Smart Hydro Energy, SHE
CONCEPT OVERVIEW

July 2017

Presented By
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Smart Hydro Energy, Maths

① **Hydromechanical Implosive Thrust Power**

$P_T = \eta_T \dot{m}_T g H_T$ $\dot{m}_T = \rho Q_T$ $Q_0 = V_0/T_0$ $V_0 = AWV$

② **Hydromechanical Reverse Cycle Power**

$P_R = \eta_R \dot{m}_R g H_R$ $\dot{m}_R = \rho Q_R$

③ Continuous mass flow rate enabled through cyclic extraction of hydrostatic potential energy and innovative hydromechanical pump, which also harnesses flow energy to deliver useable output power … *some external power needed for start-up & system margin*

④ **Net Usable HIDRO+ Output Power**

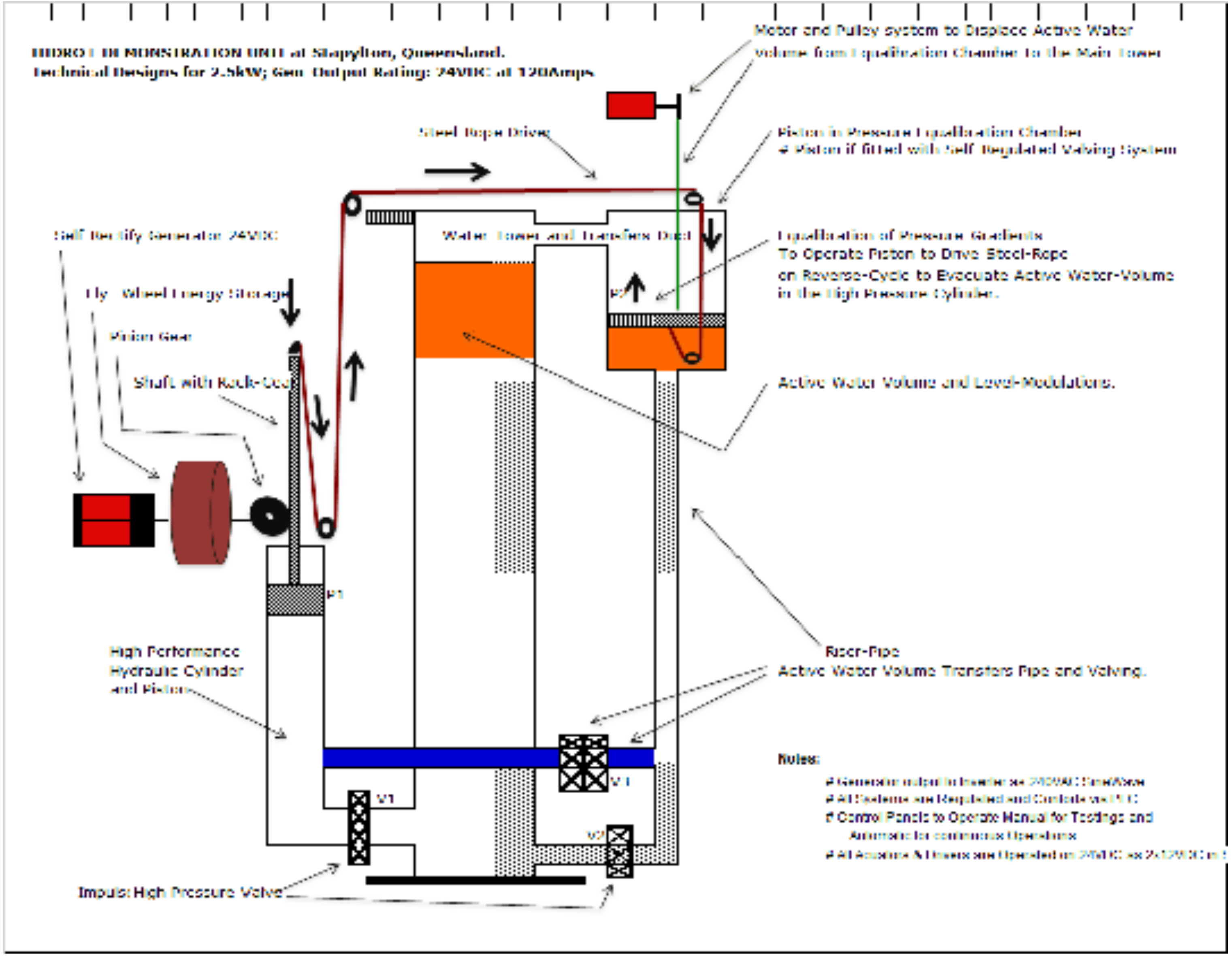
$P_{out} = \eta \dot{m}_{eff} f(\tau,v)$ (HIDRO innovation)

η = electrical conversion efficiency

$f(\tau, v)$ = function of cycle timing and flow speed

Smart Hydro Energy 1,5 kva

Working Principle



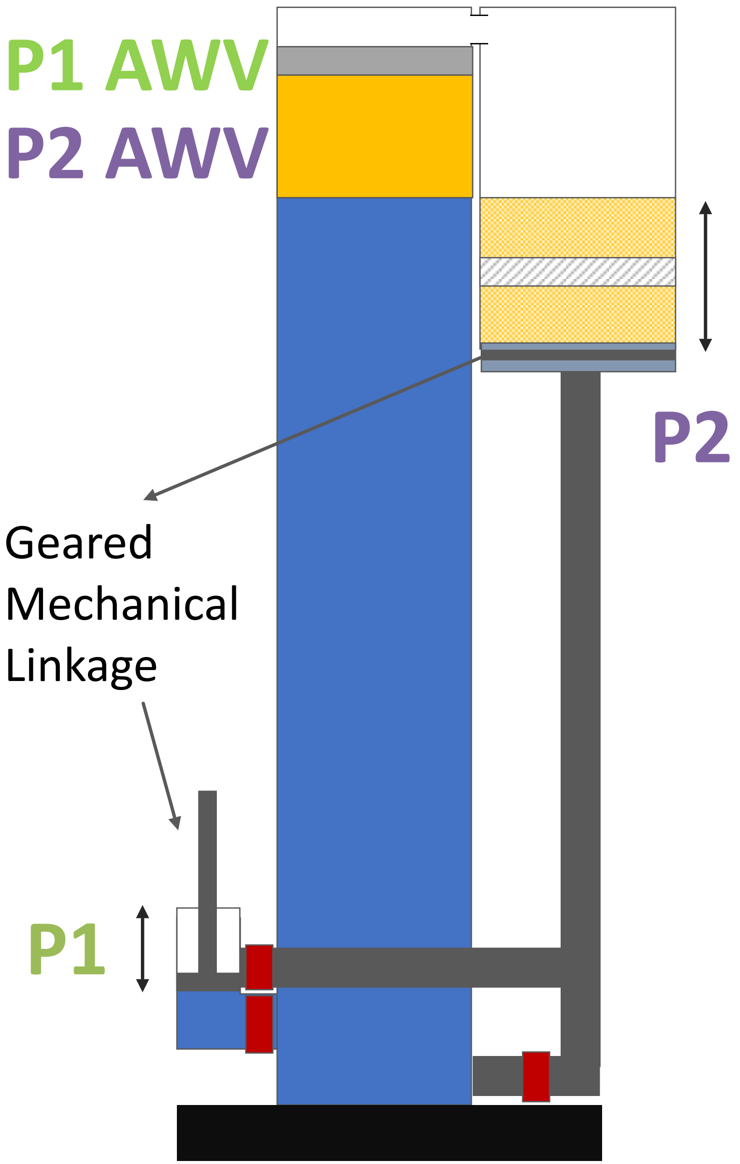
Principles of Operation

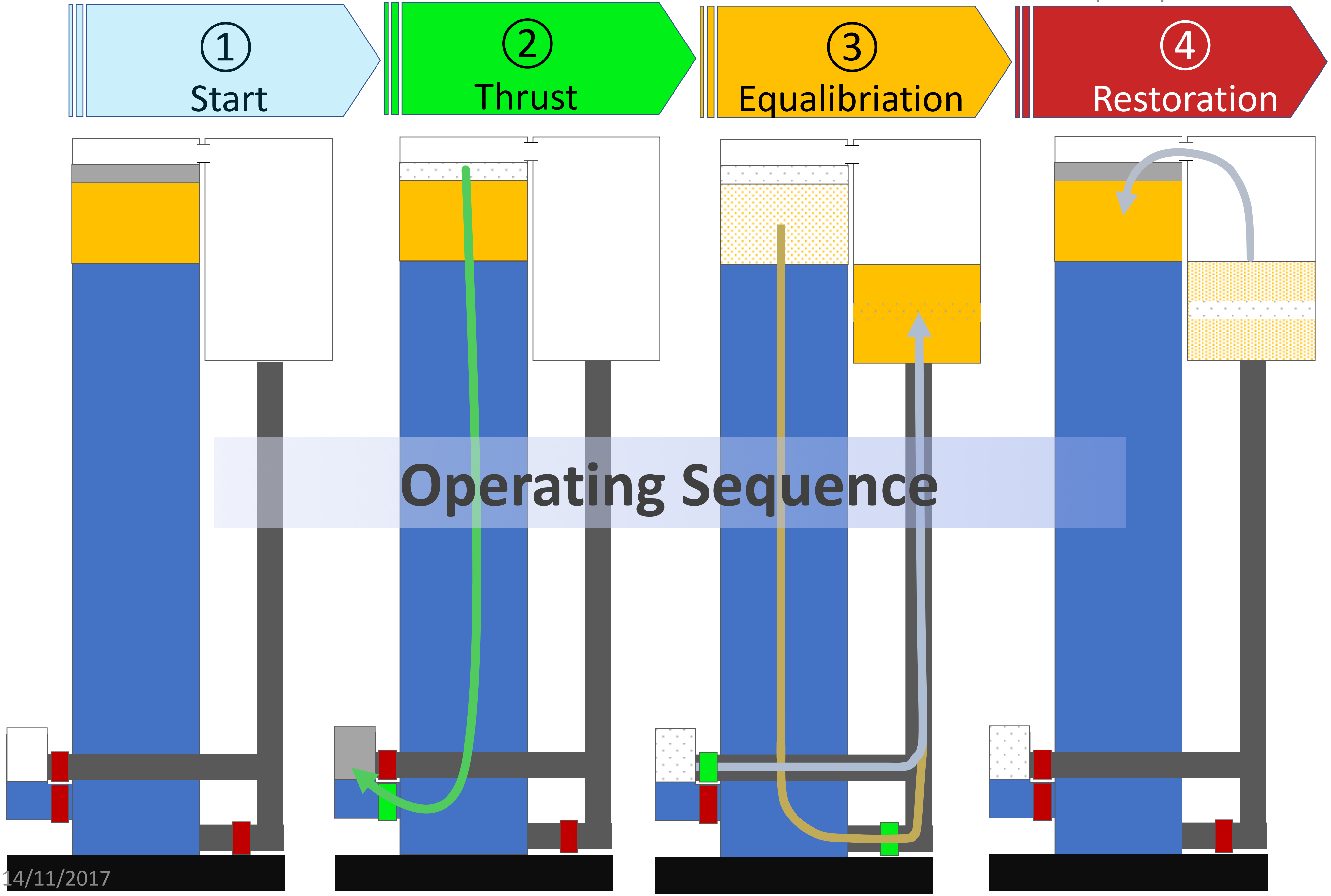
System Comprises

1) 1 tower + 1 reservoir + water fill
2) 2 pistons (linked)
3) valves + ducting
4) flywheel + generator + lift motor + control unit + battery

Four phases per cycle

1) START
2) THRUST
3) EQUALIBRIATION
4) RESTORATION





Operating Sequence

Power Calculation

- Whilst no output can be shown from the generator in this case, a theoritical-value was adopted, minus losses and efficiency-factor. On this basis the equivalent to power in kW(W) is based on Thrust of 60kPa x 0.075m2 = 4.25kN x 0.5m/s (thrust-velocity) = 2.125kW or about 1.6kW after losses and efficiency-factor.

- On this basis it can be concluded that the Net Energy Gain (NET)= 1.6kW (1600W) - 360W = 1240 Watts.

Capacity 10 KVA

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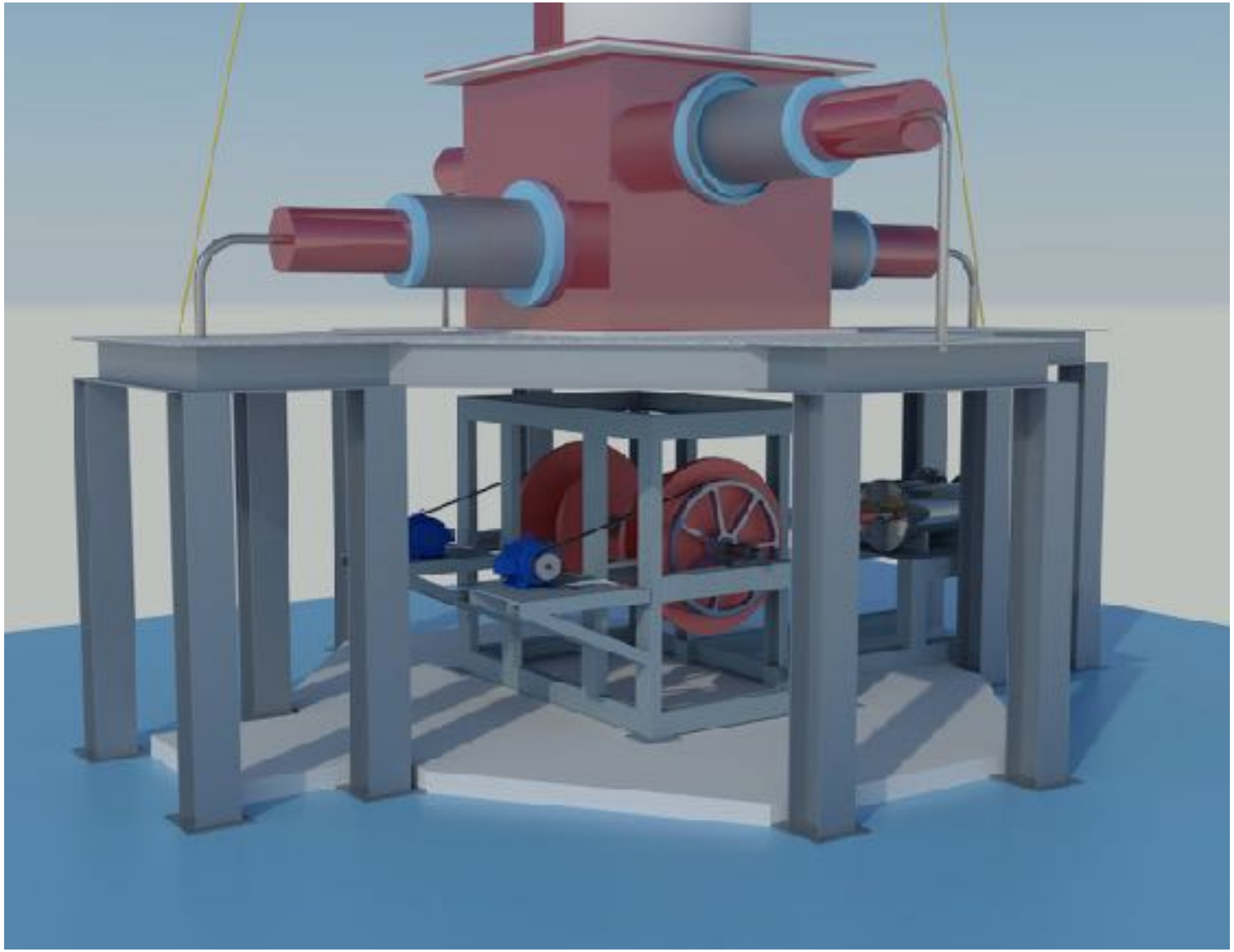
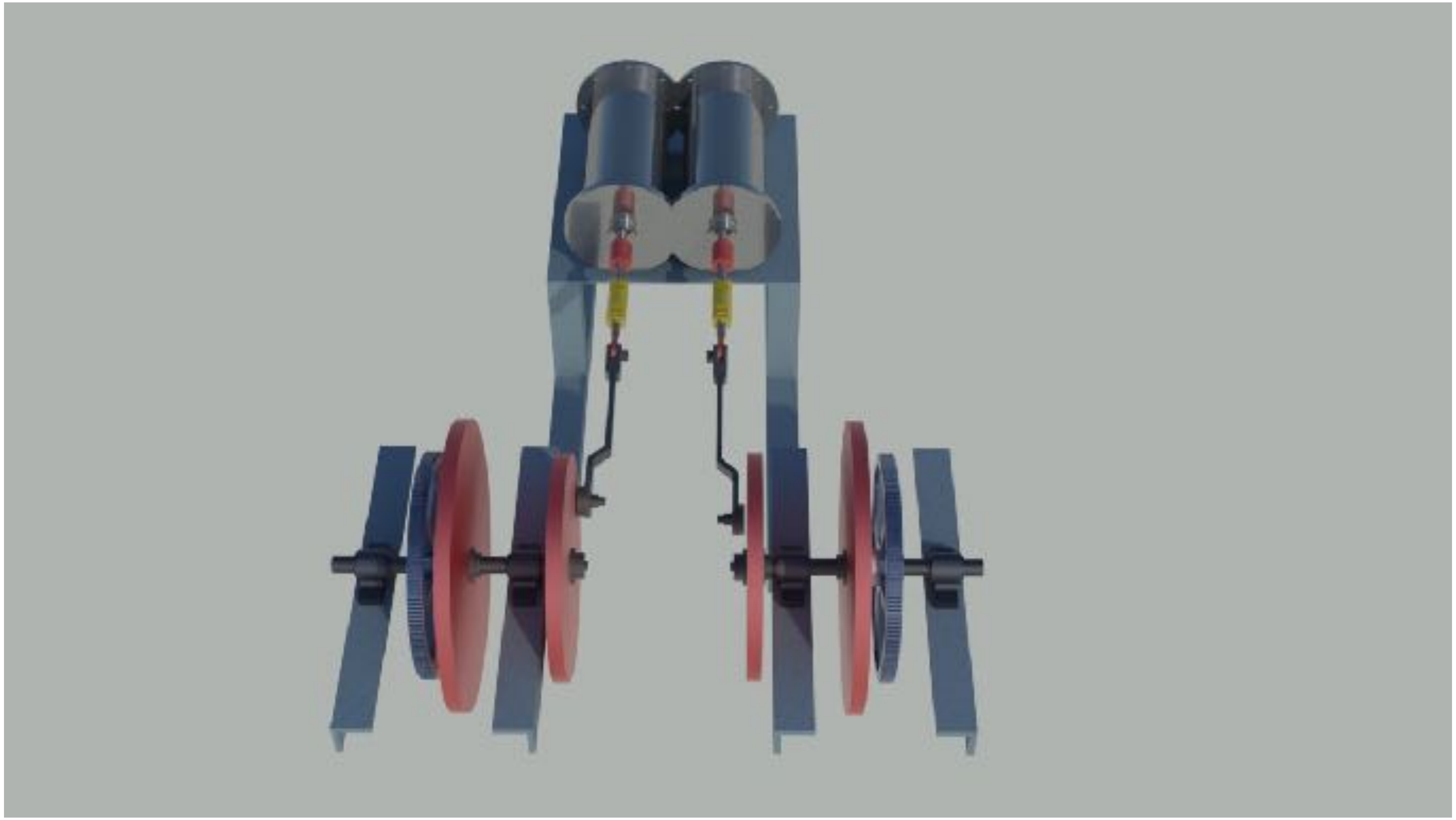
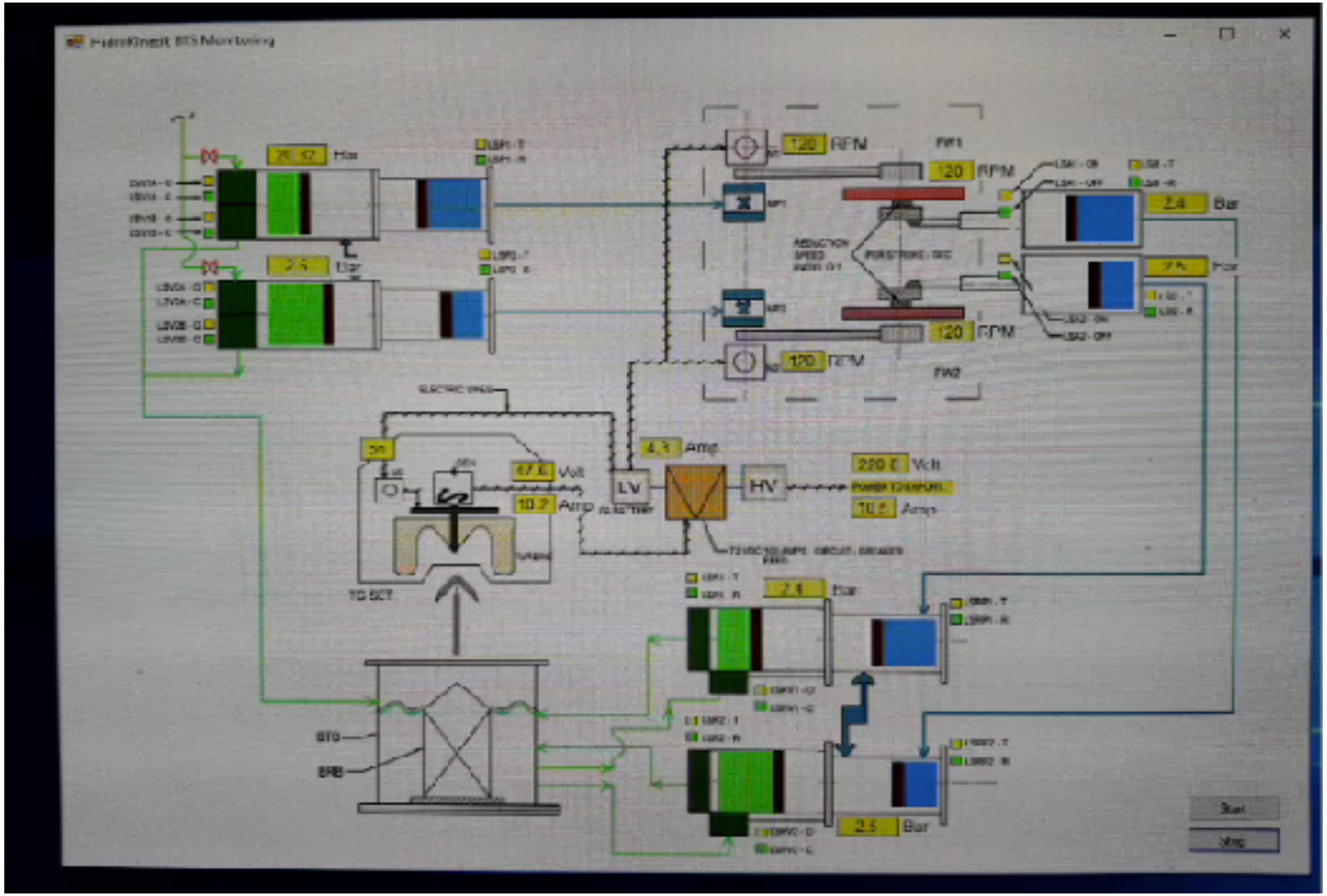


Inertia Cylinders Piston



Understanding SHE




1 MW Generator
Somerfield
INDUSTRIES

Power Plant Comparation

No	Teknologi	Inv./MW (USD Mio)	C F (%)	Footprint/ MW	Opex (cents/kwh)	Loc. Base
1	PLT Air	2-2,4	97	20.000 - 40.000	1 - 1.5	Yess
2	PLT Uap	1,75 -2	94	3000 -4000	6.5 - 8.5	Yess
3	PLT Surya	1.2 - 1.4	20	10.000	1.5 - 2	Yess
4	PLT Panas Bumi	2.5 - 3.5	97	20.000 - 40.000	1.5 - 2	Yess
5	PLT Disel	0.4 -0.5	94	250	13 -15	No
6	S H E	3 - 3.5	97	500	2	No