The most efficient technology of
RENEWABLE ENERGY

SMART HYDRO ENERGY
'Hydrodynamic Energy Conversion Technology'
WORLD-WIDE GRANTED PATENTS

HDRO Technologies Corporation
NZ Limited.

"..with the mission to save our planet from the worst impact of the global warming & climate change..our renewable energy technology called **HYDRODYNAMIC ENERGY CONVERSION TECHNOLOGY(Hidro+)** has taken some two decades to reaching the commercial ready status for the smart distributed utility scale plants with the unlimited generating capacities as based load or distributed power systems.

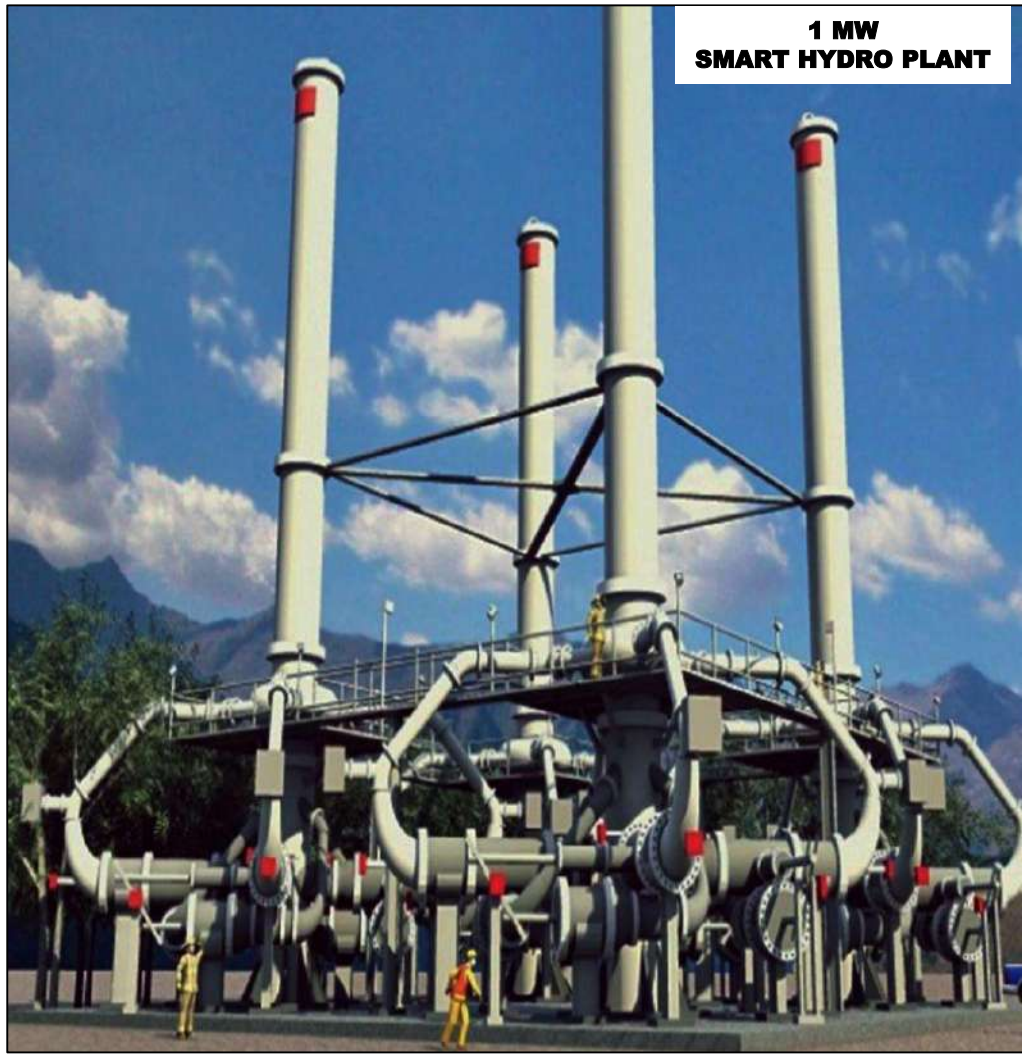
The innovative new technology has been researched and developed mainly in Australia with our global specialists partners and academia from various countries including USA, EU, Korea, Netherland and Romania. The process that have consumed significant professional man hours and large capital investments entirely self-funded. The granted patented technology process is based on continuous active and reactive cycles of conversion and reformation hydrostatic potential energy in a closed-cycle, it's the first in the world and it is working with proven demonstration units and technical papers peer-reviewed by various recognized international Journals (IJSTUK) and independent assessments by academia in Australia, Indonesia, Romania, United Kingdom. The technology generally named as Hidro+ is basically power generation using hydrostatic potential energy in a closed-cycle. The technology is acknowledged by the United Nations and was exhibited four times at the UNFCCC including as the number 1 exhibit at the UNFCCC Doha on 2012 COP in Doha Qatar.."

Dr Ir. James Kwok
The principal of the technology
& Founder of HDRO Technologies Corporation NZ Ltd.

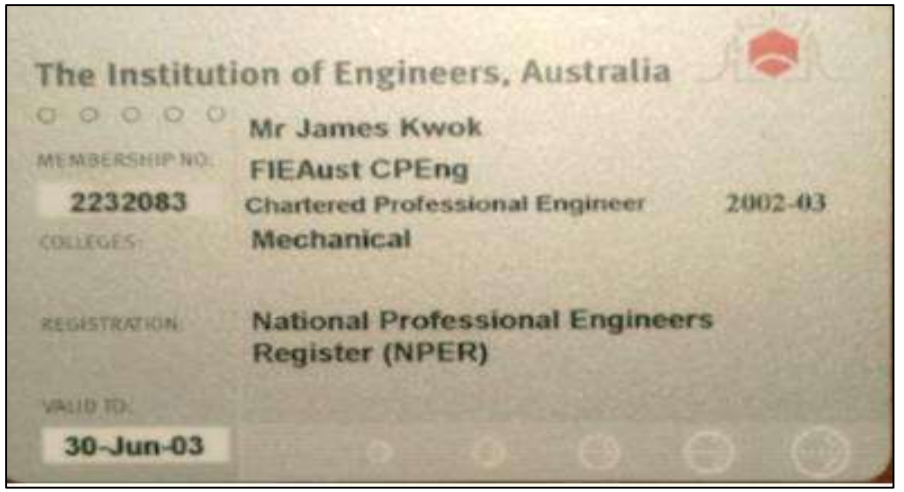
‘HYDRODYNAMIC ENERGY CONVERSION TECHNOLOGY’ (HIDRO+)

THE NEW INNOVATION & MOST EFFICIENT SOURCE OF RENEWABLE ENERGY

- Capacity factors : 97%
- technology process is based on continuous active and reactive cycles of conversion and reformation hydrostatic potential energy in a closed-cycle.
- The application and modular design is very versatile and able to be deployed everywhere. For 1MWe plant will need 500sqm of footprint area.
- For 1MWe plant can works for 24 hours, 7days per week and can generate 8 650 000 kWh/per year, with a power generation cost at USD$0.02cent/kWh.
- The commercial module is a hydrostatic battery where stored energy pumps air fluid and captures the kinetic energy of air as electrical energy.
- The source of water will be filled in for 1 time only and the plant continuous to generate the electricity for 30 years.



The principle of the Hydrodynamic Energy Convertion Technology : Dr Ir. James Kwok



- **CHARTERED PROFESSIONAL ENGINEER AUSTRALIA.**
- **FELLOW INSTITUTION OF ENGINEERS AUSTRALIA.**
- **NATIONAL REGISTERED PROFESSIONAL POWER GENERATION ENGINEER AUSTRALIA.**

Hydrodynamic Energy Convertion Technology:
Protected under world-wide granted patents and patents pending.

Patents name: James Kwok: Hydrodynamic-Cycle Energy Generation:

Published by **World Intellectual Properties Organization** (WIPO) Geneva. PCT/AU2008/001888/AUPatent No 2008902488/2008338258, PCT/AU2010/000430, PCT/AU2010/904786,

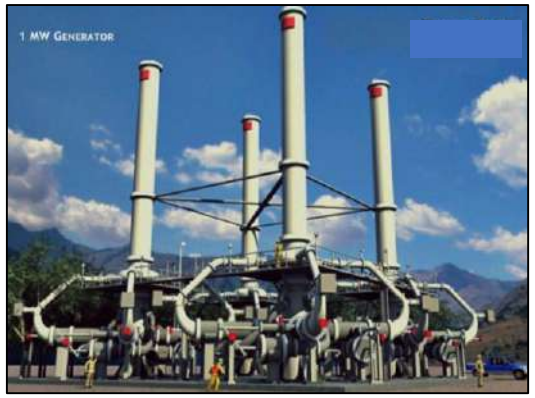
The first in the WORLD the granted patented technology process is based on continuous active and reactive cycles of conversion and reformation hydrostatic potential energy in a closed-cycle.

Mr James Kwok's Hydrodynamic Energy Convertion Technology(Hidro+) is acknowledged by the United Nations, been exhibited 4 times at the UNFCCC and has been patented at 87 countries..

UNITED NATIONS

UNFCCC

WIPO



Water tankers

Or

Sea water

Or

River water

Water

Water

Water

SMART HYDRO ENERGY

Hydrodynamic Energy Convertion Technology(Hidro+)

Supply electricity

Supply electricity

Supply electricity

- **The sources of the water for the Smart Hydro Energy plant can be either the sea or river water but the water will be filled in for 1 time only !**
- **By only filled in 1 time the water + liquid, the power plant can continuous generate the electricity for 30 years !**
- **With Hydrodynamic Energy Convertion Technology, the 1MWe plant can generate the electricity for 24 hours,7days per week or 8,650,000kWh per year..!**

oil refinery

city & residences

factories

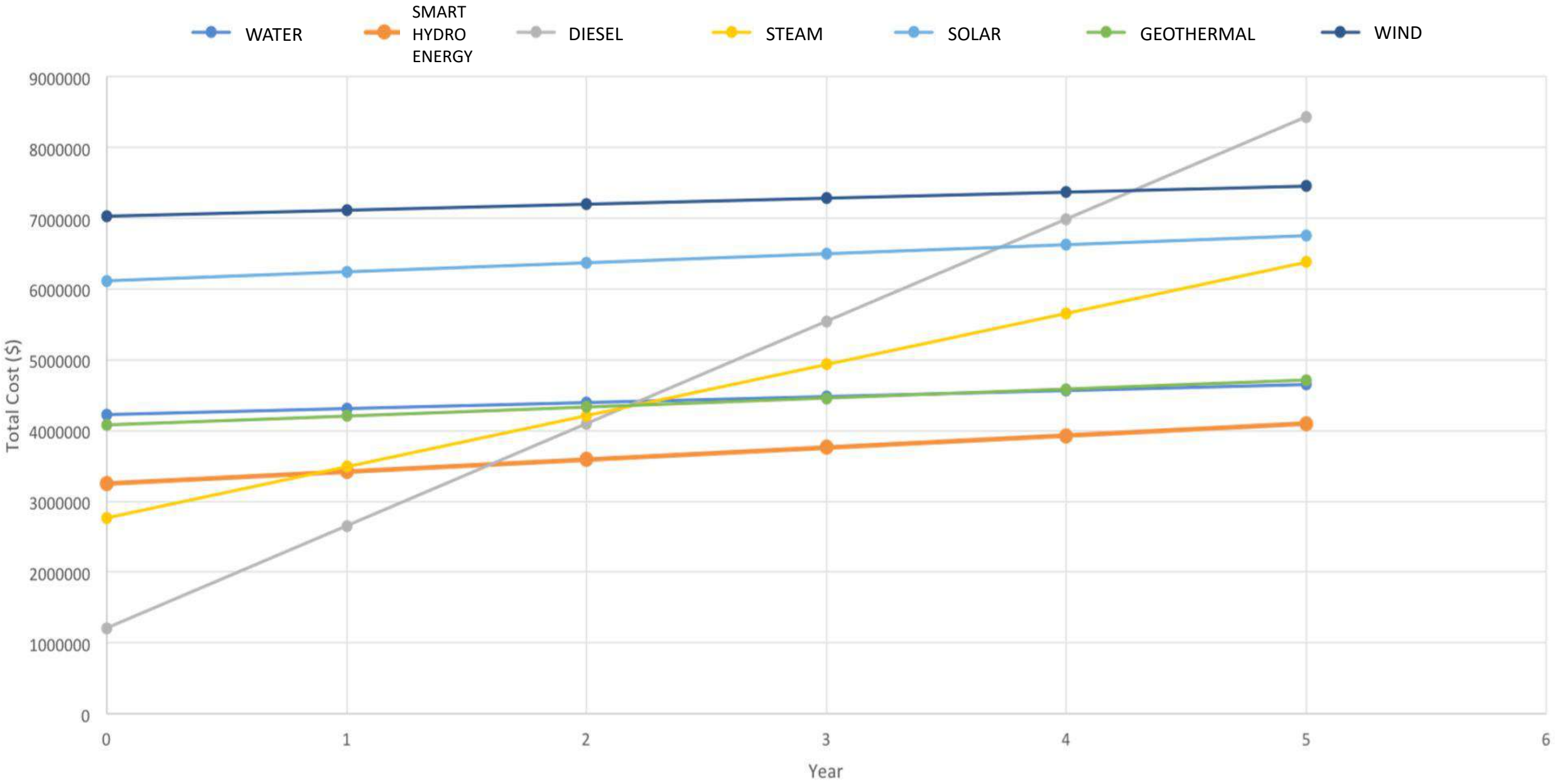
rural village

villages at desert

Comparative Matrix of SMART HYDRO ENERGY(Hidro+) with other Power Plants

No	Technology	Investment /MW (USD Million)	Capacity Factors (%)	Footprint/ MegaWatt	Opex Cents/kwh	Location Base
1	Smart Hydro Energy	3 - 3.5	97	500	2	No
2	Steam	1.5 - 2	94	3000 - 4000	6.5 – 8.5	Yes
3	Solar Energy	1.2 – 1.4	20	10 000	1.5 - 2	Yes
4	Hot rocks/geothermal	2.5 – 3.5	97	20 000 – 40 000	1.5 - 2	Yes
5	Water	2 – 2.4	97	20 000 – 40 000	1 – 1.5	Yes
6	Wind	2	20	2000	1 – 1.5	Yes
7	Diesel	0.5	94	150	13 - 15	No

Comparative CAPEX and OPEX



SMART HYDRO ENERGY

'Hydrodynamic Energy Conversion Technology(Hidro+)

Environmental

- ✓ Smart Hydro Energy(Hidro+) operation has zero waste, zero pollution, and zero emissions having an environmentally friendly lifecycle not using any precious resources.
- ✓ Provides an integral solution to the human demand for a clean world free of fossil fuel and precious resource dependence.
- ✓ Construction has very small carbon footprint without detriment to flora and fauna.

Social

- ✓ Commercialization of the Smart Hydro Energy(Hidro+) technology will provide substantial job opportunities.
- ✓ Developing communities will have opportunity to develop and advance because of energy independence.
- ✓ Smart Hydro Energy(Hidro+) can secure energy, water, food stability to avert poverty, famine, terrorism, and war.

SMART HYDRO ENERGY

'Hydrodynamic Energy Conversion Technology(Hidro+)

Economic

- ✓ A cost of per MW and wholesale per kWh is highly competitive compared with other renewable energy technologies and expected to decrease with technology roll-out and economy of scale benefits appearing in the future.

- ✓ The modular design allows capacity to be easily increased as demands and funding increases.

- ✓ Operational maintenance costs are minimal due to the simplicity of the system and the fact that no feed stocks and no waste treatments are required

- ✓ Smart Hydro Energy(Hidro+) is a modular distributed power system residing at substations not retarded by transmission inefficiencies, complicated and expensive battery storage requirements, and costs that hinder alternative renewable energy development.

- ✓ Extremely attractive investment potential to stimulate and secure economic stability.

HYDRODYNAMIC ENERGY CONVERSION TECHNOLOGY(HIDRO+) QUESTIONS AND ANSWERS.

- **WHAT IS THE ENERGY SOURCE?**
  Hydrodynamic Potential Energy(HDPE), Mass and Gravity.

- **WHERE THE ENERGY FROM?**
  Hydrostatic Potential Energy (“HPE”) Storage.

- **WHY IS IT A CONTINUOUS PROCESS?**
  Due to ‘Gravity’ always exists; and ‘Mass’ can not be destroyed only converted into energy (Laws for Conservation of Mass); these elements are the principle hydrodynamic potential energy referred to as ambient potential energy being always available to be harnessed and for conversion. Further, every work action there is work reaction, where work reaction quantum is less to work on action (Laws for Conservation of Energy), and when active and reactive actions are actuated contemporaneously, the resultant is a continuous medium of high inertia fluid implosion and mass transfer. The advantage of coherent kinetic energy is harnessed, stored and converted onto electrical energy. Scientifically, Hidro+ is a closed loop combined cycle of liquid-mass boundary parameters in continuous/constant energy conversion, transformation and reformation of Spent “HDPE” in contemporaneous active and reactive process-cycles.

- **HOW DOES IT WORKS?**
  Hydrodynamic potential energy (HDPE) of liquid* mass is converted into a process of high inertia implosion and mass transfers in a closed-system of contemporaneous inherent active and reactive energy conversion, the resultant is a coherent energy for a continuous power cycle. The breakthroughs on super advanced and innovative hydro-mechanical system harnesses mechanical advantage in the form of coherent kinetic energy, being then stored in a flywheel to power a turbo electric generator.

  (liquid* = water based siliconized liquid solution).

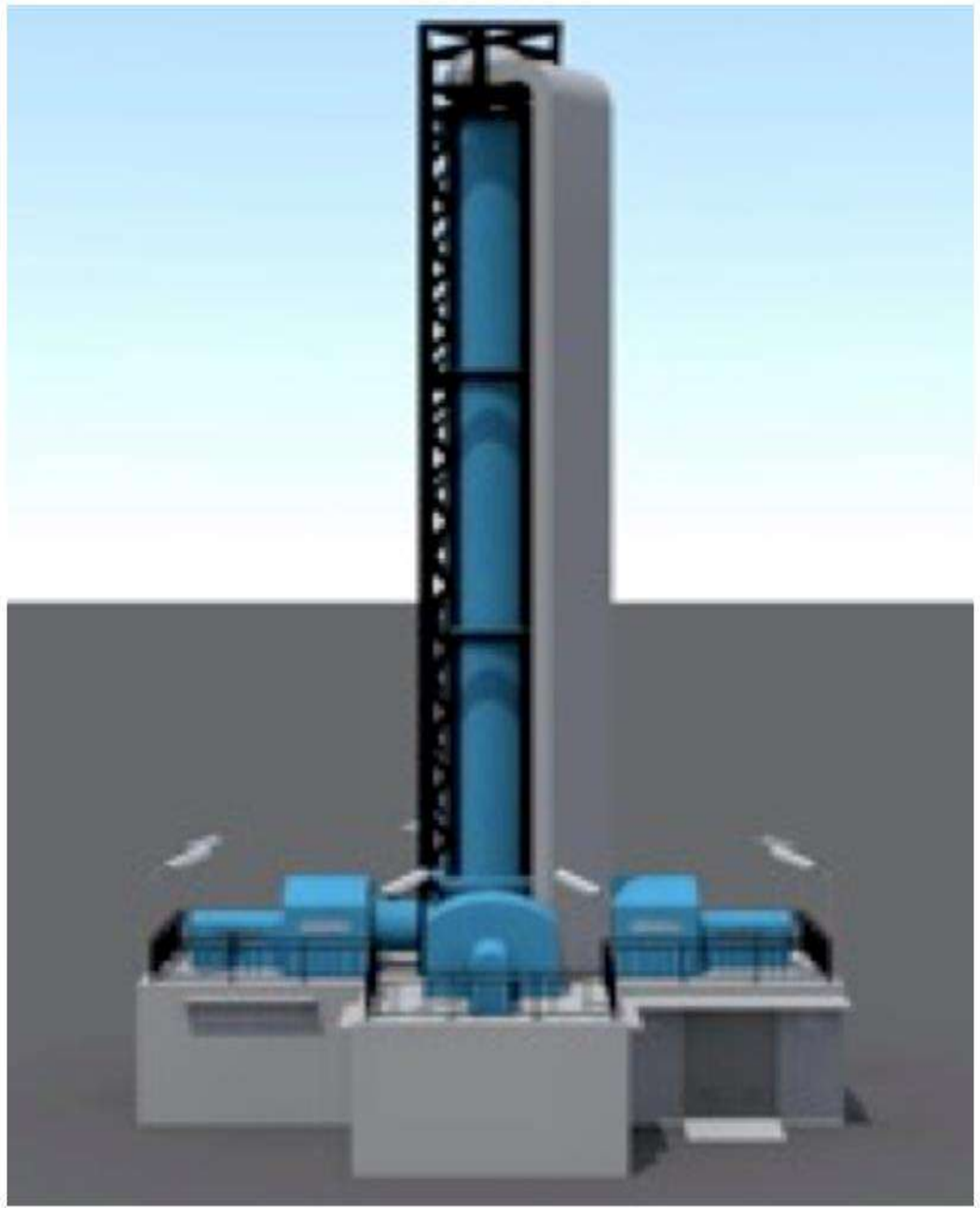
HYDRODYNAMIC ENERGY CONVERSION TECHNOLOGY(HIDRO+ GENERATOR) IS NOT THE SAME TO HYDROELECTRIC-DAM.

- **HYDROELECTRIC-DAM** uses Hydrostatic Water Potential Energy from water storage-dam.
  It is called an Open-Cycle system. HDPE = Mgh (Nm-Joules). The kinetik energy is harnessed in turbine to turn generator. The Spent “HDPE” is released to water river and is not re-used.

- **HIDRO+DYNAMIC** uses Hydrodynamic Potential Energy Resource in storagetower. After liquid-implosion kinetik energy is harnessed and stored in a flywheels, the Spent “HDPE” is reformed in contemporaneous processes of a Closed-Loop-Combined-Cycle system.
  HKE = ½mv2(Nm-Joules).

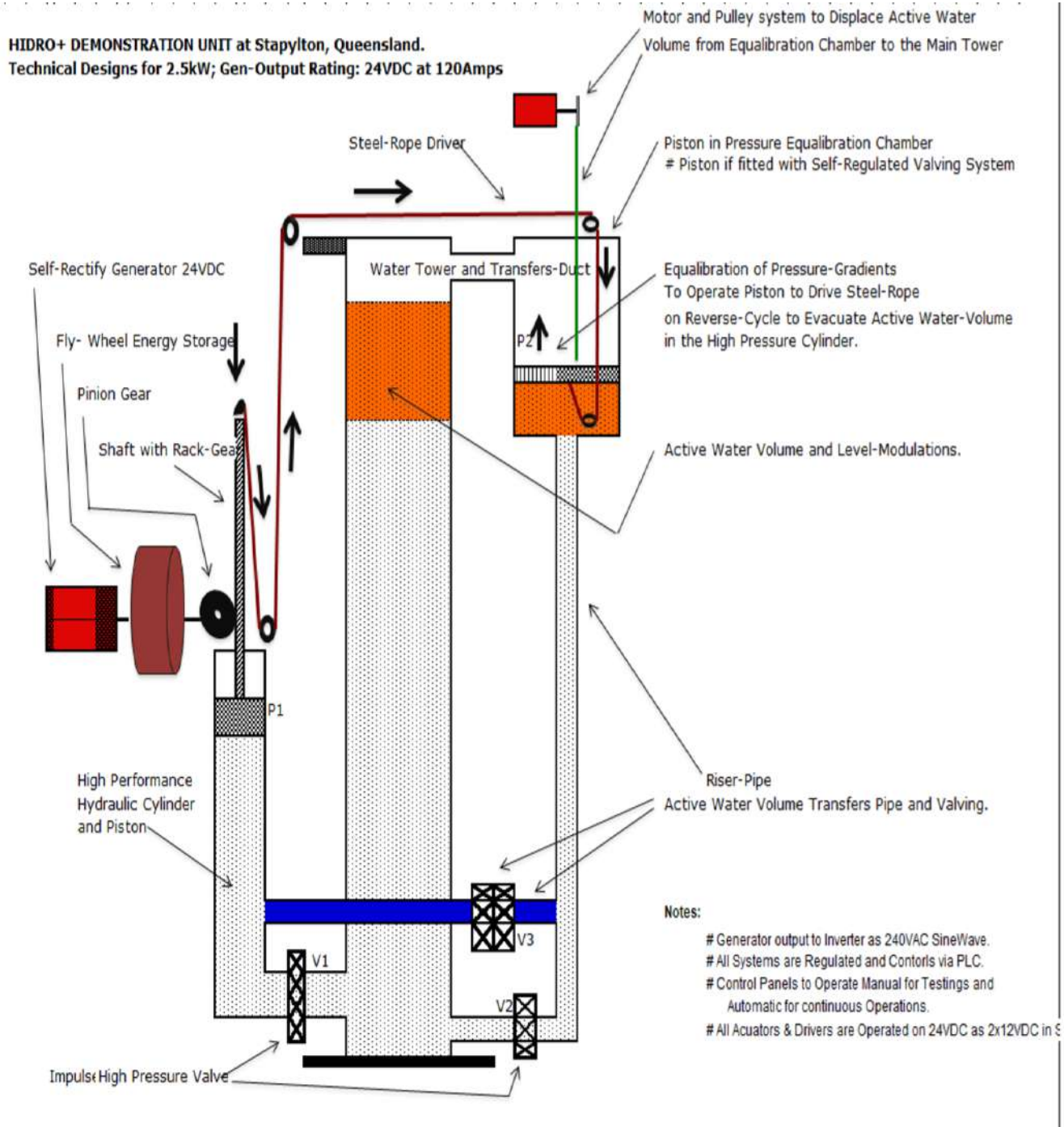
- The kinetik energy harnessing is augmented by vacuum-hydrostaticpressure (“VHP”). Hidro+Dynamic is a revolutionary engineering and advancement in dynamic of machineries, this is technical progression from the traditional hydro-dam.

SMART HYDRO ENERGY
(HIDRO+ DYNAMIC GENPLANT)m1X265kVa

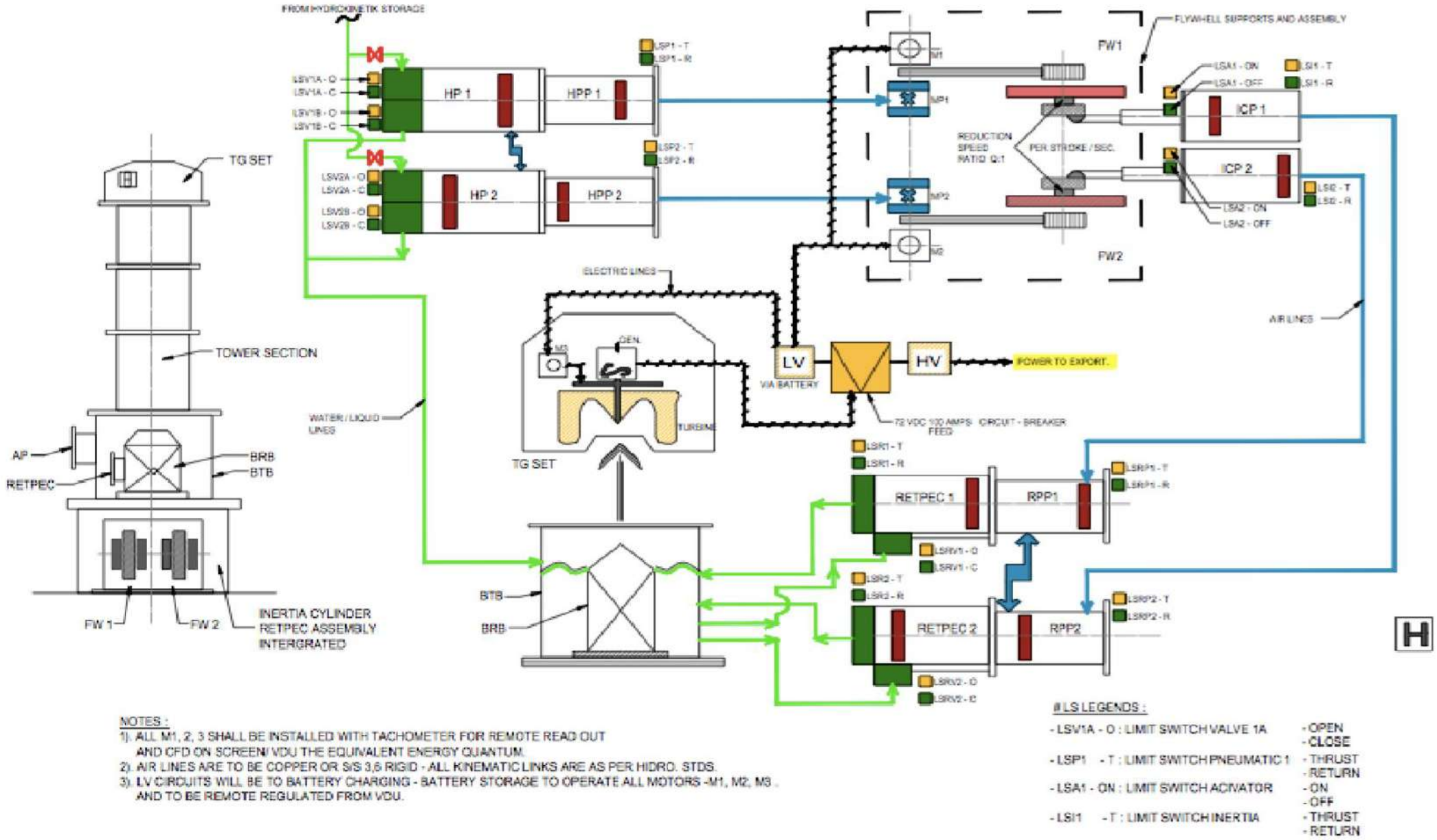


SMART HYDRO ENERGY
10kVA

SMART HYDRO ENERGY



SMART HYDRO ENERGY

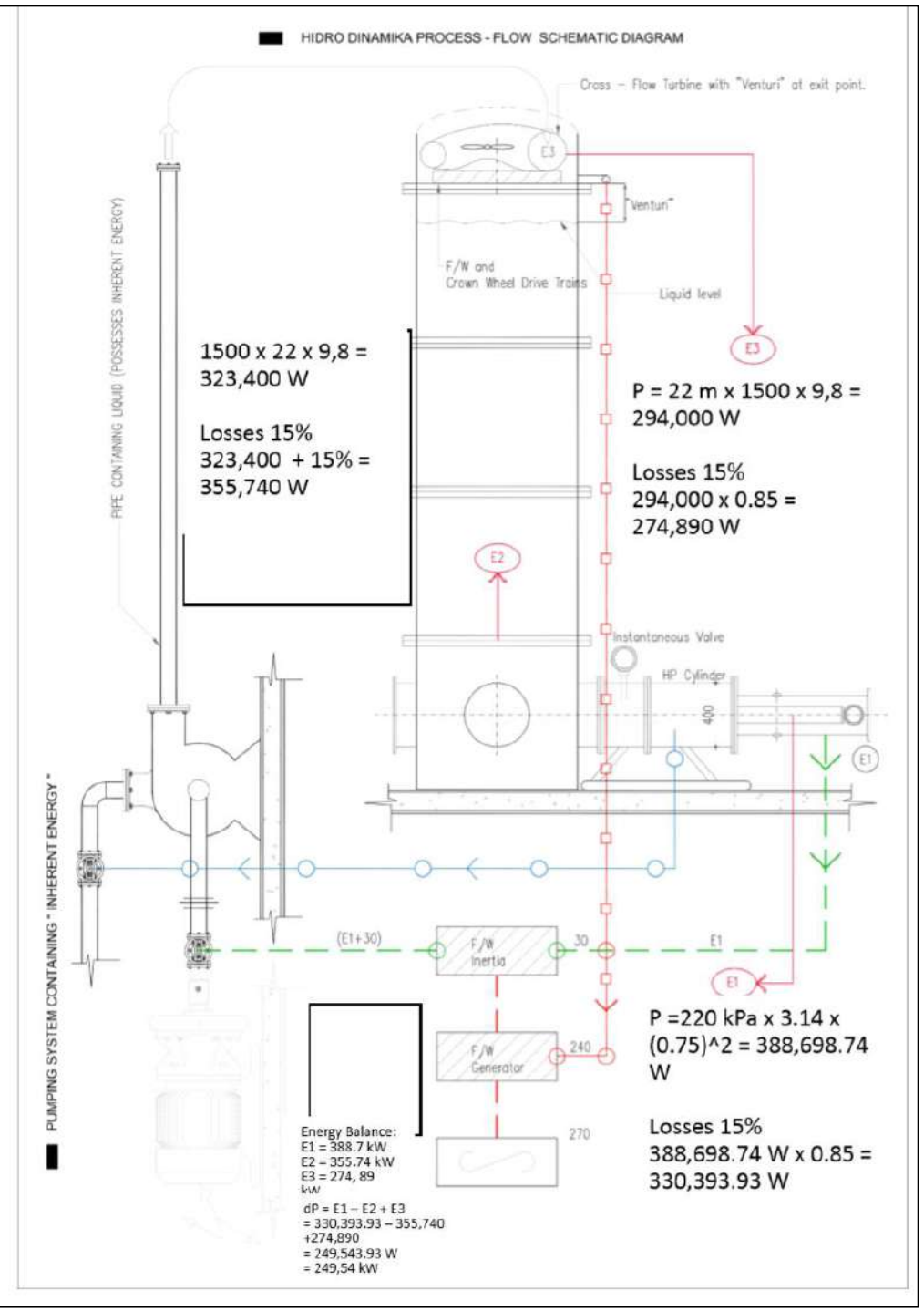


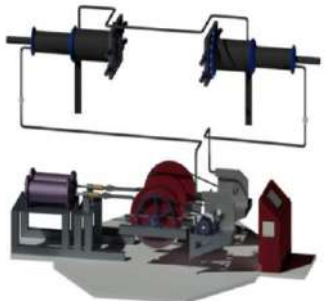
NOTES :

1). ALL M1, 2, 3 SHALL BE INSTALLED WITH TACHOMETER FOR REMOTE READ OUT AND CFD ON SCREEN/ VDU THE EQUIVALENT ENERGY QUANTUM.
2). AIR LINES ARE TO BE COPPER OR S/S 3,6 RIGID - ALL KINEMATIC LINKS ARE AS PER HIDRO. STDS.
3). LV CIRCUITS WILL BE TO BATTERY CHARGING - BATTERY STORAGE TO OPERATE ALL MOTORS -M1, M2, M3 . AND TO BE REMOTE REGULATED FROM VDU.

LS LEGENDS :

- LSV1A - O : LIMIT SWITCH VALVE 1A - OPEN / CLOSE
- LSP1 - T : LIMIT SWITCH PNEUMATIC 1 - THRUST / RETURN
- LSA1 - ON : LIMIT SWITCH ACTIVATOR - ON / OFF
- LSI1 - T : LIMIT SWITCH INERTIA - THRUST / RETURN

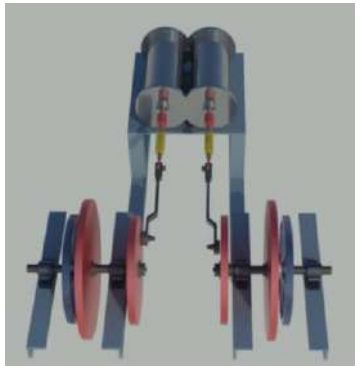




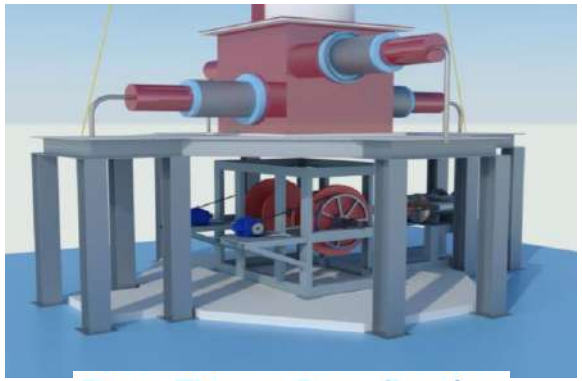
High Pressure Cylinder (Push)

Retpec Cylinder (Thrust)

Store Energy System



Kinetic Energy Storage Section



Base Tower Box Section

SMART HYDRO ENERGY POWER PLANT (HIDRO+) AT INDONESIA

asuransi jasindo

PLN
INDONESIA GOVERNMENT
ELECTRICITY COMPANY

- ✓ The subsidiary company of HDRO Technologies Corporation NZ Limited at Jakarta Indonesia been offered and signed the agreement with **JASINDO** to provide a full performance guarantees/ warranties and/or technical performance bonds to built the Hidro+ plant. JASCINDO that owned by the Indonesia government is the largest project assurance provider with AA Fitch credit rating to provide a full performance guarantees/warranties and/or technical performance bonds to built the Hidro+ plants.

- ✓ The Hidro+ technology scientific/process is also covered under full **Professional Indemnity Insurance London("PII")** covering total project capex for projects undertaken internationally. No technical/ scientific doubts is warranted,otherwise full capex refunded.

- ✓ The subsidiary company of HDRO Technologies Corporation NZ Limited with their Hidro+ technology have won the tender from Indonesia Government Electricity Company(PLN) to built the power plant & supply the electricity(PPA). For PLN, this Hidro+ technology were known as '*Pembangkit Listrik Tenaga Hidro Statis("PLTHS")' or Power Generation From Hydrostatic Potential Energy Convertion.*

2019
AWARDED TENDER FOR 2x110MWe at WEST KALIMANTAN
POWER PURCHASE AGREEMENT(PPA) WITH

PLN INDONESIA GOVERNMENT ELECTRICITY COMPANY

PT PLN (PERSERO)
Unit Induk Wilayah Kalimantan Barat

PLN

DPT

TANDA DAFTAR PENYEDIA TERSELEKSI

Nomor : 00108/DPT/RENDAN/PLN-UIWKB/2018

Berdasarkan Hasil Kualifikasi Penyedia Barang/Jasa di PT PLN (Persero) Unit Induk Wilayah Kalimantan Barat, dengan ini menerangkan bahwa :

PT. KALBAR ENERGI TERBARUKAN

Alamat : Jl. Putri Candramidi No. 288, RT/RW 002/038, Sungai Bengkong, Pontianak Kota, Pontianak, Kalimantan Barat – Indonesia

NPWP : 86.312.811.2.701-000

ID Vendor :

telah dinyatakan memenuhi persyaratan sebagai Daftar Penyedia Terseleksi (DPT) Lokal di Lingkungan PT PLN (Persero) Unit Induk Wilayah Kalimantan Barat dan masuk dalam Penyedia Terseleksi untuk Pekerjaan / Pengadaan Barang / Jasa Bidang Usaha Independent Power Producer (IPP) Energi Baru Terbarukan (EBT) .

Daftar Penyedia Terseleksi (DPT) Lokal ini berlaku selama 3 (tiga) Tahun sejak tanggal ditetapkan dengan ketentuan dan peraturan yang berlaku.

Pontianak, 28 Desember 2018

General Manager

Pejabat Perencana Pengadaan

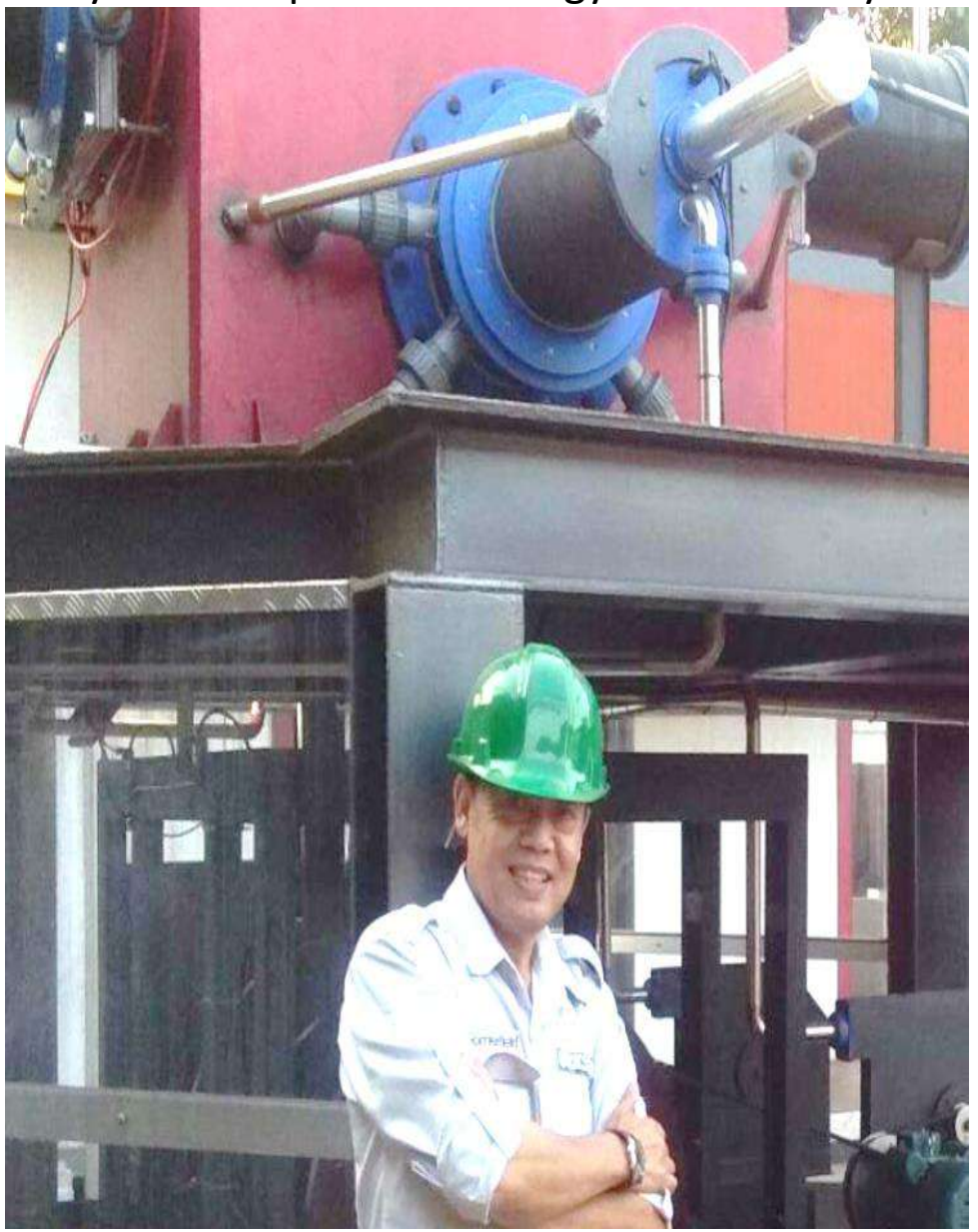
ABDUL MALIK

RICHARD SAFKAUR

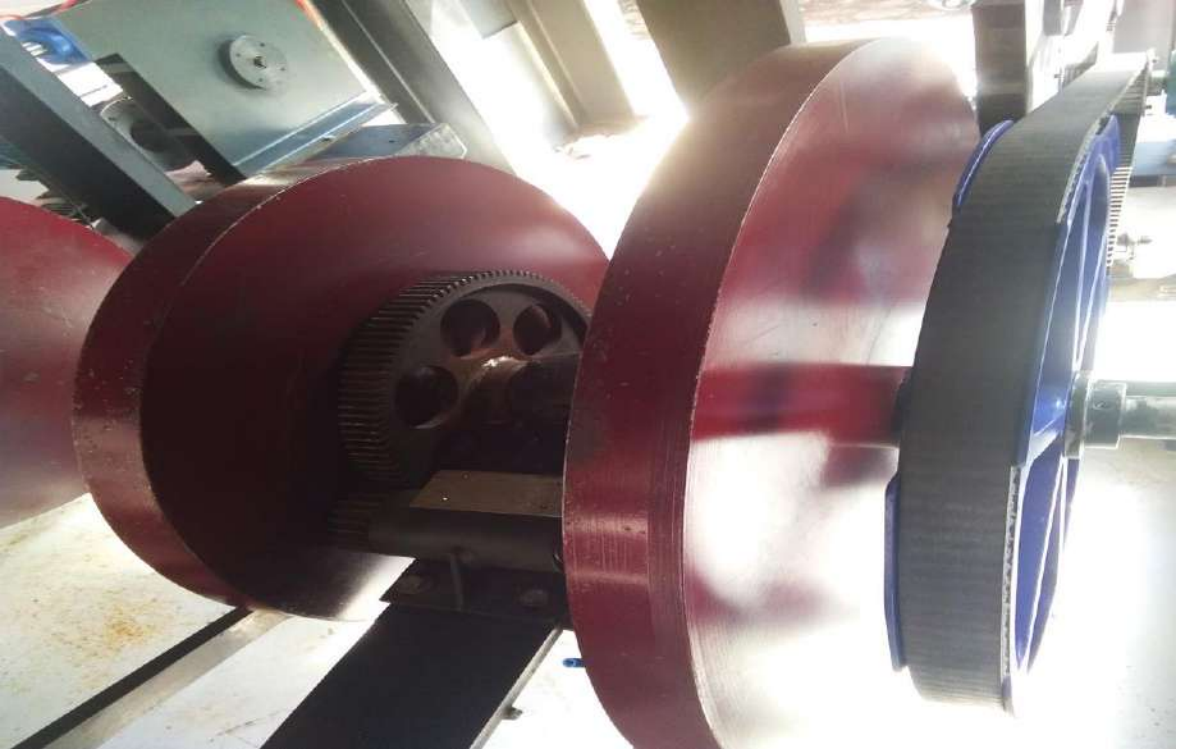
Contract Certificate from PLN

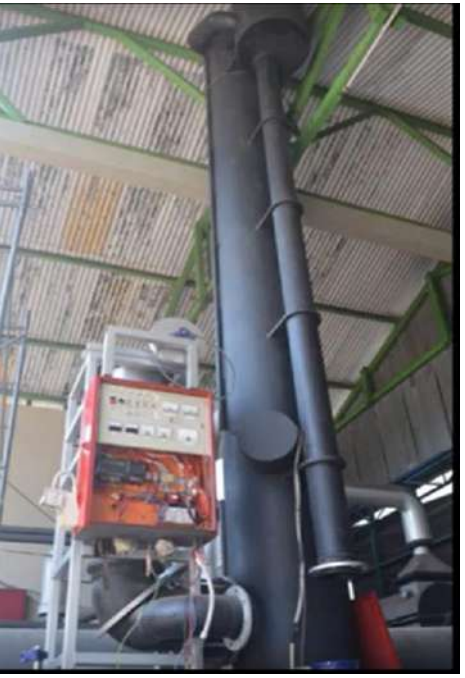
Smart Hydro Energy plant(10kW) at Bandung,Indonesia.

Power generation of hydrostatic potential energy in a closed-cycle



Ir. James Kwok at his Smart Hydro Energy(Hidro+) plant at Bandung, Indonesia



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Hidro+

SMART HYDRO ENERGY POWER PLANT (HIDRO+) AT AUSTRALIA

Ir. James Kwok at the Smart Hydro Energy plant at Australia.

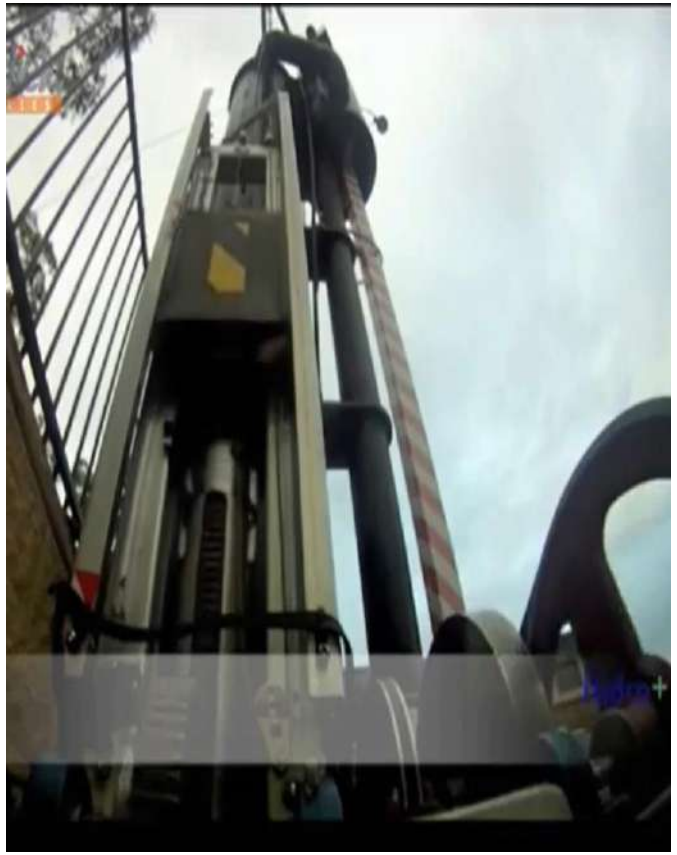

Hidro


Hidro+


Hidro+
Smart-Generator
Hidro


Hidro+


Hidro+

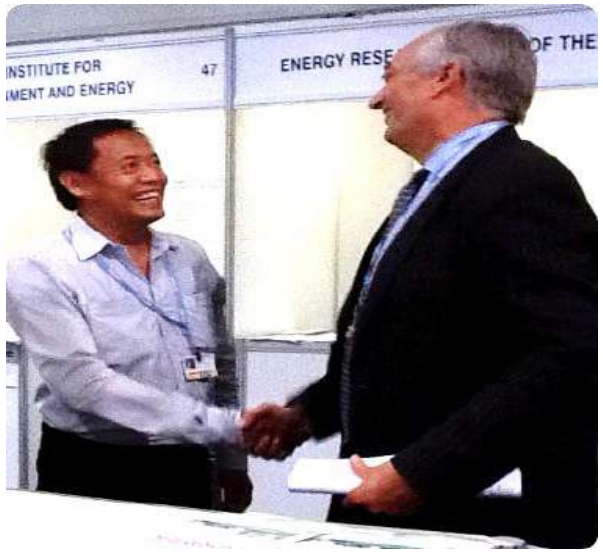

Hidro+


Anthony Noden Director - Renewable Utilities UK Limited


Hidro+
The Smart-Generator


Hidro+

Ir. James Kwok been interviewed during the COP17, United Nations,South Africa 2011.



Ir. James Kwok(left) & Lord Christopher Monckton.

Lord Monckton is a politician and was an advisor to former British Prime Minister, Margaret Thatcher

Ir. James Kwok inspects the Hidro+ Turbo-Fan Blade being fabricated in Perth, Western Australia.

Ir. James Kwok at a recent technology presentation to top scientists from Indonesia, Dr. Herman Darnel Ibrahim, Chairman of the Renewable Energy Congress-Indonesia; and the National Energy Council of the Republic of Indonesia; and Dr.Ir.Tumiran MEng, Member of the National Energy Council of the Republic of Indonesia

United Nations Climate Convention:

Mr James Kwok at the United Nations Climate Convention, COP18, Doha, Qatar 2012

Renewable World

NOW…

..it is the right time to take advantage & benefit with this new innovation and the most efficient of the..

HYDRODYNAMIC ENERGY CONVERSION TECHNOLOGY (HIDRO+)


GO
GREEN
TOGETHER
Let's
SAVE
THE WORLD

THANK YOU