PROJECT PROPOSAL FOR THE PHILIPPINES GREEN AMONIA UREA FERTILIZER MANUFACTURING PLANT Proponent: REDSTSAR ENERGIME GREEN GROUP - REDSUN Technologies



Presentor: Dr. Jay Avrahm Dubinsky CEO/President REDSTAR-EGG Chief Scientist

GGG Algae -To Hydrogen Systems 18 tons H2/day ∼ Sargassum/Red Tide or Lab Algae



In steam gasification of algal biomass, the use of catalysts enhanced both tar degradation and hydrogen production via water-shift reaction. In catalytic gasification, tar removal efficiency varied from 80 to 100%. + catalytic activity of catalysts was in the order Fe2O3–CeO2 > RM > ARM in terms of H2 production. The hydrogen vield of seaweeds~0.8L to 1.36 L per gm bone dry

Telental The



This is higher than that of microalgae. Different amounts of inorganics between seaweeds and microalgae resulted in the different gas yields. The results obtained in this study could indicate that steam gasification of algae for hydrogen production is promising.

er Fe2O3–CeO2 > RM RM in terms of H2 duction. The hydrogen d of seaweeds~0.8L to 6 L per gm bone dry d tides can be filte???ti?coll&ctteti?thickened/dried and Pyrolyzed to H2 Safely removing them.

EGG Algae to H2 Systems Removing Red Tide Algae

Heatwave fuels massive algae bloom in Baltic Sea

> Ytansamling Surface Bloom

Risk för ytansamling Subsurface Bloom Blue-green algae near Landsort on 27 July 2008



EGG Proprietary Regenerative Catalysts turn Seaweed and algae into H2 (18t/day)



Filtering the Water- Proprietary

EGG Puri-Stat - turns algae into bricks easily!

2. PURI-STAT to thicken into bricks for drying Filtering-Thickenin Clarification-Addendum Additions-

3.5 MM gallons/day 98% energy efficienc works by gravity-Works in combination

www.originclear.com





Single Element Flow Pattern



Internal Flow Pattern

3) Algae Bricks are dried in sun and final drying in RED SUN 1000°C kilns & Ovens





Nanospike electrodes offer cheap, clean route to ammonia



Secret of dinitrogen triple bond's strength unpicked



Biological fuel cell could power cleaner ammonia production

Despite its global impact, the fundamentals of the Haber–Bosch process have hardly changed at all. It still relies on high pressures of 150 to 350 atmospheres, temperatures between 350°C and 550°C, and (usually) an iron catalyst with a dash of potassium oxide on an alumina support.

By the turn of the 20th century, the world's imperial powers were utterly dependent on regular shipments of sodium nitrate from mineral deposits in Chile. As a fertilizer, nitrate helped to feed their growing empires. And as a precursor to nitric acid, it helped to arm their soldiers with the latest explosives, such as trinitrotoluene (TNT). Breaking that dependency was the chemical challenge of the age. The key was to transform mere atmospheric ballast into something more reactive



Despite decades of work to develop alternative ways to make ammonia, the Haber–Bosch process is here to stay. Mark Peplow discovers why the dinitrogen bond is so tough to break. intertwine like metallic tree roots, linking bulky high-pressure vessels that stretch 20m or more into the sky. Tons of hydrogen and nitrogen pulse through these throbbing arteries before uniting at scorching temperatures to make ammonia. You might catch a whiff of the pungent gas in the compressor house, but ammonia's eye-watering odor is otherwise absent – after all, leaks are dangerous and uneconomical. Covering an area the size of two soccer fields, the gleaming plant can easily produce 2000 tons of ammonia each day. Welcome to the modern day Haber–Bosch process.



Ammonia is a pungent gas that is widely used to make agricultural fertilizers. Green ammonia production is where the process of making ammonia is 100% renewable and carbon-free.

One way of making green ammonia is by using hydrogen from water electrolysis and nitrogen separated from the air. These are then fed into the Haber process (also known as Haber-Bosch), all powered by sustainable electricity. In the Haber process, hydrogen and nitrogen are reacted together at high temperatures and pressures to produce ammonia, NH3.

However, the process of making ammonia is currently not a "green" process. It is most commonly made from methane, water and air, using steam methane reforming (SMR) (to produce the hydrogen) and the Haber process. Approximately 90% of the carbon dioxide produced is from the SMR process. This process consumes a lot of energy and produces around 1.8% of global carbon dioxide emissions.



1) Vacuum-pumps dredge algae onto barge

EGG Algae~H2 System

1. lack of predators juvenile fish and other marine life whi<mark>ch usually</mark> consume these blooms which have happened. A very good article on trophic cascading and the link between over fishing, destructive fishing and Algae Blooms can be found here Trophic Cascading and Algae Blooms and you can also read this scientific study on overfishing and its link to Algae Blooms here Over Fishing Linked To Algae Blooms. Seagrass Destroyed b trawlers Dead Seagrass After Trawling.

2. Excessive nutrients in the water due to large amounts of decomposing Seagrass caused by illegal trawling in the Seagrass Algae Can Be Found Everywhere, especially in Polluted Water Bodies: Including Lake Laguna, Taal, Pasig River, Subic Bay and other major river and shores in the Philippines

Algae Can Be Found Everywhere, especially in Polluted Water Bodies: Including Lake Laguna & Subic Bay. EGG Algae To H2 is a turnkey off grid plant of 50 m2 that makes 250 kt Urea fertilizer and can be built on ship or top of mountain. It self-generates power + 30 MW excess electricity and up to 250kt/ year ice from waste heat in 3 in - 1 plant. All hydrogen is immediately converted to electricity and 250kt/year urea fertilizer and never stores hydrogen. The waste heat from 30 MW to 60 MW turbine generator or Cogen makes 250kt ice/year with onsite desalination, subsidizing plant to lower fertilizer prices. Plus option to charge Red Sun batteries for offsite generators or industrial processes and/or run 2nd pyrolysis and urea plant, or run ship propulsion, plus make additional desalinated water and ice.

Alternatively, Red Sun thermal batteries can be charged anywhere, including central or 2nd EGG Algae to Urea fertilizer plant, and then delivered to remote EGG Algae to Urea plant(s) for turnkey harvesting, processing and pyrolyzing algae to electricity, heat, and urea onboard with 110 MW Red Sun battery capacity running entire or partial plant off grid wirelessly. Microalgae, and lake or Subic Bay dredged debris collected and pumped onto onboard or land- based Puri- Stat thickener to remove water and thicken into cakes that are dried and belt pressed and dried processed bone dry pellets to be pyrolyzed.

Redstar Red Sun's Infrared solar dishes and troughs lower during cost and speed up processing by an order of magnitude at only 0.5 cent per kWh Red featuring high-tech Infrared 2400°C dishes and/or 1100°C infrared solar troughs to lower cost and dewatering process to greatly lower main cost of processing wet biomass into energy and green urea fertilizer, plus feature zero net emissions and external power source as 10% of syngas and bio oils extracted are used to run pyrolysis boilers. The Redstar plants also qualify for carbon Credits which are \$90 USD in the EU.

Furthermore runs on all biomass: blue-green, red algae, seaweed, sea lettuce, sewage sludge or any biomass sourced or dredged from polluted rivers and lakes (including e-coli and bacteria) and beaches; and transformed through brand new Redstar regrating pyrolysis.

catalyst and catalyzes Haber - Bosch ammonia synthesis with combined activated calcium RedStar cerium oxide (Ce2O3mineral metal complex) to synthesize green ammonia at \$190 USD per mt, and sold by RedStar at \$550/MT, or PHP1940 per 50 kg sack of anhydrous ammonia fertilizer Use Of Funds- EGG Algae to Urea 3 - in - 1 plant plus 10 Red Sun Batteries - 120 MWh capacity

18 ton per day plant Drying palletizing, kilns
Labor and ops.
Catalyst oven and ops.
Ice /desal plant 250kt/y

\$ 8.5 M USD 2 1 0.5 2

Total. \$14 Million

(Used) 31.5 MW GE Turbine genset \$5 M Haber-Bosch Ammonia plant 20 M

Total costs of three Plants \$39 M

Red Sun Battery Manufacturing

\$ 8 Million and 10 × 11 MW batteries = 1, 200 MWh total capacity per day. Each battery gives 120 MWh per charge, 6.5 tons, 6m3 each

TOTAL. \$47 Million USD

Green Products:

31.5 MW x 6000 hours/year = 189,000 MWh at \$50 per MWh. Green Electricity at \$100/MWh gives net gross of \$9.45 m/ year 250,000 tons green ammonia (grey or brown ammonia sells for \$700 per ton), so gross net would be \$550/ ton x 250,000 tons= \$13.5 m gross net profit green Urea per year. Red Sun Battery Business - Capex 10 million: Ice Profit = <u>6.7 Million USD</u>/ year net gross selling at \$250 USD/MT

Capex <u>**\$ 47 million**</u> with 1200 MWh capacity Red Sun batteries

Total income Total overhead	\$30.95 M 3 M
Taxes and insurance.	4.05 M
Net profit.	

ROI = \$23.9 M/ Capex \$47 M ~ 51% Return On Investment Urea Fertilizer sales \$550 /MT = PHP 30,800/MT PHP 1540 per 50 kg sack anhydrous ammonia







RED SUN Desalination Cost \$0.40 per Cubic Meter

EGG's solution is ann mobile desclinations 20 foot modulars that run by solar thermal with battery back-up to produce 3 MML/day

RED SUN Solar Thermal Water Solutions

Further important components are an adapted I&C system as well as a vacuum system.

Under low pressure conditions salt water boils already at low temperatures. Produced vapour condensed by an ingenious condensing system [5 – 10° C below evaporation temperature], which efficiently operates at small temperature differences. With a cascaded alignment of multiple stages, this system allows to recover heat from distillate for preheating salt water.

Brine

discharge





Heat source

Heat extraction

RED SUN Solar: Runs combined 20 ft Modular Forced **Evaporation Air Low**temperature Desal 3 MML/day





Huge price anhydrous anmonia 25% discount to PHP1540 per 50 kg sack. This is \$550 USD/MT vs \$700 current min wholesale price for anhydrous ammonia fertilizer.

Plus, selling half-priced ice to farmers, fishermen, ports and **8 new Refrigeration Plants planned by Dept. of Agriculture and H.E. Ferdinand Marcos Jr.** With the batteries we can deliver 1/2 priced refrigeration electricity and run giant air conditioners to maintain ice and refrigeration for produce and fish for export, which President Marcos Jr's new plan for import-export at 10 cents US per kWh, or PHP 5.60/kWh delivered to plants by Red Sun wirelessly; and also provide refrigerated transport services in later phases.

Of course, we start with biomass pyrolysis power at 7 cents US/ kWh because they can get permits now, and next year we work on MSRs to lower our elec and H2 cost further to 3 cents US per KWh.

~RED SUN Refrigeration ~RED SUN RAIL LINES ~Selling 350kt of ice/year ~Mindanao Train stations & Ports ~Refrigerated Facilities & Transport

I GLETAVA GIO

Luzon

MANILA – The Bureau of Fisheries and Aquatic Resources (BFAR) has banned the selling and eating of shellfish bought or harvested from some parts of the coastal waters in Visayas and Mindanao.

Mindanao

RED SUN Network Trains & Ships







Providing 60- to 100 MML/day Desal







- Artificial nitrogen fixation process that is the main industrial procedure for ammonia today. It is the most important industrial process ever developed, making ammonium fertilizer at 900 °C.
- The Haber Process is used in the manufacturing of ammonia from nitrogen and hydrogen.
- This process combines nitrogen from the air with hydrogen made from MSR hydrogen pyrolysis through MSR



Idealized Brayton cycle is a pure heat cycle invented 165 years before karosene & jet fuel



New approach to Turbines

ICE REFER RED SUN Renewable Energy

The RED SUN battery is the first mobile thermal battery modelled after the earth, that uses a molten nickel iron core at 1700 °C centigrade to run diesels and turbines better that Energy fuel with higher efficiency and lower noise and vibration and produces no carbon, soot or GHG. Furthermore, it is charged by induction like the sun charges the earth at 98% efficiency and can run power plants large and small, giving a whole new way to run ships, trains and transportation. It is scalable to large 500 MW TO 1000 MW powerplants and can last 40 years or more with millions of cycles. It has a 10 year warranty from Thyssenkrupp and is insured by Lloyds Syndicate.





RED SUN runs turbines with pure heat at 1100°C to 2200°C on Low pressure 1-2 Atmospheres

Turbines operate cleanly on RED SUN & last 50% longer!

Non-Combustion Brayton Cycle

Patented non combustion brayton cycle turbine runs on pure heat of the RED SUN Thermal battery. Zero emissions, zero carbon, zero greenhouse gases and 65% efficiency.













Sacred Geometry, & The Flow Design from Daried Winter Directly converting THE ULTIMATE NOZZLE STRUCTURE the original TO HEAL WATER?

What we need is a 60 degree cone shaped piece of metal perfect preferrably silver of copper or gold or some metal implosion... with no iron if possible...

Inside of a standard 2" pipe

This is a side view of 60 degree cone on one end grooved with the spirals depicted here from three views. The opposite side of the conic nozzel cone piece facing the oncoming high pressure water, should be an idealized hyperbolic cone similar to the lowest coefficient of drag water nosecone.

The metal pressure nozzle cone needs to fit tightly into the conic end of the 2 inch pipe so that the only path for water is down the grooved Golden Mean Spiral Cone.

Orifice hole to be approx double of cone grooves depth.

Water emerges here under pressure, have its hydrodynamic laminar spin coherence increased dramatically.

The scalar spin cascade optimizes translation of vorticity. Result causes increased spin density and cohere nee at laminar and molecular levels. Water will show diamatic and measureable increased seed germination rate, increased sedimentation segregation out of solids by mass for pollution treatment and increased boyancy (specific gravity). This is a much more powerful water treatment, taking the best of the principles of the proven flowform and enpowering them by permitting the idealized water interference transform to be put under the neccessary hydrodynamic pressure. This water will be biologically more healing for bathing etc. Not only once the principle is proven will this have planetary significance for water vivification (life means el turn into the eye c phi/recursion which is what this is), but it will then pave the way for accomplishing this idealized transform magnetically, for efficient transle tion of gravity to electromagnitism, weaning planets off fossil fuel to metabolizing starlight directly..

Only Wave Fractality Creates Gravity, Therefore... Only Love Bends the Light.

Anninia del agua IMPLODER



Neve Protocype TheEMPLODER. Being Assembled to Phase Conjugate Magnetic Array - Feb 2010 Design: Dan Winter Lab Assembly & Photo Courtesy Paul Harris Thankal





The extreme converging magnetic flux lines - create the centripetal inertia at liquid molecular level - which creates the spin cycle of the washing machine sorting by mass. Resulting in the increase molecular order and spin density.

Masters of Water Viktor Schauberger

(translation Valérie Sandelin)

Les Maitres de l'Eau Viktor Schauberger

1 of 2:

www.dailymotion.com/video/x2ex4e_lesmaitres-de-l-eau-viktor-schaube_music 2 of 2:

www.dailymotion.com/video/xf0psa_lesmaitres-de-l-eau-viktor-schaube_tech

We know it to be source of life although we still remain in awe to see her dance, and produce sounds and music. Anyone can succumb to her magic but few are those who know her intimate nature ..

In former times miracles were attributed to water. Water enjoyed great esteem in ancient cultures and religions. Today it has become merely a consumer product - and our knowledge on the subject is limited to the H2O formula, the myth of water has turned into a molecule.

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2sur2 : www.dailymotion.com/video/xf0psa_les-maitresde-l-eau-viktor-schaube_tech

On dit qu'elle est source de vie mais notre surprise n'en est pas moins grande locsqu'elle se met à danser, lorsqu'elle nous donne à voir des sons et de la musique. Tout le monde peut succomber à la magie de l'eau mais rares sont les bommes qui connaissent sa nature intime.

Autrefois l'eau faisait encore des miracles. Elle jouissait d'une très grande estime dans les cultures et les religions ancestrales. Aujourd'hui elle est devenue un produit de consommation courante - et nos connaissances sur le sajet se limitent à la formule H20 ; le mythe de l'eau s'est transformé en molécule.

Alexander Lasterwasser vit au bord du lac de Constance. C'est avec une précision extrême qu'il remplit sa coupelle, une coupelle dont la fonction n'est pas sans rappeler le haut parleur. Grâce à un transducteur acoustique, les sons sont directement répercutés sur la surface de l'eau. Chaque goutte d'eau en trop fausserait le résultat. Juste au dessus de la coupelle, Alexander Lasterwasser a finé une caméra vidéo qui lui permet de filmer le comportement de Teau dans ses moindres détails. Lasterwasser réalise des expériences avec tout son spectre de son générateur de fréquences.

Fractal Field Implosion Science Technologies



Technology Description:

The "Implique" water treatment device produces a measurable and validated effect on plant growth, seed germination success, and biomass yields. It revitables water quickly and is easy to install. It is unique technology that combines a magnetic array with a directional neczle. The Implique device facilitates the bringing of required nutrients into plants by causing a de-clustering effect on water.

Testing and validation:

The 'absorption efficiency effect' and redox potential has produced independently validated measurements of approximately 328% plant growth increase along with biomass density. Current testing involves several growers from various locations using a variety of seeds.

Used for:

It is used for successful and increased seed germination and accelerated plant prowth for hydroponics, greenhouses and all crops from agricultural operations. Related industries are swimming pools, ice skating, snow production, food and health technology (anti-aging effects), brewery, wineries, blomass ethanol production (quicker more efficient fermentation) and public landscape gardens.

It can also be used in the home for drinking water treatment (to re-energize, not filter).

For a modest investment, farmers and growers can greatly improve their bottom line (stronger, better, more crops). It is easy to install, operate and maintain. No moving parts, minimal wear and tear. No 'parts' to be replaced or dispose of. Sustainable and environmentally friendly. It reduces water and energy consumption, hence saving money.

Benefits:

- Revitalized water can be achieved quickly and easily
- Less amount of water is required for plant growth.
- Cost effective
- Uses established infrastructure
- Successful and increased seed germination
- Accelerate Plant Orowth for hydroponics, greenhouse and agriculture operations
- Increased sedimentation rate effects used for sewage treatment and waste managment.
- Applications for home use to re-energize unhealthy water
- Increased agriculture yields for all crops, including third world nations
- Related technology of Phase Conjugate Dielectrics being develoed is used for SEED STORAGE optimization



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