

African Utility Week

Power Generation Innovation

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CTICC, Cape Town, South Africa

www.african-utility-week.com

UTILITY + MUNICIPAL PROBLEM

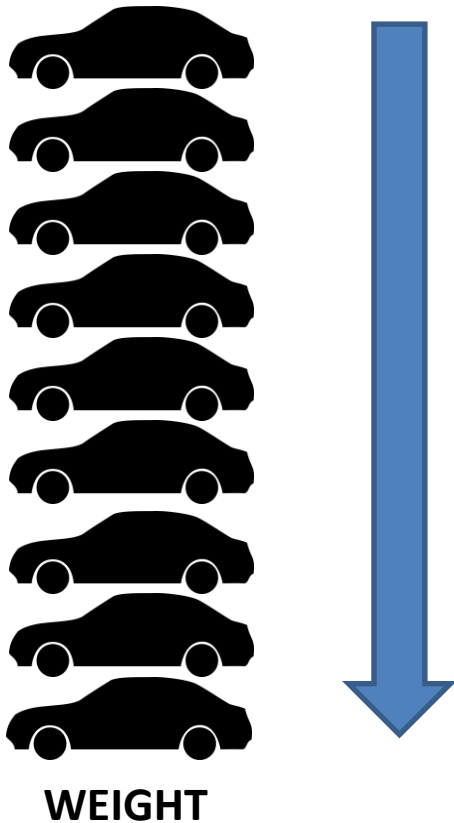
- Why don't the Utilities + Municipalities embrace renewable energy?
- Why are they stuck in the death spiral?

A Gravity Momentum/Vector Based System Solution

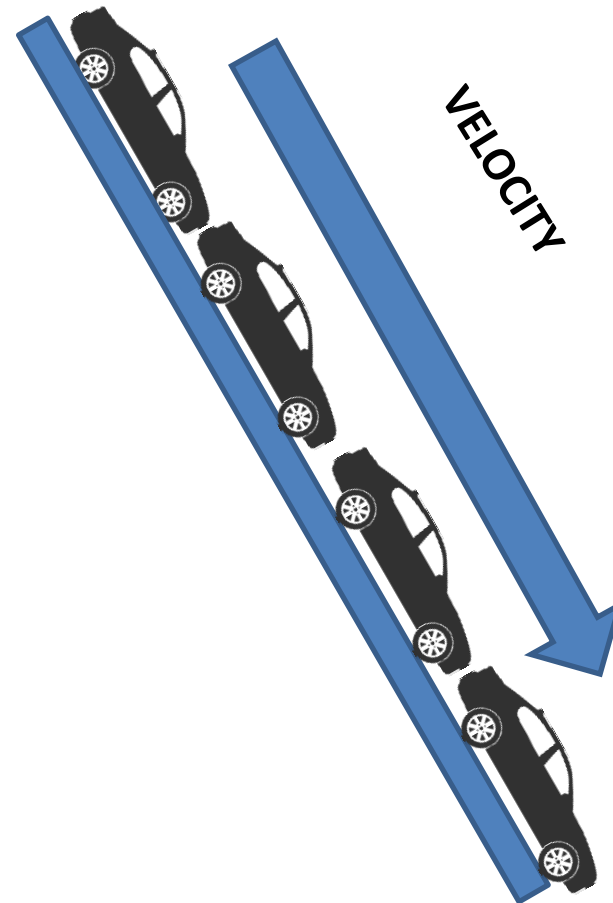
- Base load
- Units =<5500kw
- No dependencies
- Locate anywhere

Gravity has two components – Weight and Momentum/Vector

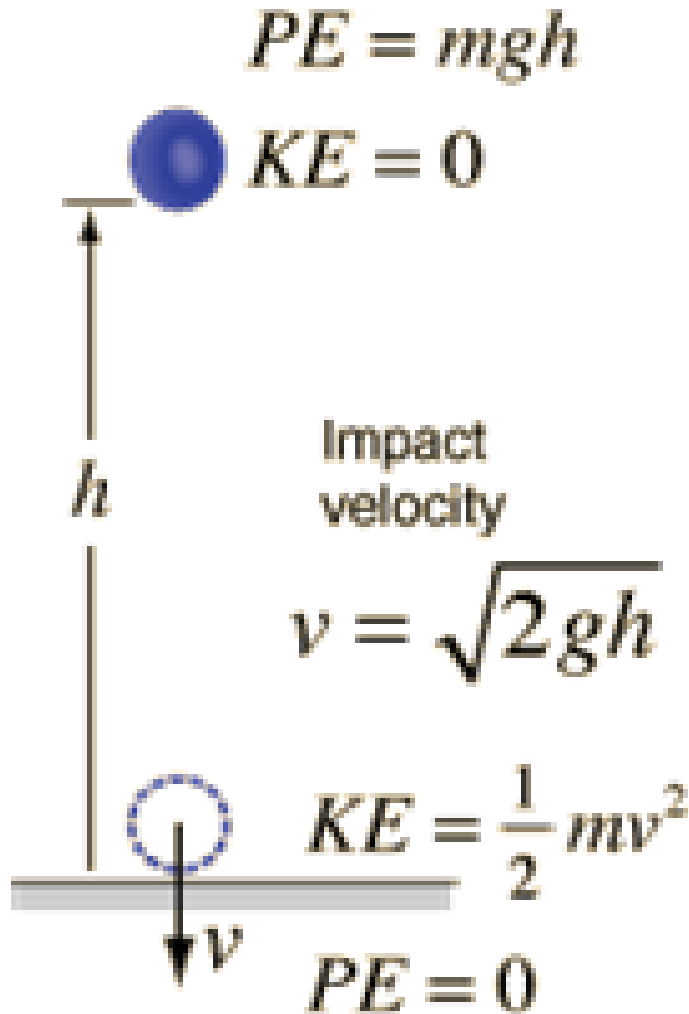
Standard Hydro



Gravio Hydro



Kinetic Energy to Work to Power

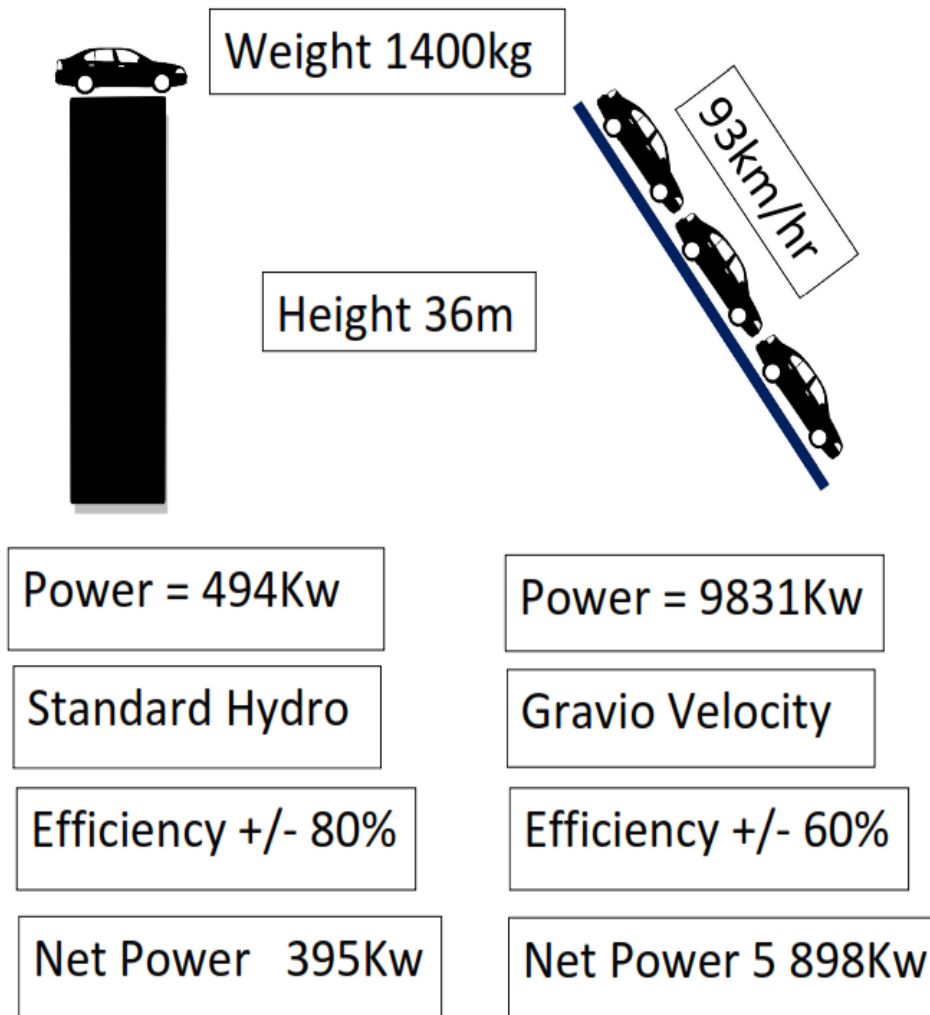


$$\text{Torque} = \text{Force} * \text{Radius} = \text{Nm}$$

$$\text{Ang. Velocity} = \text{Velocity} / \text{Radius} = \text{Radians/sec}$$

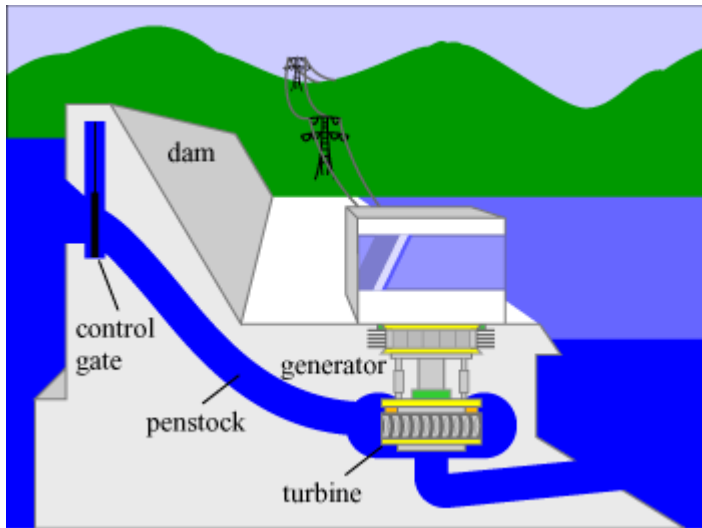
$$\text{Power} = \text{Torque} * \text{Ang. Velocity} = \text{kW}$$

Example of application



Comparison

Standard Hydro



Gravio hydro



Power Generation Possibilities

| Head | m | 10 | 20 | 30 | 36 |
|---------------------------------|----|--------|--------|--------|--------|
| Waterflow | L | 1000 | 1000 | 600 | 1400 |
| Max Power | Kw | 823 | 2303 | 4253 | 9831 |
| Expected at 60% eff | | 494 | 1380 | 2552 | 5899 |
| Pump x 1,5 | Kw | 150 | 300 | 270 | 750 |
| Stages | | Single | Single | Single | Double |
| Terminal Velocity | | Comply | Comply | Comply | Comply |
| Recycle retail cost est. USD | | 0,8m | 1,3m | 2,2m | 3,3m |



Generator – PMG +PMU

- Same as wind technology
- Slow turning as is our turbine
- High Torque as is our turbine
- Long life
- Low in maintenance
- Readily available - off the shelf



WHERE TO FROM HERE

- Proof of concept done
 - -used Prony brake
- Next is prototype using generator into micro grid
- Multiple plants into one micro grid

Approach to Market

- ❖ Expect widespread demand after prototype
- ❖ Initially self build until optimised
 - ❖ Design, Construct, Transport

Quickest route to market

- ❖ License - Euro 5000/100kw/year
- ❖ Royalty – 15% of best wholesale rate

Partner/s Opportunity

- ❖ Looking for PARTNER/S to;
- ❖ Collaborate and Cooperate with

FIRST MOVER ADVANTAGE TO SELECTED PARTNER/S

Incentive Opportunity

Looking for partner to collaborate with to polish further;

BENEFITS

- No licence fee payable on 1st 100Mw owned plants - only royalty
- Licence fee Euro saving 20 years – Euro 100m
- Limited to original country
- Competitive advantage to other owners

COST

- Euro 5m on signature – use funds to refine 100kw & 1mw & 5mw plants
- Euro 5m post refinement

Advantage to Partner!

- ❖ Escape the utility/municipality death spiral
- ❖ Repay debt / Restructure balance sheet
- ❖ Decentralise power generation

Approach to Market

- ❖ Licences for
 - Manufacturers
 - Installers
 - Commissioners
 - Use smart grid technology – prepayment
 - Owners – Licence Euro 5000/100kw/year
 - Owners – Royalty 15% of best wholesale

Thank You!

Licence + royalty % go towards 2.5bln no electricity

On our way to eradicate energy poverty in the world!

Peter Jordaan – CEO

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