- Helps control cholesterol levels
- Anti-inflammatory effect



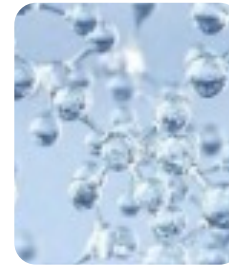
COC Green Cosmetic

- High PUFA content (polyunsaturated fats), maintaining good hydrated skin
- Vitamin E, preventing light-induced skin pathologies
- Phenolic compounds, for skin protection



COC Green Carotenoids

- Antioxidant properties
- Immune system stimulatory affect the preference for natural nutritional products
- Entirely derived to meet enormous growing demand worldwide



COC Green Biotech

- Flow cytometry
- Food colorants
- Immunoassay and detection of reactive oxygen species
- DNA microarrays



COC Green Crude Oil

- Viable and highly scalable alternative to conventional crude oil, same prices
- Neutralizes more CO₂ than it emits
- Equivalent physical and chemical properties to oil (for refining into diesel, gasoline, kerosene and other oil-equivalent based products)

Who We Partner With



Coal Fired Power
Plant Operators



Steel Factories



Cement Factories



Gas Fired Power
Plant Operators



Oil Companies &
Refineries



Industrial Groups



Transport
Companies

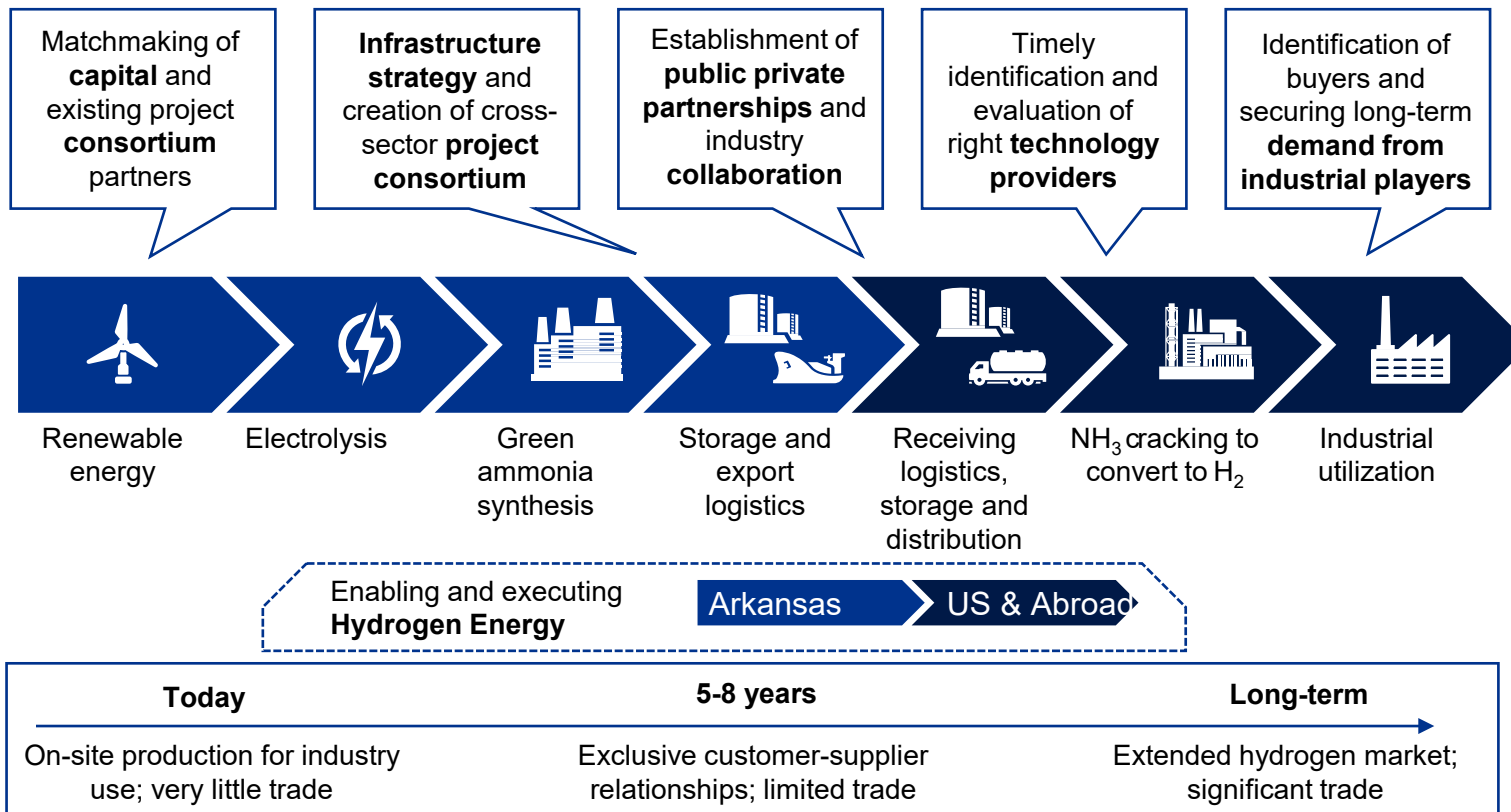


Waste Incineration
Plants

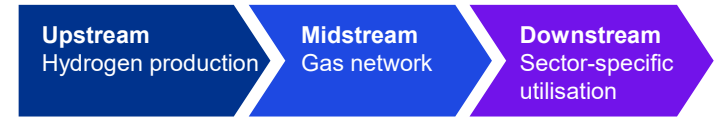


Leveraging Green H₂ opportunity for: Arkansas

KPMG can help to build up a new global value chain from scratch, which requires extensive ecosystem creation in USA and abroad



KPMG's global hydrogen expertise spans across the H₂ value chain

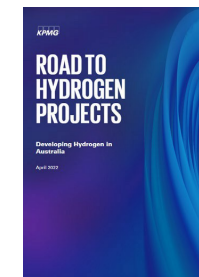


KPMG's Global Hydrogen Network

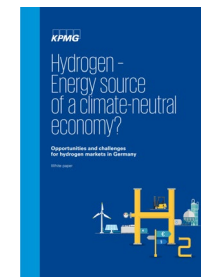


35 Member Countries

Selected Thought Leadership



Road to Hydrogen Projects
2022



Hydrogen - Energy source of a climate-neutral economy?
2022



How to evaluate the cost of the green hydrogen business case?
2022

Governmental Advisement Value

(Arkansas DOE framework-planning-policy roadmap)

KPMG supports development institutions in their pursuit of operational efficiency and delivering Soioeconomic Impact

KPMG International member firms are proud to serve many of the world's leading development organizations.

We provide cross-functional, multi-sectoral support to these clients, combining our understanding of international development with the wide-ranging needs of international development actors.

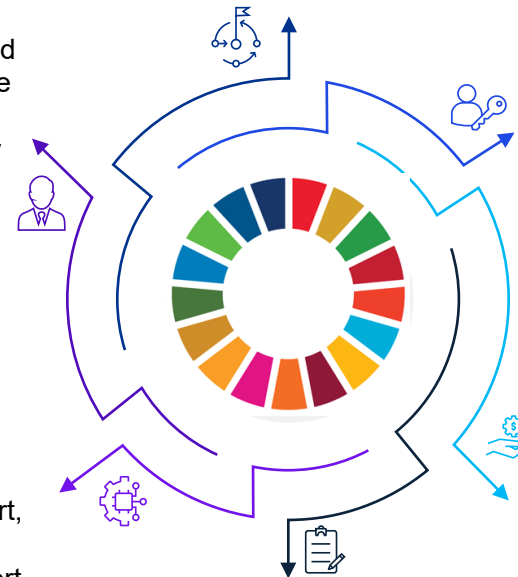
KPMG brings industry and thematic insights, global reach, scale, and a multidisciplinary range of services to international development clients, and the governments they serve including:

- IRA Funding
- 45Q
- Audit & Governance
- Financing

Strategy & corporate initiatives
 Strategy design and implementation support covering organizational structure, key performance indicators, market analyses, governance arrangement and fit with global multilateral architecture.

Human resources
 Work force gap assessment and planning, human capital change management, compensation systems design, global mobility advisory services.

Information technology solutions
 End to end CIO services: gap analysis, digital strategy support, systems design, technology selection and integration support.



Finance, accounting, risk, asset management, and treasury
 Comprehensive analytical and operational support to help ensure procedures, systems and people align to international best practices and standards.

Planning, performance and budget
 Integrated business planning services including design of budget processes and scenario modelling .

Internal audit, Integrity, investigations and forensics
 Due diligence services, fraud assessments, cyber crime issues and investigations support.

KPMG related portfolio of services

HEALTH AND HUMAN SERVICES

We are committed to providing long-term support to our clients as they tackle challenges & transform the way healthcare is delivered around the globe.



YOUTH, MSMEs AND ENTREPRENEURSHIP

We work closely with youth-focused programmes to develop youth and young adults' talents and entrepreneurial skills. Through KPMG Enterprise, we provide a single point of contact helping SMEs navigate challenges no matter the size and stage of business.



TRADE AND INVESTMENT

We work with Governments and the private sector to identify cost-saving opportunities within Africa and manage compliance risks associated with supply chains and global and regional trade operations.



GOVERNANCE AND PUBLIC FINANCIAL MANAGEMENT

We focus on optimisation, innovation and governance for public clients, and we work with all aspects of financial management in the public sector.



RENEWABLE ENERGY, CLIMATE CHANGE AND THE ENVIRONMENT

We drive business models, products and services that address climate change and help clients reduce carbon emissions.



AGRIBUSINESS

We support innovations that contribute to inclusive agribusiness development and increase productivity and incomes for smallholder farmers, contributing to reduced hunger and poverty in Africa.



SOCIAL DEVELOPMENT AND INCLUSION

We work to help empower communities and allow economies to prosper, within education, water and sanitation and gender and social inclusion.



INCLUSIVE AND INNOVATIVE FINANCE

We seek to bridge the gap between the private sector and development partners to catalyze investment in areas critical to achieving the SDGs. We also work to equip under-served communities with access to finance.



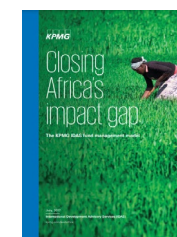
KPMG's has a unique approach to development work and our services are tailored to deliver solutions to the challenges facing our clients' sectoral and thematic priorities. We collaborate with associate technical experts to broaden our experience and skillsets, provide quality deliverables and insights, and ultimately value for money to our partners.

Selected Thought Leadership



Private Sector Grants

2017



2017

Tangible socioeconomic impact and co-benefits

Stakeholder capitalism



The Sustainable Development Goals



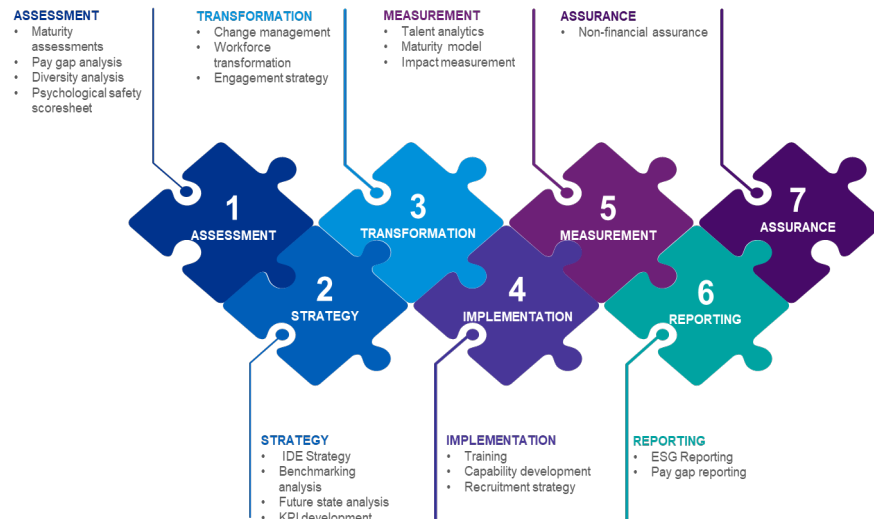
Case Studies



Technical support in establishing a Social Support Foundation Fund

A regional MDB sought to better define its business model and strategic plan for the implementation of a **Social Support Foundation Fund**. KPMG conducted a detailed analysis of the business plan and supported the development of strategy, roadmap and action plan, complemented by a financial and resource mobilization strategy.

A socioeconomic framework



Critical Success Factors

Communities surrounding projects should:

- Develop
- Own
- Understand
- Participate
- Advocate

“DOUPA”



Fund management

KPMG provides fund management non-profit institution supporting early and growth-stage businesses to innovate, create **jobs**, and leverage investments and markets to create **resilience** and sustainable incomes for rural poor and marginalized communities. Key foci on the agribusiness and renewable energy sectors, with increased support to climate technologies such as off-grid solar power, and micro-grids to benefit the rural poor.














Gender, human rights and social safeguards assessments for African environment project

KPMG was engaged by an international organization focused on the environment to provide **social, gender and human right** safeguards impact assessment and the development of management plans

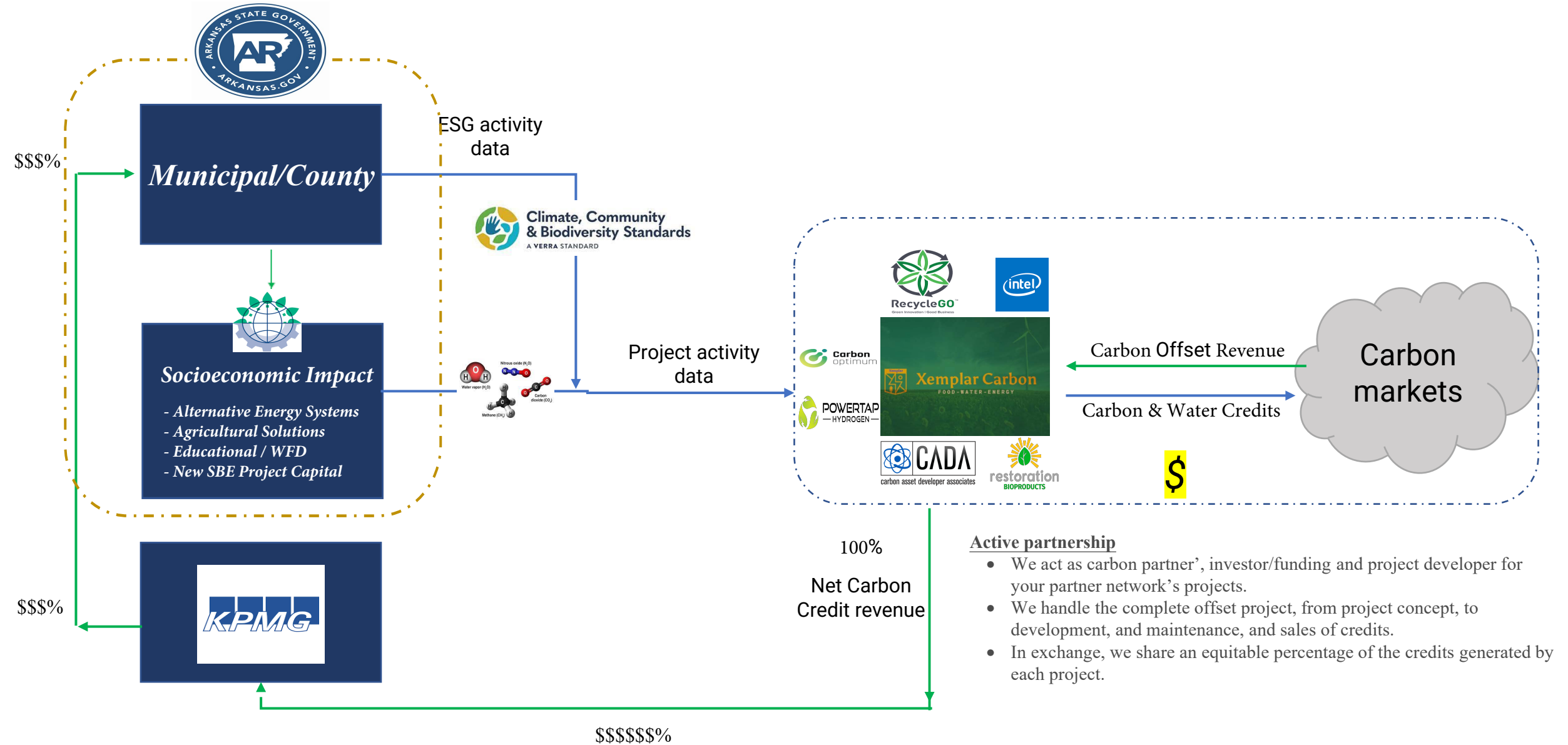
Attractive current market fundamentals

Xemplar Carbon is actively pursuing opportunities in both the voluntary and compliance markets

	Voluntary carbon markets	Compliance carbon markets
DESCRIPTION	Greenhouse gas (“GHG”) emissions reduced by buying voluntary offset credits verified by registries	Established by governments and regulators to reduce GHG emissions; premium pricing is expected
BUYERS	Corporations with emissions or net zero pledges that require carbon credits to offset emissions they cannot currently abate	Large emitters are allocated an annual quota, and anything beyond that quota requires allowances / credits to be purchased
TOTAL ADDRESSABLE MARKET	~US\$1bn current → ~US\$50bn 2030	~US\$900bn current
PROGRAM AUTHORITIES	   	      
		Active conversations with governments and standard agencies regarding compliance market eligibility for technology credits



AE&EI Project Carbon Credit Flow Model





United States Business Council
for Sustainable Development



Xemplar Carbon

FOOD - WATER - ENERGY

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