



GEC Company Bio

The Company

Gravitational Energy Corporation (GEC) was incorporated in July 2007 as a C-corp. by Bruce Feltenberger, President/Secretary, and Art Drentlau, Vice President/Treasurer. Mr. Feltenberger and Mr. Drentlau comprise the board of directors.

Mr. Feltenberger, as the inventor of the Feltenberger Pendulum Technology, has assigned GEC the rights to develop, manufacture and market the technology. The Feltenberger Pendulum technology has one U.S. Patent issued and one Patent Cooperation Treaty International Patent application pending.

Prior to GEC's incorporation, three years of design, research and development by Mr. Feltenberger, Mr. Drentlau and their Chief Engineer Matthew Butrick led to the development of several prototype machines of various sizes and capabilities to give a thorough understanding of the technology. As a result, GEC now has one commercial product.



Bruce D. Feltenberger



Art Drentlau



Matthew Butrick

Description of Technology—Summary

The Feltenberger Pendulum, a double-reciprocating technology, provides momentum in two directions simultaneously by converting the rotary direction of the pendulum's axle into a linear in-and-out direction. This axle is attached to a hydraulic piston pump. The force obtained from the gravitational acceleration of the swinging pendulum, Gravity Assisted Power (GAP), creates a greater efficiency in work.

First Commercial Product—The GP210



GP210

A hand-operated suction type water pump that can lift water approximately 25 feet (7.62 meters) at sea level from the water source to the pump at a rate of up to 17 US gallons (64.35 liters) per minute. The GAP advantage allows the operator to work the pump with at least five-times less fatigue than any other hand-operated pump. This translates into an operators ability to pump by hand up to 1,000 US gallons (3785 liters) of water per hour with very little fatigue. Well suited for irrigation, the GP210 is available mounted on a stationary A-Frame, a mobile trailer, or as a stand-alone unit to be installed on your own stanchion.

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The pendulum on the GP210 weighs 40 lbs. and is 48 inches long. A selector pin on the axle changes the length of the linear stroke to change the flow rate/pressure of the water being pumped. This allows the operator to hand pump pressurized water up to 80 psi. There is no other hand-operated pump in existence today that can pump water at these volumes or pressure.

The volume of water and pressure that can be pumped in a sustainable manner will vary based on the strength of the operator(s). The following is a guideline:

<u>Gallons per hour water pumped</u>	<u>P/V setting</u>	<u>Pump Pressure</u>	<u>Equivalent Head in Feet</u>
600—1200	4	5—10 psi	11.5—23
300—600	3	10—20 psi	23—46
150—300	2	20—40 psi	46—92
75—150	1	40—80 psi	92—184



The GEC Water Treatment System

An optional 4-stage water filtration system, manufactured by Hanish Water, is available with the GP210 to filter any fresh water source at the sub-micron level producing safe drinking-water that meets or exceeds World Health Organization standards.

The GP210 and filtration system mounted on a mobile trailer becomes the GEC Water Treatment System and is ideally suited for emergency management, security/military forces and developing nations where fuels and electricity are unavailable or unreliable.

GP210 Strategic Market Placement

One GP210 Water Treatment System can provide safe drinking water for some 20,000 people daily. Because no other known technology utilizes GAP to help operate hand-operated equipment, GEC believes its Feltenberger Pendulum product line will be uncontested by potential competitors. Furthermore, the GP210 fully equipped for water treatment competes favorably with other systems that are not hand-operated, but instead are diesel powered or electrically driven.

Other Mobile Water Treatment Systems rated for 1,000 gallons per hour of safe drinking-water are powered by fuel or electrically and cost up to approximately \$100,000. The Hand-Powered GEC Water Treatment System produces the same amount of safe drinking water, yet costs approximately \$35,000.

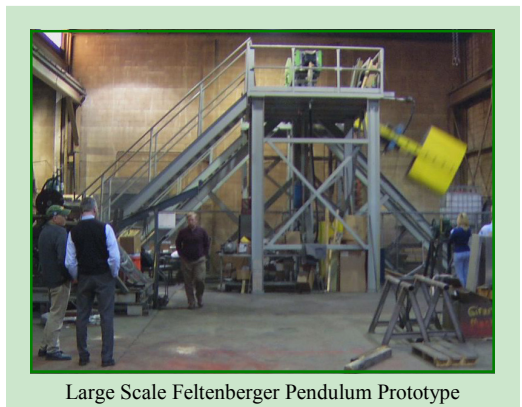
Commercial-Grade Electric Generation Prototype

Research and development continues with a two-story tall 18,000 lbs. Feltenberger Pendulum. This computer-controlled machine has demonstrated dramatic results making GEC confident it will achieve 80+% efficiency in the generation of electricity. Current coal-fired power plants only achieve 30-35% efficiencies.

A bio-fuel engine is under development to replace and provide an increased efficiency over the compressed air input system currently used to drive the pendulum.

The primary application for these machines is producing electricity, however they can be directly applied to performing other tasks such as pumping large amounts of fresh water or seawater or moving oil through pipelines. In every case, these machines are intended to require about one-half the fuel that would normally be used without the *gravity assist* that the GEC technology employs.

Planned GP210 attachments:



Large Scale Feltenberger Pendulum Prototype

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1. Attachments to allow the GP210 to pump water from depths approaching 150 feet and beyond.
2. Attachments to allow the GP210 to generate electricity to charge batteries for radios, cell phones, LED lighting, etc...
3. Input attachments to replace the human hand-power with fuel-based systems.

Future Company R&D and Applications

Smaller\larger versions of the GP210;

1. A "Backpack" version that will pump a maximum of 25 gallons per hour.
2. A version that will pump a maximum of 150 gallons per hour.
3. A version that will pump a maximum of 500 gallons per hour.
4. A version that will pump a water pressure of 250 psi. This larger version will be used for lifting water from deep wells approaching 500 feet and beyond, lifting water to fill large storage tanks and for desalinization of brackish water.

Variable sized fuel-based machines for electrical generation;

Development of this technology makes it feasible to build stand-alone base-load electricity generating facilities. In addition to reduced fuel requirements, the equipment is expected to have a long life cycle in the range of 50+ years with routine maintenance. All of these machines will work in conjunction with or without a power grid (utility) depending on the preference of the owner. The expected cost of these machines are projected to be in the range of \$800 to \$1,200 per installed kilowatt of capacity.

<u>Size</u>	<u>Application</u>
10 Kilowatts	Single-family homes
25 Kilowatts	Small commercial or industrial markets
50 Kilowatts	Mid-size commercial/small industrial
100 Kilowatts	Commercial/Industrial
250 Kilowatts	Commercial/Industrial
500 Kilowatts	Commercial/Industrial
1-Megawatt	Industrial/Power Plant
2-Megawatt	Industrial/Power Plant

The Feltenberger Pendulum is a platform technology that can be applied to many applications. Please visit the GEC website at www.gravityassistedpower.com and view the videos to see this technology in action.