



WPPENERGY
World Power Production



W2H2 OVERVIEW PRESENTATION

100% Reduction in CO₂ & Methane

Replacing Fossil Fuel with Lower Cost Green Hydrogen

INTRODUCTION TO WPP ENERGY

WPP ENERGY is a Swiss Company that over the last 11 years has established itself as a repository for disruptive energy and environmental technologies. WPP's products are presently sold in over 50 countries around the world through a network of 40+ authorized distributors.

Over the last 11 years WPP has formed close working alliances with world class companies such as GE, Baker Hughes, Siemens, Linde, AEG, Kremsmüller & E&M Combustion. WPP intends to utilize these relationships to assist in various projects.

The WPP team is well recognized around the globe as having extensive technical expertise in science and innovation, business success in mergers, acquisitions, joint ventures and licensing proprietary technologies.

The WPP team consists of some of the world's leading physicists and inventors in hydrogen based energy production and green hydrogen.

The company is at the forefront of breakthrough unconventional water electrolysis technologies to support a cost revolution in the green hydrogen economy and to provide industrial scale solutions.



WPP ENERGY TEAM



Rafael Ben Shaya

Chairman & CEO



Troy E. MacDonald

Chief Operating Officer
& Chief Innovation Officer



Robert Kohn

Chief Financial Advisor



Matteo Inaudi

Swiss Lawyer WPP BOD
Member



Bernhard Piwczyk

Chief Technologist



Dr. David J. Nagel

Chief Science Advisor



Adam Benchaya

Marketing Manager



Dr. Peter Hagelstein

Consulting Scientist



**Dr. Dimitar
Alexandrov**

Consulting Scientist



Dr. Noriah Bidin

Senior Research Scientist



**Dr. Siti Radhiana
Binti Azni**

Research Scientist



**Dr. Mundzir Bin
Abdullah**

Research Scientist



WPP ENERGY TEAM



**Mohamad Aizat Bin
Abu Bakar**

Research Scientist



**Wan Azman bin Wan
Abbas**

Ambassador, Malaysia



**Luis Caballero
Alcalde**

Advisor, Oem Products &
Strategic Partnerships



Iñigo Bejar Gonzalez

Advisor & Strategic
Partner, H2 Burners &
Manufacturing



Juergen Dieter Praest

Advisor & Strategic
Partner, H2 Burners &
Manufacturing



Abbey King Khawaja

President, UK Division



**JACQUELINE YOUNG
CPA, CGA**

Vice President



Felix Rodriguez

Director Of
Wte Solutions



João Jayme Iess

Director Of Chemical And
Process Engineering



Michael John De Vera

Senior Director Of
Business Developmen



Dionisio Ang

Project
Coordinator



Engr. Eugene Bicar

Market Advisor,
Philippines



WPP ENERGY TEAM



Serhii Derchuk

Director Of Business
Development



Lucio De Moura Netto

Senior Vice President,
Brazil



Edison Viriato

Senior Vice President,
Brazil



Kenny Tran

National Ambassador,
Vietnam



Jodie Jacobson

Regional Director Australia



Sergei S. Sidorov

SVP, PPE Business Unit



Thomas Perez

Business Development
Executive



Mentor Shala

Front-End Director,
3D Artist, UI/UX Designer

WPP PARTNERS

Baker Hughes 

SIEMENS
Ingenuity for life



Linde

solum



Morgan Stanley



China International Development
and Investment Corporation Limited

GDTG
L'ÉCONOMIE VERTE



AEG
INDUSTRIAL ENGINEERING

PURE AQUA, INC.

pottergates
CONSULTANTS WITH A DIFFERENCE

United Skills of **KREMSMUELLER** 



MILLENNIUM FINANCIAL EXCHANGE



APPLETON AFRICA
Investment Capital Company LTD



AKA
HOLDING



ILAYDA
Reliable Trading Partner



CASPEX
ASSET MANAGEMENT

CASP
FINANCIAL & INVESTMENTS



WPP PARTNERS



W2H2 TECHNOLOGY INTRODUCTION

W2H2 is a solution to convert polluting power producers currently using fossil fuel into efficient low cost green energy producers using water as the feedstock to generate onsite large scale hydrogen production which then replaces fossil fuel to operate the power plant with no CO₂ or Methane and at a much lower cost.

The W2H2 solution will help facilities which are shut down or about to be shut down because most commonly of environmental regulations no longer allowing fossil fuels to be used as the fuel source for generating electricity.

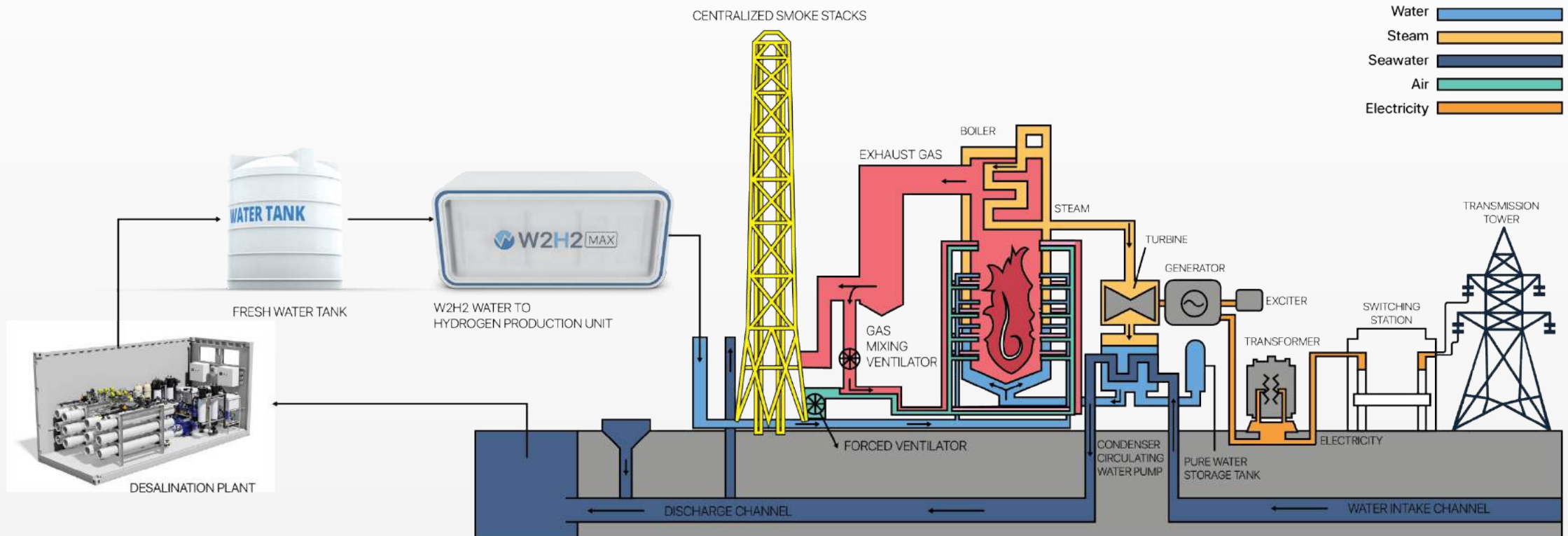
Aside from dramatically lower the cost of hydrogen based energy to less than \$0.02 per kWh, using the W2H2 solution no significant of hydrogen is required since H₂ production is done in real time according to actual power production requirements. Eliminating storage addresses one of the greatest challenges in using hydrogen gas as a renewable fuel source, avoiding a storage model is also much safer.

With W2H2 onsite hydrogen production technology no transportation of hydrogen or no underlying supply chain tied into the costs associated transportation by truck, rail or boat. This increases safety and decreases operating costs.

W2H2 technology, not only promises lower cost of energy, but also a complete elimination of CO₂ and Methane.



W2H2 OPERATING SCENARIO SCHEMATIC



- NO NEED FOR FUEL SUPPLY CONTRACTS AND NO NEED FOR FUEL TRANSPORT
- HYDROGEN FUEL PRODUCTION AND ELECTRICITY PRODUCTION ARE LOCATED IN THE SAME AREA
- HYDROGEN FUEL PRODUCED IN-HOUSE AND NOT INFLUENCED BY MARKET FORCES

ADVANTAGES OF THE W2H2 POWER GENERATION SYSTEM

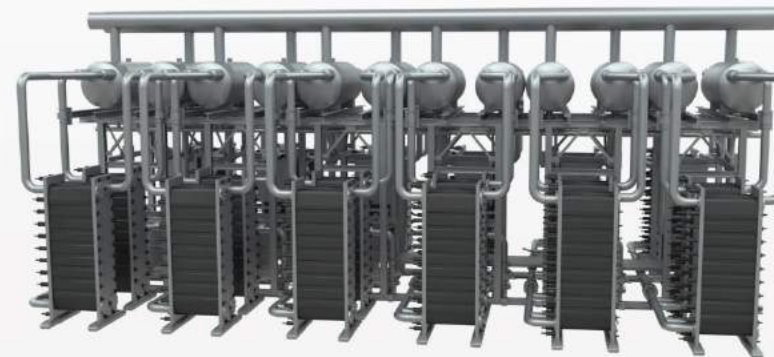
- UP TO 70% REDUCTION IN FUEL COSTS
- ZERO CO₂ & ZERO METHANE EMISSIONS
- CARBON CREDITS
- H₂ POSSESSES 3-5X THE CALORIFIC VALUE OF FOSSIL FUEL
- ELIMINATES FOSSIL FUEL STORAGE COSTS
- ELIMINATES FUEL TRANSPORTATION COSTS
- HIGH RELIABILITY AND LONGER LIFE EXPECTANCY
- SEA CONTAINER DESIGN ENSURES LOWER SITE SET-UP COSTS
- EASE OF OPERATION
- LONGER INTERVALS BETWEEN MAINTENANCE CYCLES AND OVERHAULS
- 24/7 CONTINUOUS, RELIABLE FUEL SUPPLY AND POWER

THE INNOVATION OF WATER SPLITTING THROUGH USE OF MAGNETIC AND OPTICAL FIELDS

W2H2 is based on an advanced proprietary scientific method developed over 12 years of research by a team of world class physicists which are at the heart of the W2H2 solution. The method includes the invention of using an unconventional multi step process of producing Hydrogen Gas from water at much lower cost than competing technologies (i.e. conventional Electrolysis which uses 44 to 55 kWh of electricity per 1kg of H₂ production).

WPP Energy, has pioneered a new method of magnetic and light enhanced electrolysis that using the same amount of electrical energy input, produces more than 9 times as much hydrogen than conventional electrolysis methods do. Consequently a portion (estimated at 25-30%) of the hydrogen generated can be used to drive the process itself and the major portion (70-75%) then can be applied to generate power for other purposes.

The new enhanced electrolysis process includes a weakening of the oxygen-hydrogen bond of the water molecule. An electric and a magnetic field are established before the bond is broken. The magnetic field is generated using a permanent magnet and thus requires no additional energy. The electric field is generated by a laser operating at 532nm wavelength that requires relatively little input power.



The liberated energy from the process is greater than the energy that was used to break the weakened bond. This energy gain phenomenon may best be theoretically explainable by the same or similar process as observed in low energy nuclear reactions (LENR).

The W2H2 method can be implemented as a retrofit solution to replace existing conventional electrolyser methods in well established electrolysis products on the market such as the Siemens Silyzer.

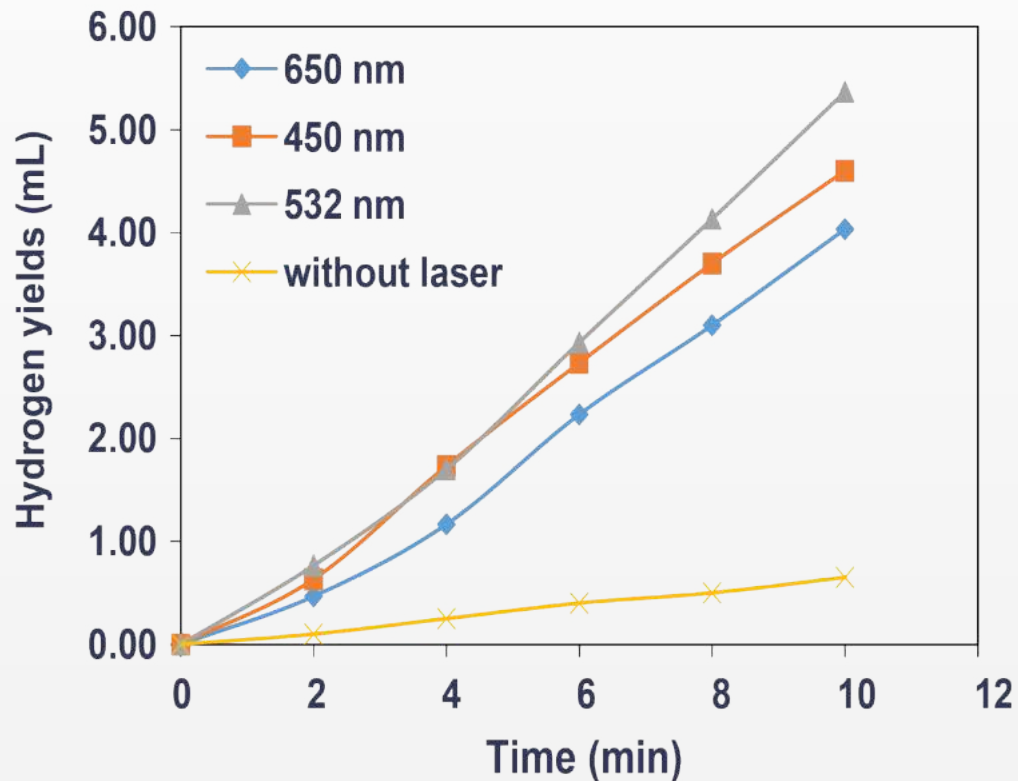


Fig. 1 e Hydrogen yields with respect to time at different optical light sources.

Key members of our team published research in 2017 which demonstrated a 915% improvement in H_2 production volumes over conventional electrolysis using the same amount of energy. It is this research which is the foundation W2H2 Technology.

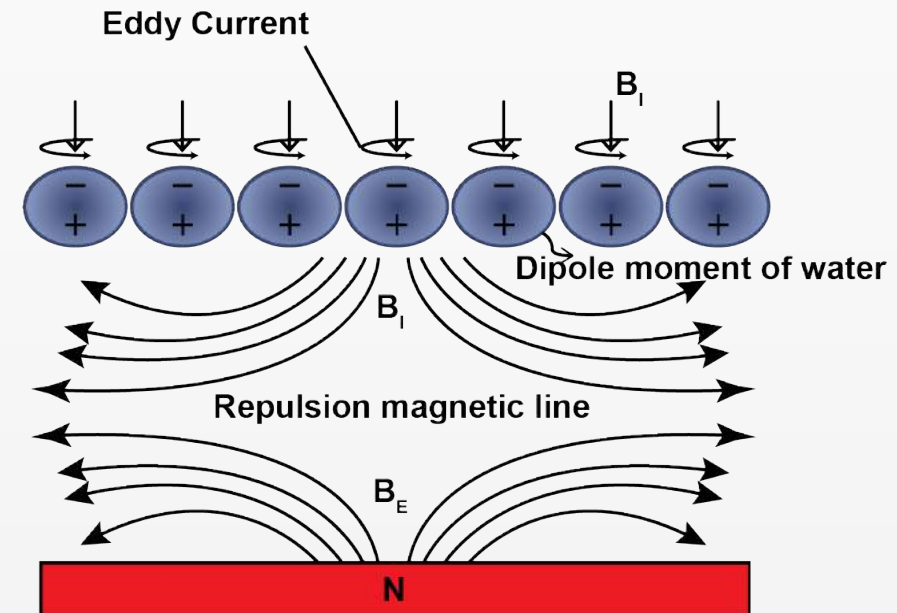


Fig. 2 e Diamagnetic properties of water, the internal magnetic field B_I is repelled the external magnetic field B_E . Lorentz force acts on electron that cause to rotate and form eddy current. Thus induced magnetic field that is opposite to the external magnetic field.

A SOLUTION FOR POLLUTION AND GREENHOUSE GASES

Power Generation with zero CO₂ and zero Methane emissions.

W2H2 is a no carbon emissions technology designed to shift existing and future industrial power production away from fossil fuels and therefore reduce the world's harmful emissions, currently approximately 25% of the world's harmful emissions are caused by Industrial Power Production.

The availability of W2H2 technology will dramatically lower the cost of energy, increase security and ultimately reverse global warming since carbon neutrality can be achieved. The dependence on oil producing countries will be eliminated.

A 210MW Natural Gas Fired Boiler (operating at full load) if converted to Zero Carbon Emissions W2H2 Technology would see an estimated 333,300 metric tonnes of CO₂ per year eliminated and a Coal-Fired Boiler a reduction over 650,000 tonnes annually.

In addition the many environmental problems associated with the mining of and transportation of coal are avoided and similarly all of the problems and leakage associated with natural gas drilling, fracking and transportation are avoided.



W2H2, TRUE SUSTAINABLE RENEWABLE ENERGY

The environmental friendly water vapor emissions coming from the W2H2 power plant goes to the Earth's atmosphere where it undergoes the various steps of the Earth's Water Cycle enabling them to eventually, in various amounts, replenish the water resources in the land and the abundant water resources in the sea in the form of rain and this process will be repetitive during the course of the power plant's operation.



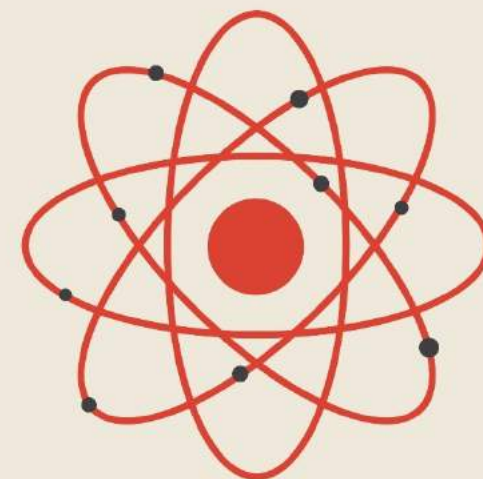
CLASSIFICATION OF HYDROGEN

By definition, Renewable Energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves and geothermal heat.

W2H2 is sustainable since our water feed for W2H2 Conversion unit comes from the ocean which is an inexhaustible resource.

Currently approximately 5% of the world's hydrogen production is considered green. W2H2 is a green method of Hydrogen Production and not dependent in any way on fossil fuel.

Not all Hydrogen production methods have the same environmental benefits which is where W2H2 technology shines. While Hydrogen that does not emit CO₂ upon combustion the source of the hydrogen must be considered when assessing its impacts on carbon emissions in power generation applications. Hydrogen production can be classified according to its carbon footprint:



CLASSIFICATION OF HYDROGEN

GREEN HYDROGEN

Hydrogen production with zero associated CO₂ emissions, such as [W2H2](#) advanced water electrolysis using electricity from 100% renewable sources (It's own power generation for example). Emerging technologies may also be classified as green if there are no CO₂ emissions associated with the electricity required for the process.

BLUE HYDROGEN

CO₂ capture systems are fitted to the hydrogen production a technology and the CO₂ sequestered in underground aquifers, depleted oil and gas fields, or used in industry (ex: Food & Beverage) to produce higher value products.
CO₂ capture is not 100% efficient, so some CO₂ will always be released to the atmosphere.

BLACK/GREY/ BROWN HYDROGEN

CO₂ is produced during the hydrogen production process and released to atmosphere. To date, more than 90% of the worldwide hydrogen is supplied via this route. However, in combination with power generation the associated CO₂ emissions with generating hydrogen this way is equal to or greater than the avoided emissions from burning natural gas in a gas turbine.

ARE THERE ANY EMISSIONS WITH W2H2?

Hydrogen allows us to eliminate the emission of CO₂ and Methane.

When hydrogen is burned nitrogen oxides (NO_x) is emitted and the W2H2 solution comes with a NO_x control system to keep levels below environmental regulations level. The reason for the higher formation of nitrogen oxides comes from the higher flame temperature of hydrogen. The adiabatic flame temperature of hydrogen is about 170 °C higher than that of natural gas.

The W2H2 NO_x solution is based mostly on a recirculation of gases to decrease the temperature of the flame, and the consequent decrease in thermal NO_x. This recirculation of gases can be internal or external.

By re-circulating approximately 15-20% of the total gases emitted by the generator, we can reduce emissions even below 100 mg / Nm³, less than those of natural gas.

By applying this gas recirculation technology, we are also able to reduce the flame temperature, and consequently, reduce the heat transmitted by the flame by radiation.

The recirculation of gases will allow us to obtain more friendly flame temperatures for the equipment and also guarantee a higher lifetime without having to reduce their thermal power.



W2H2 STRONG VALUE PROPOSITION (DATA PROVIDED IS PER 210MW LINE)

Cost of 100% H ₂ Fuel in US\$/kWh	0.0142
Estimated Cost of Natural Gas Fuel in US\$/kwh in the region	0.0400
Savings of W2H2 Compared to Natural Gas Price in %	64.4%
US\$ Cost Savings of 100% H ₂ over Natural Gas for Electricity sold per Year	29,045,833.32
US\$ Cost Savings of 100% H ₂ over Natural Gas for Electricity sold per 5 Year	145,229,165
US\$ Cost Savings of 100% H ₂ over Natural Gas for Electricity sold per 25 Year	726,145,825
Project CAPEX = 120m Euros (\$145m USD)	Investment recovery in 5 years* *Does not include the financial benefits of carbon credits of up to 333,000 tonnes per year per 210MW boiler
Return on 120m euros investment after 25 years	= CAPEX Covered + \$581,145,825 USD (481m Euros) saved on fuel costs. Additional benefits from carbon credits not included.
Approximately a 4x return on investment after 25 years	



WPPENERGY
World Power Production

W2H2 SAVINGS PER 210MW

64.4% LOWER COST THAN NATURAL GAS

481m Euros fuel profit over 25 years

To View Sample Financial Spreadsheet please click [here](#)



WPPENERGY
World Power Production

A SCIENTIFIC BREAKTHROUGH.

FOR MORE INFORMATION

Email Address: info@wppenergy.com

Website: www.wppenergy.com

INQUIRIES: +41 917 566 945