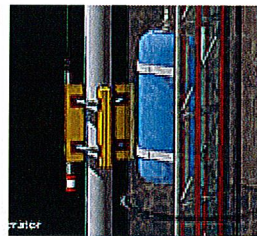
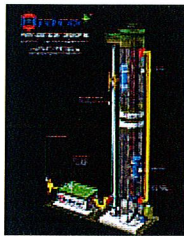


HIDRO+ TECHNOLOGY

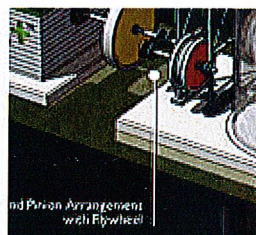
Hidro+™ is a Hydrodynamic Cycle Technology for energy generation based on Deep-Water Pressure Gradients and Buoyancy. These principles are collectively engineered in a system to cause a free-fall velocity of a large-weight to ascend and descend in a continuous cycle.

The Deep-Water Pressure is created through the use of a high water towers and the corresponding powercycle.

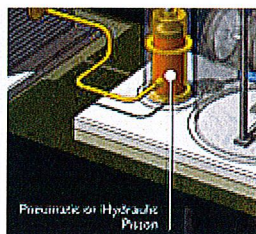
The potential energy provided by the descending weight is imparted onto various ways in order to generate electricity including:



As a Linear Electric Generator (“LEG”) by applying the weight of the Rotor/Translator to descend along a Stator-Bank.

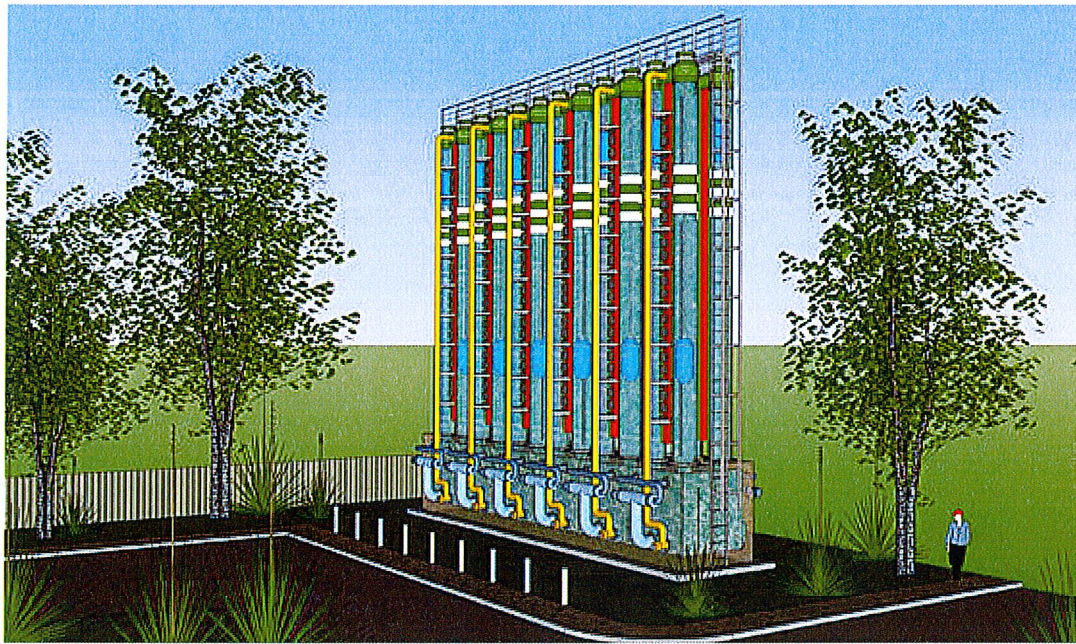


By Imparted onto a Rack and Pinion geared wheel arrangement to store the energy in flywheels to run an electric generator.



By imparted onto a pneumatic/hydraulic cylinders where high pressure medium is stored and later released onto turbo generator.

Or as a combination of Linear Electric Generator and Pneumatic/ Hydraulic cylinders. This is achieved by equipping the power system with a power stabilizer and a frequency converter, while the operational logic and control philosophy of the total system is PLC based for remote operation.



Hidro+ 1MW Module

Hidro+™ technology world patents protection: PCT-AU2007/906961; AU2008/902488; AU2008/001888; AUS-PATENT2008/338258. HidroLinear Patents are published by World Intellectual Property Organisation [WIPO-Geneva] Publication number WO2009/0876727.

The Patented "Reverse Thruster Pressure Equalizer Chamber (RETPEC) and its "operations" in HidroLinear-System is key to the technology commercial utilization.

Hidro+™ technology has wide applications including fixed large scale localized-land land based or mobile generator, in automobiles, land and sea transportation vehicles and vessels and many others.



™ World Patent Pending numbers: AU2007/906961 & PCTAU2008/001888 Patents Publication Number WO2009/0876727

A Typical IMW Hidro+ module

Equipment Description	Quantity
Water Tower / Reactor and Dimension	13 Reactor Towers each 2.75m in diameter x 12.5m in height. Each Reactor consists of 2 capsules and 1 Hammer
Buoyant Capsules	65 (5x 225kVA)
Weight / Hammer / RotorΔ	65
Reverse Thruster (RTPE) Chambers	65
Rack and Pinion Geared Wheels / Hydraulic / Pneumatic Cylinders [* if applied]	65
Stator-BanksΔ	65 (only applicable when Rotor or Translator is used)
Generators if applied (*)	5
High Voltage Switchgears	1
Low Voltage Power Supply	5
PLC based control panel	1
Area required	750m ² (excluding provision for sub-stations)
Lighting	Night lighting by the movement of Weight/Rotor across the tower.
Capital Cost	Budget at USD2million/MW. Excluding site and site works, interconnection, engineering and technical services
Cost of Production	USD0.01 cents/kWh reflected as costs for equipment replacements and relevant trades.

Hidro+™ Technology Engineering, Energy and Mass Balance.

The technology Energy and Mass Balance is represented as $E_i + E_c = E_o + Acc.$

[Nett Electrical Energy Output = $E_o - E_i - Losses$]

Where:

E_i = Energy Input; being actual external power used or parasitic energy/load.

E_c = Energy Conversions; being converted nature-energy into potential energy.

E_o = Energy Output; being the nett electrical energy generated.

Acc = Accumulation Energy; being other energy converted and/or losses due to mechanical friction and drag.

The Potential Energy of the Weight is $E = M.G.H$ (refers as PE on free-fall which later converted onto F or Thrust Force; and PE converts into Kinetik Energy).

Where;

E = Potential Energy in Nm (Joule); and the Rate of work is $J/s = Watt (W)$.

M = Mass of Weight in Kg.

G = Acceleration due to gravitational force $9.81 m/s^2$.

H = Tower height in metres.

The Weight Freefall Velocity from the top of the tower is derived from $V = a \times t$; and $t = \sqrt{2S/a}$

Where:

V = Terminal Velocity (neglecting air resistance) in metres/second (m/s).

a = Acceleration due to gravity $9.81 m/s^2$.

t = Time in seconds.

S = Flight distance in metres.

The Thrust created by the Weight on impact or at the start of stator-bank (distance $[d]$ in meter) is $F = PE/d$; which gives the total Thrust in Newton (N). The Thrust (N) $\times$ Velocity (m/s) = Watt (W) of power. These formulas are in accordance with Newton's 1st and 2nd Laws. This is Energy Generated or Energy Output (E_o) at a rate of per second on a full power-cycle of 17 seconds.

Power created by Rack and Pinion geared arrangement is $P = W \times T [2\Phi \times N \times T]$

Where:

P = Power in Watt (W).

$\Phi = 3.14$

N = Revs/sec

T = Torque in Nm

W = Radians/sec.

The Buoyancy energy converted is based on density of the water being $1,001 Kg/m^3$ and the Deep-Water Pressure energy converted is based on $10kPa$ ($10kN/m^2$) per One (1) meter of water depth; thus in a water tower of 20m in height the pressure gradient is $200kPa$ at the bottom of the tower. These figures are in accordance with Archimedes Principles.

The Drag in water is $E = \{C \times Rho \times Area \times V^2\}/2$ in Newton (N) of pressure force. This drag is substantially avoided as Buoyant's relatively low velocity flights.

Where:

C = Coefficient of material specific.

Rho = Density of medium (water).



™ World Patent Pending numbers: AU2007/906961 & PCTAU2008/001888 Patents Publication Number WO2009/0876727

A = Projected area of the object in medium.

V = Velocity of the object in medium.

The Hidro+™ World Patent Pending includes the unique "Reverse Thruster Pressure Equalizer [RTPE]" system that allows air inflation at the bottom of the tower to be "assisted" where higher pressures (pressure gradients resulting from varying heights) within the tower are introduced in the RTPE chambers, equalizing the high pressure that is to be overcome in the air transfer cylinder). Parasitic energy on this instance, as well as on instrumentations and controls, is thereby greatly reduced.

The Energy Input (Ei) is: $P = F \times V_a$ (Nm/s) being displacement of the piston at the air transfer speed in Watt (W) of electrical power; which represents approximately 10-21% of Power Generated as parasitic load which includes mechanical losses.

The air transfer flow rate designs vs required is defined using Bernoulli's equations $P = V^2 / 2g$ and Air transfer in Duct is:

$$Q = A \times V_t.$$

Where:

P = Head in metres.

V_a = Flow Velocity in m/s.

$G = 9.81 \text{ m/s}^2$.

Q = Quantity of Air in m^3 .

A = Effective Area of Duct in m^2 .

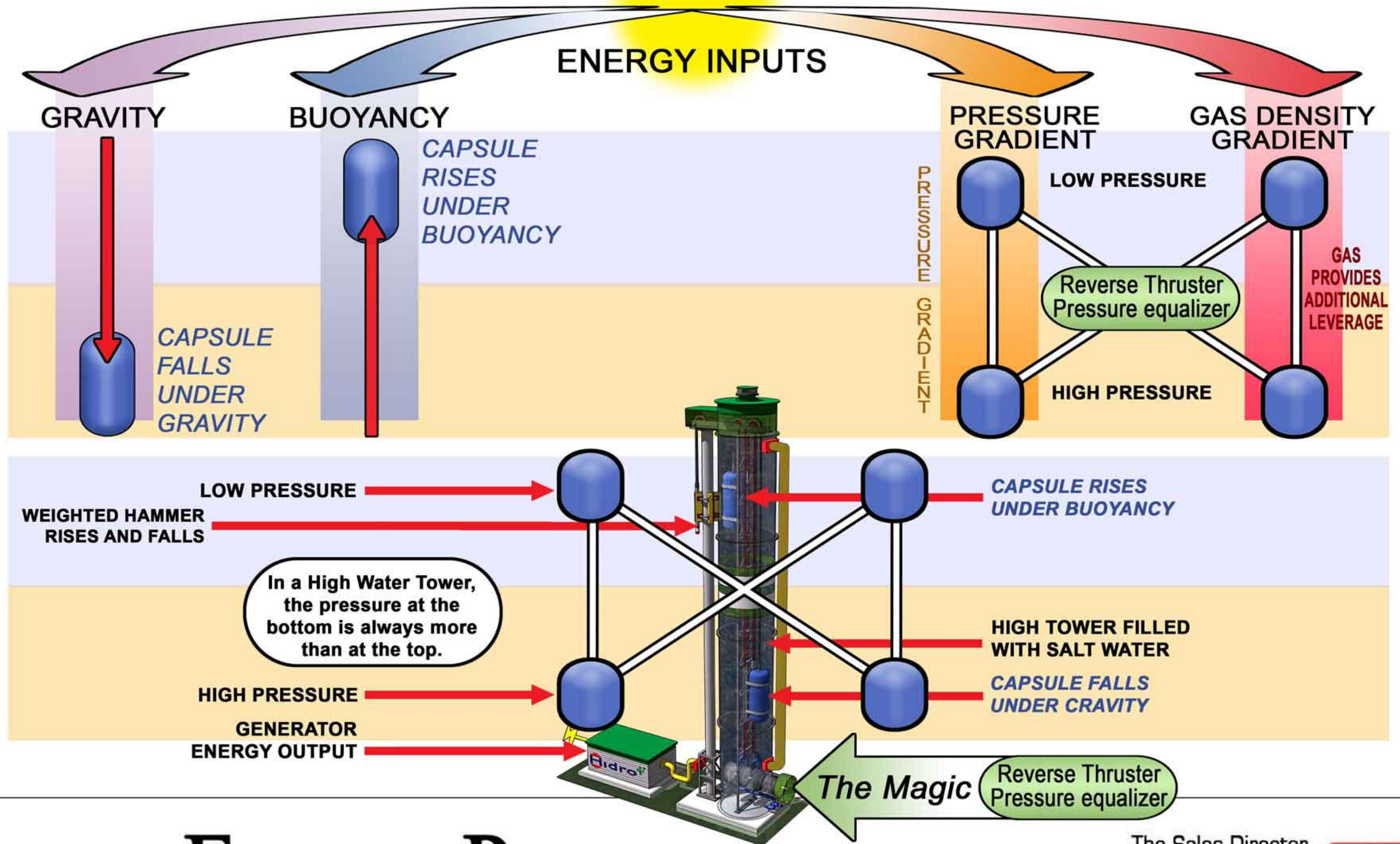
V_t = Velocity of Air transfer in m/s.

The Nett Energy Output and Plant Efficiencies described in table below:

Nett Plant Performance Efficiencies (*) = excludes potential energy conversions; includes parasitic losses.	Percentage
Actual Energy Input (*) / Nett Electrical Energy Output	~ 25%
Actual Energy Input (*) / Gross Electrical Energy Generated	~ 20%
Nett Electrical Energy output / Actual Energy Input (*)	~ 400%
Nett Electrical Energy Output / Gross Energy Generated	~ 80%

The Hidro+™ technology is protected under World Patent Pending numbers: AU2007/906961 and PCTAU2008/001888. The International Preliminary Examining Authority Reports, dated 23/6/2009, have issued statements under Article 35(2) for the total Patents due to Novelty, Inventive Steps and complete Industrial Applicability. The World Intellectual Property Organisation (WIPO) has on 25/6/2009 published the International Hidro+™ Patents Publication Number WO2009/0876727.

Clever use of all 4 energies, and under controlled conditions causes a heavy weight to rise and fall, to produce electricity.



Green Energy Power

Generated by Hidro+ Technology

The Sales Director
Green Energy Power
GPO Box 1959
Hobart, Tasmania 7001, Australia
Tel: +613 6225 2998 Fax: +613 6225 0878
Email: mail@g8consultants.com.au





Green Energy Power

Generated by Hidro+ Technology

The Sales Director
Green Energy Power
GPO Box 1959
Hobart, Tasmania 7001, Australia
Tel: +613 6225 2998 Fax: +613 6225 0878
Email: mail@g8consultants.com.au

