



P.G. SOLAR GREENER LTD

Partnership Opportunity

P.G Solar Greener

P.G Solar Greener is a company developed a breakthrough innovative, patent protected solutions for the renewable energy industry.

Peter Graner the founder and CEO of P.G Solar is a professional engineer, Electric technician and Motorcycle mechanic, with more than 40 years of experience in the Design, Manufacture and Air automation consulter of customized equipment for: assembly machines, industrial heat transfer and generators.

Ultra-hybrid panels project on a building roof



P.G Solar Greener Technologies

1. Flywheel Engine Generating and Storing Energy

A Flywheel Engine with peripheral chambers fed by Multi-Stage Jets Boosters of:
Compressed Air, Steam, Compressed Water.

There is an option for Compressed Air combined with Hydrogen (a replacement for a conventional combustion engine currently available in the world)

2. Ultra Hybrid Bifacial PV & Residual Hot Water solar panel

Micro-Grid, coupled with Ultra Hybrid Bifacial Electric & Residual Hot Water solar panel (PVT), integrated with Energies and the Flywheel Engine Generator.

2 Stages Increased Efficiency

+15%-20%



Bifacial PV cooling
Increased
Electrical Power
Generation

+55%



Generating More Usable
Electricity & Hot Water on
the same platform
combine Hybrid A/C

COP 1.8
Coefficient Of
Mechanical Power



Generating PV Electricity & (+)
35% Residual Hot Water
Accumulate Electricity + Hot
Water/Air Hybrid Air "Battery"
Storage

RTE 88%
Mechanical Round Trip
Electricity Efficiency

How does it work?

**Air/Water/Steam/Hydrogen -Engine
Ultra High Efficiency Flywheel**

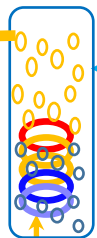


**Option; Air/Hydrogen
Expanding Chambers**

Pressurized
Air/Steam

**Geothermal
Steam & Pressure**

**Air/Water
Tank Heat
Exchanger**



Geothermal
Heat Recover

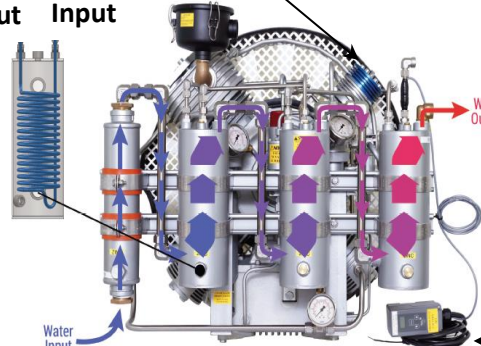
**Hybrid
Mechanical
Compressed Air
"Battery"
Storage**



**High/Medium
Pressure Air
Tanks Storage
(spring)**

Air Out
Air Input

**Hybrid Air Compressor
& (+) Residual/Heat
Recovery**
High or Low Pressure

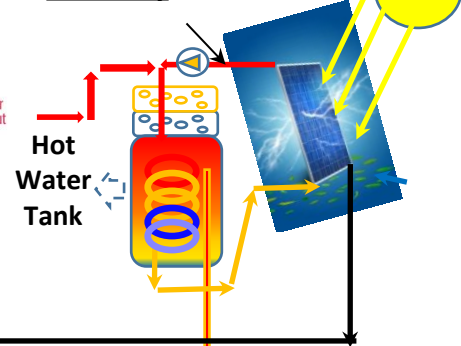


- 1 When the machine is running, water is pumped through the coolers.
- 2 The water coolers are used in place of the regular air cooling tubes.
- 3 The heated water can then be directed overboard.

**UPS Generating
Electricity & using
recovered heat for DHW
on same platform**

**Residual/
Heat
Recovery**

**Bifacial PV
Thermal
Energy**



**Accumulate
Solar Electricity**

**Elect AC
Day
Supply**

PG's Integrated Panels

- A breakthrough patented of Micro-Grid, coupled Solar PVT with Storage and Air/Water/Steam Electric generation.
- Ultra Hybrid Air/Hydrogen “Battery” Storage.
- same price **compared** to Lithium batteries storage at the **same volume**.

P.G Solar Greener Vs Lithium Batteries

	P.G Solar	Lithium Batteries
Storage long duration (above 24 hours)	YES	NO
Use Medium Pressure (Not Explosive)	YES	---
Uses standard & locally available materials & Maintenance	YES	NO
Safety (Flammable)	YES	NO
Renewable Energy Green	YES	NO
Hazardous waste <u>removal at END of LIFE</u>	NO	YES
Yearly Performance Degradation	0	2-3%
Life Expectancy	50+ Years	10-12 years

How can potential collaboration benefit?

- **New strategic markets** – Competitive edge in the urban environment.
- **Operation costs and efficiency** – Increased FlyWheel Engine (turbine) efficiency and reduced construction, operation, and maintenance costs.
- **Increased Storage** - Ability to Store Energy from the Steam/Low cost Electricity at night and low consumption periods, reuse energy with fast boost response.
- **Ability to replace Lithium batteries**, removing the need to replace batteries over time.

A Potential Energy Generation & Storage projects in Germany & Israel

- A project with Geothermal Energies in Germany
- combining geothermal energy with Flywheel Engine (turbines) to generate electricity. As well as EPC.
- **P.G Solar Greener** will bring its Hybrid Flywheel Engine generate electricity and Energy Storage & Hybrid PV Thermal Systems and technology knowledge.

Thank you!

Peter Graner

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