

Company Overview



# UNPLUGGING BLACKOUTS

February 2024

- In recent months, the company has carried out a process of updating the company's business strategy based on company data, market data and based on assumptions regarding the company's activities and the relevant market in which the company operates. The aforementioned information is based on the subjective assessment of the company and its consultants. It is based, inter alia, on the company's professional knowledge, existing information and current expectations and assessments, including in relation to future developments. The business strategy presented in this presentation is correct at the time of the presentation. It may change in the future, among other things, considering market conditions, the company's risk factors and the decisions of the company's board of directors.
  - This presentation does not constitute an offer to purchase the company's securities and/or an invitation to make offers for their purchase and does not constitute an "offer to the public" or "sale to the public" of any kind. This presentation does not intend to encompass or contain all the information that may be relevant for the purpose of making any decision regarding investment in the company's securities and in general. The presentation was made for a convenient and concise presentation, and it does not exhaust all the data about the company and its activities. It does not replace the need to review the reports that the company has published and will publish to the public according to law ("public information"). The information contained in this presentation is not complete and everything contained in it is subject to what is stated in public information. The information stated in this presentation is not a substitute for public information. Do not rely on this presentation and do not consider this presentation as a representation or commitment of any kind. This includes not the completeness or accuracy of the information contained therein. The presentation may include information shown in a different way from the way in which the public information has been presented up to now, the presentation may include data presented in a manner and/or characterization and/or editing and/or segmentation different from those previously provided by the company. The presentation presents a set of data (such as data that was presented in the presentation and has not yet been included in the public information or has not yet been presented in the manner presented in said presentation, and which are correct to the best of the company's estimation as of the time of their presentation).
  - In this presentation, the company included, among other things, forward-looking information, as defined in the Securities Law, 1968. Such information includes, among other things, forecasts, goals, assessments and estimates, targets, business strategy, both regarding the company's activities and the markets in which the company operates, along with information presented in the form of illustrations and/or graphs and/or tables, which refer to future events and/or matters whose realization is uncertain and may be affected by factors, but in a substantial way, which cannot be estimated in advance or are beyond the company's control. This presentation is based on estimates and assumptions as of the time of the presentation, among others, made by the company's management. These estimates and assumptions, although the company believes they are reasonable, are uncertain and by their nature are based on subjective estimates only. The realization or non-realization of the forward-looking information will be affected, among other things, by various factors detailed in the prospectus, including risk factors that characterize the company's activities, including in light of the nature of the company as a research and development company and the lack of certainty about the success of completing the development of its products and introducing them to the relevant markets, decisions of third parties, such as authorities as well as developments in the economic environment and external factors that affect the company's activities, and which cannot be estimated in advance or are not under the company's control.
  - Also, forward-looking forecasts and estimates are based on data and information available to the company at the time of publication of the presentation and the company does not undertake or is obligated to update or change any such forecast and/or estimate to reflect events or circumstances that will apply after the date of the presentation.
  - This presentation includes mention of external publications, which have not been independently checked by the company and the company is not responsible for their correctness. This is not an opinion but general and non-binding information. Nothing in this presentation is intended to constitute legal, tax or business advice. It is not a substitute for consulting with appropriate advisors in these areas. Every potential investor should seek advice and guidance in connection with potential investments, including tax advice considering his data and situation.
  - It will be clarified that the company does not undertake to update this presentation.
- \*The data presented in slides 22 and 23 is a visualization of data that was reported to the public on the TASE website by the company.

## THE USA TODAY

**344**

Blackouts in 2023

**7963**

Hours with no power during 2023

**60%**

Increase in power outages frequency over the past decade

**\$22B**

Grid infrastructure investments in 2022 alone, just in the U.S.

**The US national grid can no longer meet the rising power demand.**

# 11-Million+

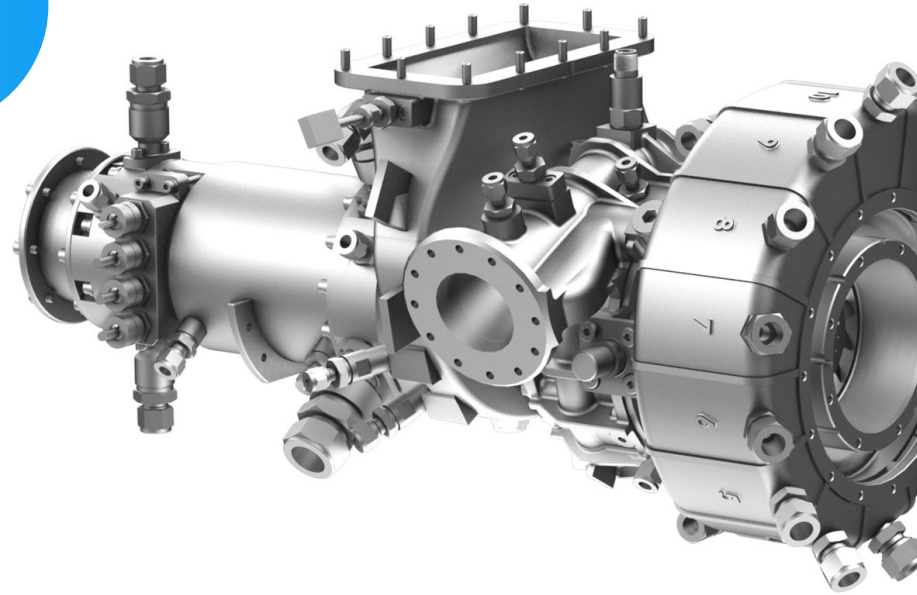


**EVs will be on the US  
roads by 2035**

Wood mackenzie

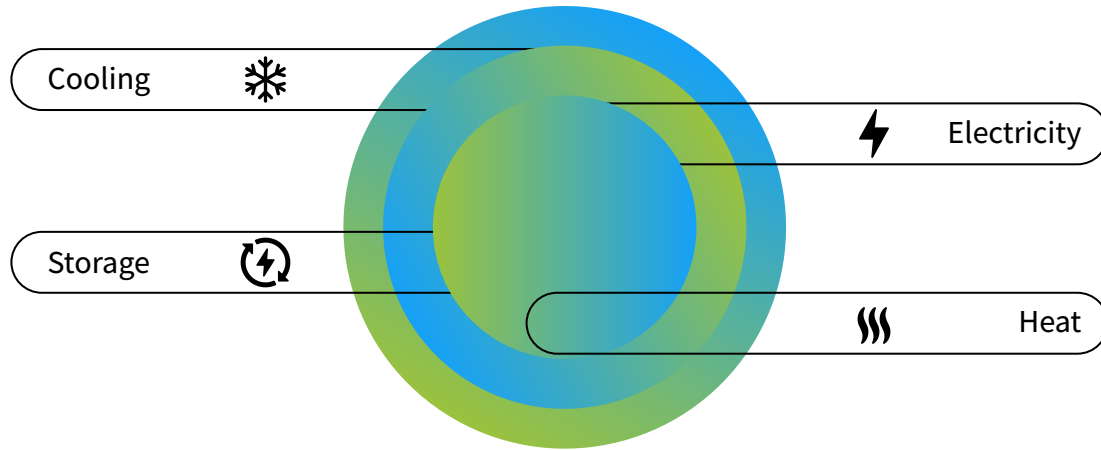
# TURBOGEN'S SOLUTION

**On Site Micro-grid Energy  
generation & Storage**



# TURBOGEN

## ENERGY PRODUCTION & STORAGE



**Hybrid - Multi fuel**  
**NG, Hydrogen Blending, Biogas, Diesel etc.**

# WHY IS ELECTRICITY SO EXPENSIVE?

**\$13.3B**

Grid congestion\* costs losses

**66%**

Energy waste from producer to consumer

→ All costs are covered by the end customer

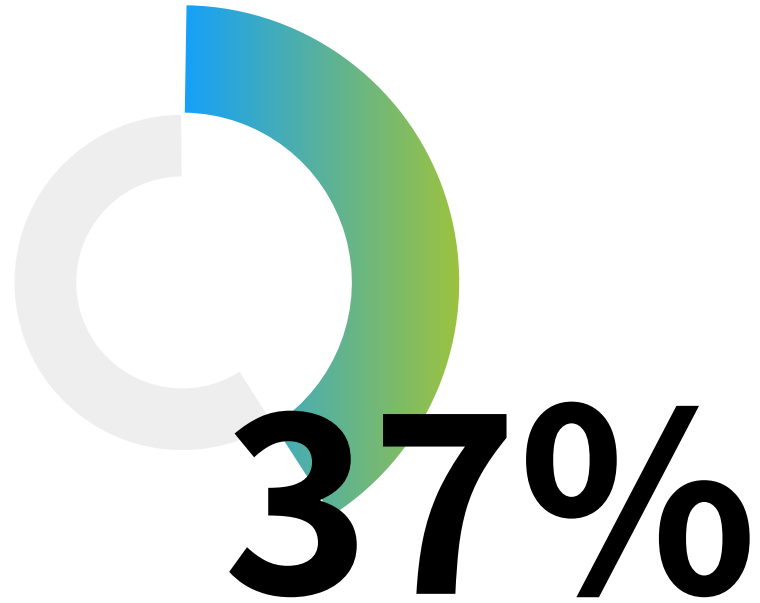
\*a lack of transmission line capacity to deliver electricity without exceeding thermal, voltage and stability limits designed to ensure reliability. Constraints can lead to inefficiencies.

# BUILDINGS CONSUME 37% OF THE TOTAL ENERGY PRODUCED.

BUILDINGS RIGHT NOW



WHERE BUILDINGS NEED TO BE





# CHALLENGES IN IMPROVING BUILDING ENERGY EFFICIENCY



Insufficient grid capabilities



Power Outages



High Energy Cost



EV Charging



Decarbonization



Energy Efficiency

Transitioning to green energy and reducing emissions as a means to avoiding costly fines

## THE ST. JAMES' TOWER

415 East 54th Street, New York, NY, 10022

“We elected to go with removing both boilers, then adding one new boiler and a cogen system,” Epstein says, referring to cogeneration, or combined heat and power, which turns waste heat into electricity and useful heat — while giving a building’s energy efficiency a boost.

“We’re going to reduce their natural gas consumption by 20 to 30%, maybe more, which will reduce their carbon emissions tremendously.”

February 8<sup>th</sup> 2023



# BIDEN HARRIS PROGRAM

# \$8.5

**Billion USD**

**Home clean Energy Rebates 8 Years program  
(July 27th, 2023 - 2031)**



U.S. DEPARTMENT OF

**ENERGY**

Office of  
Science



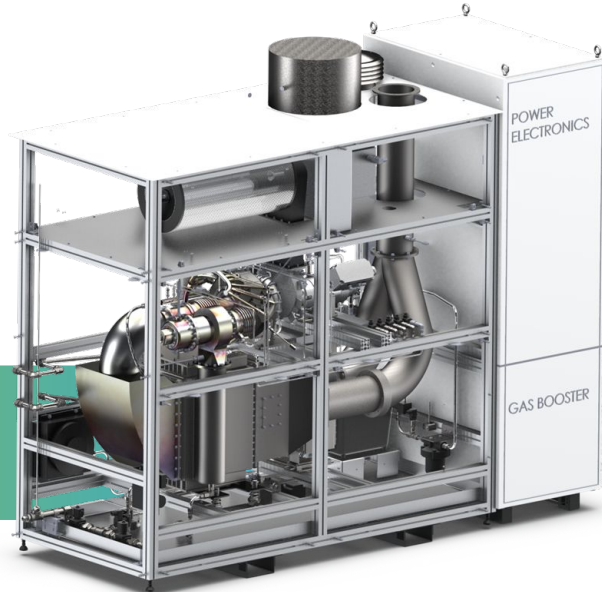
Installation of Combined Heat and Power System (CHP) , not to exceed peak electrical production at 300kW.

# IMPROVING ENERGY EFFICIENCY IN BUILDINGS

**5** year



Between overhaul



Small footprint

Low Weight

Multi-fuel

Zero Emission (on Hydrogen)

40 KW & 120 KW Micro-Turbines CHPs

**Can be Clustered for higher power demand**

# MICROTURBINES FOR ONSITE ENERGY

Innovative sub-systems for easy access and maintenance

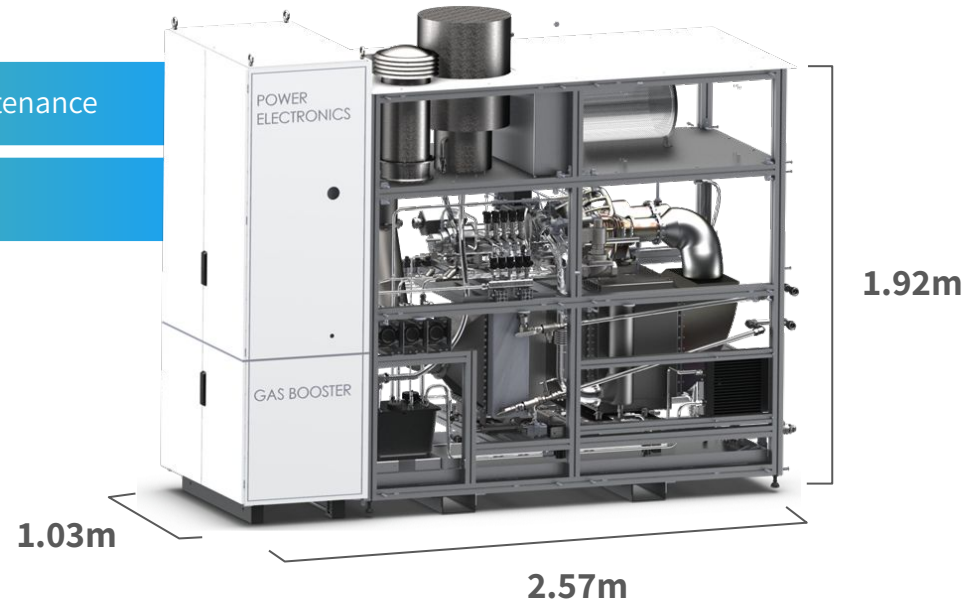
Short downtime for maintenance

## TG-40

40Kw Electricity & 68 Kw Heat

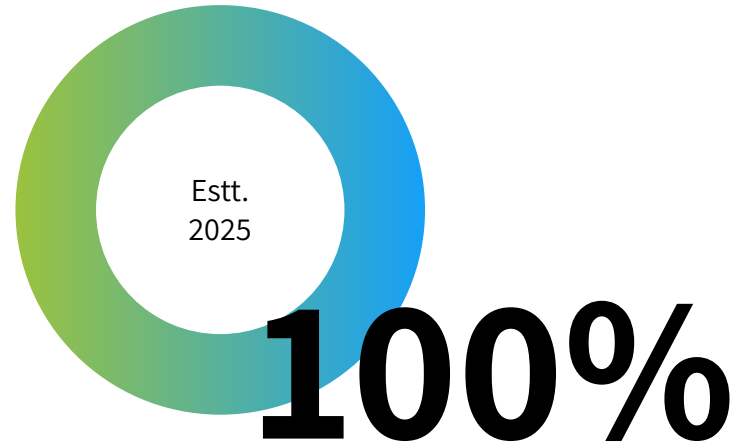
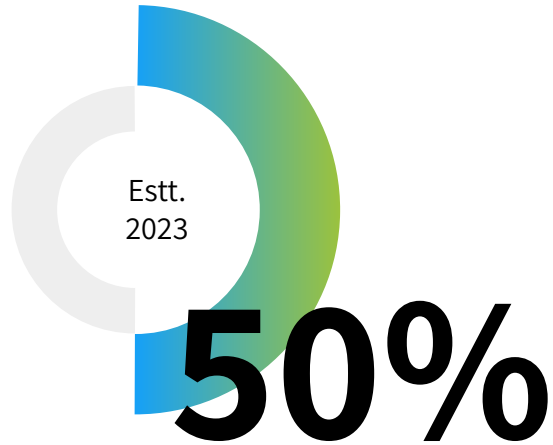
## TG-120 (Dev.)

120Kw Electricity & 180 Kw Heat



# HYDROGEN READY

→ Zero emission ESG compliant





# BEMS



**Building Energy  
Management System**



# BEMS

## Cloud based energy management

TurboGen's Energy Management System (BEMS) will enable managing energy produced and stored on site parallel to the grid and smart optimization of costs.



\*see forward looking information disclaimer





# ESCO Partners

(energy service companies)

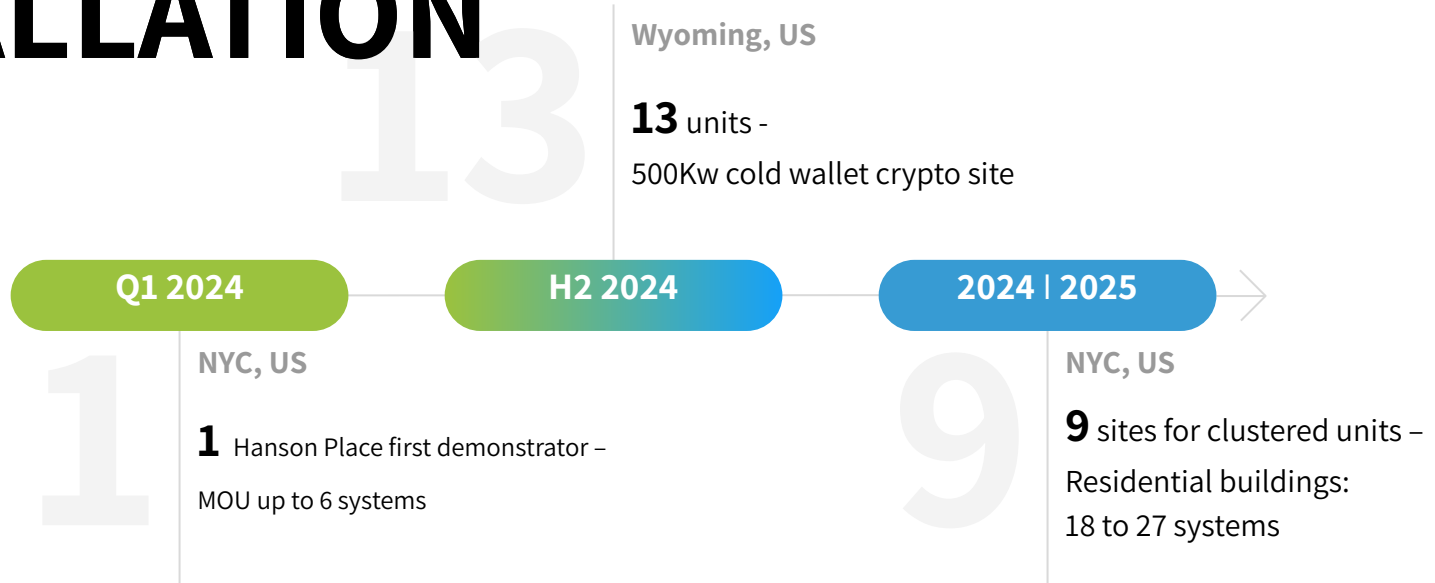


# 1 Hanson Place -

Installation →



# FUTURE INSTALLATION



# POTENTIAL RESIDENTIAL MARKET

# \$16B

517,000 Potential Residential Sites (810 MW)

→ Based on DOE CHP Report



Multi-family residences

		Potential Market						
State/ Building size (units)	50-99	100-199	200-299	300-499	500-799	<800	Total	
<b>Total buildings</b>	547	281,359	106,451	76,158	30,554	22,449	517,517	

# POTENTIAL RESIDENTIAL MARKET



Office buildings



Nursing homes



Hospitals



Hotels

# \$30B

Market Across **264,000** Relevant Sites

→ Based on DOE CHP Report

	Turbogen Market		1-5 MW	5-20 MW	>20 MW	Total
	50 - 500kW	0.5Kw - 1MW				
Total sites	220,459	44,140	23,305	3,197	800	291,902

# BUSINESS MODEL – TG40

Yearly economics:		USD
Yearly Income	87,716	
Yearly Costs:	One time	Recurring
TG40 Cost	110,000	
Installation	92,000	
EMS		7,000
Gas Expenses		32,433
Service		7,008
	202,000	46,441
Incentives/Rebates	TBD	
	Net income after recurring	41,276
	<b>ROI</b>	<b>4.9</b>

**USD/KW 0.22**

Electricity

**MCF/\$10.86**

Gas

# BUSINESS MODEL – TG120

Yearly economics:		USD
Yearly Income	225,699	
Yearly Costs:	One time	Recurring
TG120 Cost	168,000	
Installation	186,000	
EMS		7,000
Gas Expenses		97,299
Service		21,024
	354,000	125,323
Incentives/Rebates	<b>TBD</b>	
	Net income after recurring	100,376
	<b>ROI</b>	<b>3.5</b>

**USD/KW 0.22**

Electricity

**MCF/\$10.86**

Gas

# ABOUT US

→ Integrated technologies for the simultaneous, on-site production of electricity and heat



**90%** CHP method overall efficiency

## 25

Employees: 80% R&D

## 5

Patents

## 11/2021

TASE-Ticket: TURB

## 2018

Year Established

## 40kw to 1000kw

Target Market



# LEADERSHIP



**Yaron Gilboa**  
CEO



**Amit Ferber**  
COO



**Limor Domnitz  
Gishri**  
CFO



**Ziv Nir**  
EVP Business  
Development



**Dan Katz**  
VP R&D  
Manufacturing



**Sigal  
Berliner-Levinson**  
General Counsel



**Alex Katz**  
Strategic Advisor -  
US

# BOARD OF DIRECTORS



**Tzachi Even Ari**  
Chairman Of The  
Board



**Dov Fridman**  
Director



**David Derei**  
Director



**Eli Zucker**  
Director



**Ethy Levy**  
Director



**Idan Ben Shitrit**  
Director



**Ziv Gafni**  
Director

# STRATEGIC PARTNERSHIPS or M&A

We plan to provide the technology and IP to large U.S. energy vendors who will undertake manufacturing, marketing, deployments and operations of Energy-as-a-Service based on TurboGen

\* See disclaimer at the top of the presentation

→ 2024

Up to \_\_\_\_\_  
**10 POC projects**

\* See disclaimer at the top of the presentation

→ 2027

Close a \_\_\_\_\_  
**U.S. Energy  
strategic partner**

\* See disclaimer at the top of the presentation

# FINANCIAL MODEL

example for potential partners

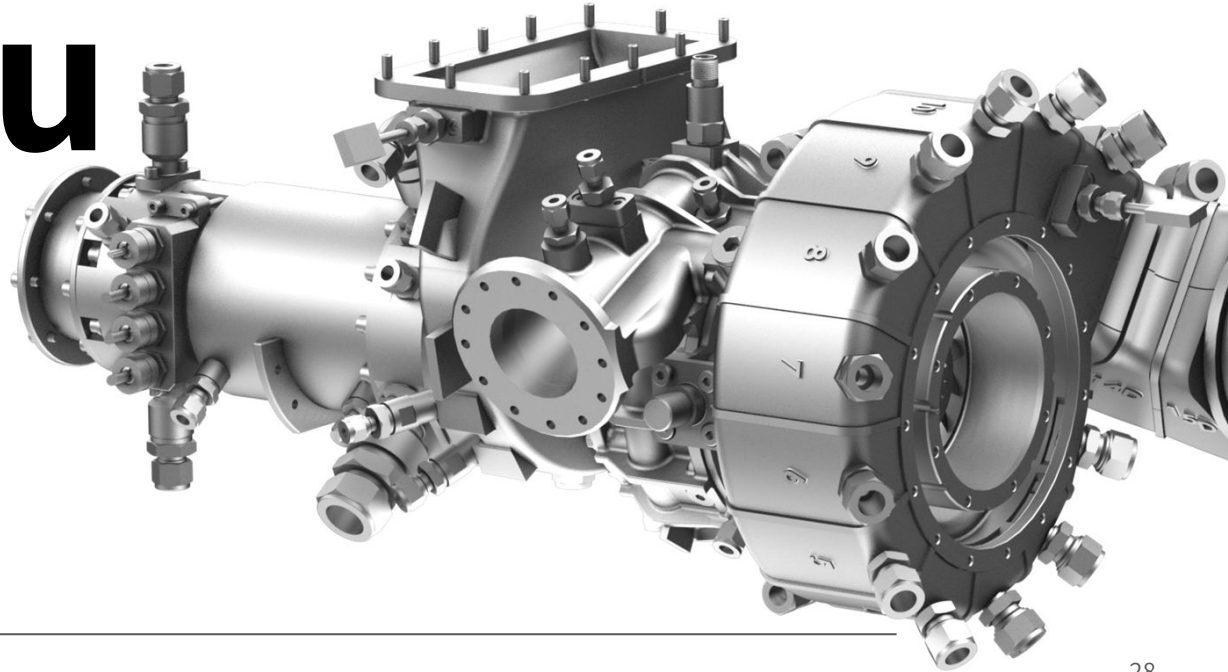
Estimated ROI ~ 4 Years

\*see forward looking information disclaimer

K USD	Reference Budget				
	Year 1	Year 2	Year 3	Year 4	Year 5
Total Revenues					
COGS	119,439	418,038	1,194,393	1,741,119	3,482,238
Gross Profit	<b>32,383</b>	<b>113,342</b>	<b>323,833</b>	<b>647,667</b>	<b>1,295,334</b>
OPEX:					
R&D	2,986	8,361	23,888	47,776	95,551
S&M	8,361	29,263	83,608	167,215	334,430
G&A	9,555	33,443	95,551	191,103	382,206
Total OPEX	<b>20,902</b>	<b>71,066</b>	<b>203,047</b>	<b>406,094</b>	<b>812,187</b>
Operational Profit	<b>11,481</b>	<b>42,275</b>	<b>120,787</b>	<b>241,573</b>	<b>438,146</b>
Depreciation EBITDA	20,735 <b>32,217</b>	72,574 <b>114,849</b>	207,354 <b>328,140</b>	414,707 <b>656,280</b>	829,414 <b>1,312,561</b>
Potential Royalties Revenues	27%	27%	27%	27%	27%
	<b>5,972</b>	<b>20,902</b>	<b>59,720</b>	<b>119,439</b>	<b>238,879</b>

# Thank You

Power. Perfected.



## Forward looking Information Disclaimer

Projections and Budget: Much of the above content, including but not limited to projections and the company's projected expense budget constitutes "forward-looking information", as defined in the Securities Law, and is based on information and estimates that exist in the company as of this date and is based, among other things, on economic calculations in relation to the cost of installing up to 10 systems as part of the feasibility procedure (for example, cost of procurement required for the machines, installation, operation and service), the continuation of the development cost of 40TG and 120TG, as well as the EMS system and the development of the adaptations required to work on hydrogen, including the scope of the operational expenses required for the development of the above, including 21. In accordance with the company's assessment of the need for "A. Required, procurement of materials and subcontractors based on the company's experience, price offers received for the development activities, evaluation of overheads and expenses required to support the samples, sample costs based on procurement, operation and service costs in light of information available to the company, and in addition, And in addition, assumptions regarding macroeconomic data and other external factors, the essence of which is not under the control of the company and there is no certainty that it will be realized or may be realized in a different way, either due to the aforementioned or due to the risk factors in the company's activity detailed in Section 33 of Chapter A of the periodic report.

Financial Model: It will be clarified that the above business model demonstrates the results of a possible business activity, in an energy-as-a-service model, for a potential strategic partner in the energy sector or for a company after its merger with a significant partner in the US (as soon as the aforementioned contract/merger is implemented). The model is conditional on the company completing the feasibility and development phase of the 120TG system and giving the raising of the required capital. Also, it will be clarified that the royalty line in the above slides reflects the company's assessment in connection with the rate of royalties from expected revenues (to the extent of 5%) on the basis accepted in contracts of this type in the American market, and this is as much as the model of the contract between the company and the partner will be based on an agreement according to which the company will be entitled to the payment of royalties for the potential partner's use of its technology.

The example above constitutes "forward-looking information", as defined in the Securities Law, and is only preliminary, and is based on estimates that exist in the company as of the date and information open to the public that existed prior to the date of this publication, including, among other things, an economic model in relation to the possible revenues that Based on the company's estimates in connection with the prices of electricity, gas and thermal energy in the USA (according to recent publications in the USA), the scope of the potential market in the USA (based on the DOE's CHP report), the rate of progress of penetration into the aforementioned market, the activity of the systems at output complete, the duration of the life of the systems, an estimate of costs based on existing public

Information, as well as acceptable estimates based on public information regarding the maintenance cost of the systems to be marketed, the scope of operating expenses is based on the aforementioned scope of expenses of public companies in a field of activity and of similar magnitude to the activity of the significant partner. Assumptions regarding macroeconomic data and other external factors, as well as additional assumptions, forecasts and estimates, the essence of which is not under the control of the company and there is no certainty that it will be realized or may be realized in a different way, either due to the aforementioned or due to the risk factors in the company's activity detailed in section 33 of chapter A of the periodic report.

# REFERENCES\*

## On the importance of micro-grids to the future of U.S. power management

- \* "Microgrids are vital to enhancing the resilience and reliability of the country's power system. Expanding microgrid deployment facilitates greater integration of clean energy and positions communities to better withstand extreme weather events." (March 2022 DOE Report "Energy Sector Cybersecurity Preparedness Report")
- \* "It's inevitable that microgrids will become a larger part of the power mix as pressures mount on the conventional grid...They help cut greenhouse gas emissions and make systems more resilient against disasters." (Claire Curry, BloombergNEF head of energy storage, June 2022)
- \* "Driven by the need for greater resilience, microgrids represent an important segment of the overall distributed energy resource opportunity... We see this area growing significantly, especially in certain geographies." (Ameresco VP Mark Feasel, Microgrid Knowledge Annual Survey 2021)
- \* "The case for microgrids becomes more economically compelling as the frequency of extreme weather events increases...Microgrids can play an integral role in enabling communities to maintain critical electricity services during power outages." (Berkeley Lab report "The Rise of Microgrids", July 2022)
- \* So in summary, experts emphasize that microgrids are becoming increasingly vital for clean energy integration, resilience against extreme weather and outages, and supporting the overall electricity grid as challenges grow. Their flexibility makes them well-suited to help adapt the power system to 21st century needs.

## On micro-grids generators potential market size

- \* "The U.S. market for grid-connected microgrids could reach installed capacity between 14 to 27 gigawatts (GW), according to Navigant Research. Most of this capacity comes in the form of gas generators." (GreenTech Media, 2019)
  - \* "Wood Mackenzie expects behind-the-meter microgrid capacity in the U.S. to reach 11.2 GW by 2028, a nearly threefold increase from current installations." (Microgrid Knowledge, 2021)
  - \* "Generally, we estimate the market potential for microgrids that can operate independent of the macro grid to be 200 GW by 2030." (Guidehouse Insights, 2022)
  - \* "Driven by confluence of factors, the number of microgrid projects in North America could top 1,000 annually, up from around 130 in 2020." (Navigant Research, 2021)
  - \* "Universities, military bases, and municipalities represent a nearly 5 GW market for microgrids just in the US." (BloombergNEF)
- >> *So while total site estimates are hard to pin down, projections suggest the potential capacity for grid-connected microgrids in the US ranges from 10-200+ GW over the next decade, across private, public, and utility projects. Key takeaway is massive expected growth.*

## On micro-grids potential cost savings vs. legacy grid usage costs

- \* A 2022 Rocky Mountain Institute report estimated that distributed energy resources like microgrids could help avoid \$100-\$250 billion in cumulative grid investment costs through 2050. They enable targeted deployment where grid upgrades are most needed
- \* A 2021 study by Schneider Electric found an average 20% reduction in energy costs for microgrid customers across a variety of industries including commercial real estate, manufacturing, retail, and others.
- \* Research by Berkeley Lab in 2022 found a central microgrid system for a hypothetical municipality could provide electricity at a levelized cost 8-50% lower than existing utility retail rates.
- \* Navigant estimates microgrids can reduce outage costs by 85% for critical infrastructure sites. They calculated \$50 billion in outage costs could be avoided annually if microgrids were widely adopted.
- \* For utilities, analysis by ICF has found targeted deployment of microgrids to defer or replace certain grid investments can lower costs by 25-30% in many cases.
- \* A 2022 GTM Research report estimated energy cost savings from delivered electricity of up to 5-20% for many behind-the-meter microgrids.
- \* In summary, studies consistently show microgrids can reduce electricity costs compared to alternatives, with savings ranging from 5-50% based on the end user's needs and application. The modular nature provides efficiency compared to centralized infrastructure.

## On EV sales growth:

- \* "Annual sales of plug-in electric vehicles in the United States from 2011 to 2021." Statista, 2022. On electric grid infrastructure:
- \* "Transmission Investment Remains Strong in 2020." Edison Electric Institute, 2021. On growth in public EV charging:
- \* "Number of electric vehicle charging stations in the United States from 2011 to 2021." Statista, 2022.

## On EV to charging port ratio:

- \* Kane, Mark. "EV Adoption growing faster than public charging infrastructure." InsideEVs, 2021. On needed grid upgrades:
- \* Pyper, Julia. "US Needs \$2 Trillion in Grid Upgrades to Enable Widespread Electrification, Report Finds." Greentech Media, 2021.

## Additional potential partners and M&A targets for TurboGen

- \* GE - Industry leader in microgrid controls, gas turbines, and integration software. Key partners include Caterpillar, Washington Gas, and Duke Energy. Major projects include Houston Methodist Hospital microgrid
- \* Schneider Electric - Major microgrid EPC and operations provider, with distributed energy resource management software. Customers include JFK Airport, Kaiser Permanente, Sierra Nevada Brewery.
- \* ABB - Focuses on design and enabling technologies like converters and battery systems for microgrids globally. Collaboration with Microsoft on advanced control technologies using AI.
- \* Siemens - Provides full spectrum of microgrid offerings from gas turbines to automation equipment. Recent microgrid projects with NYPA, WSU, and Twin Creeks.
- \* S&C Electric - Specializes in medium voltage switchgear essential for microgrid connectivity and islanding capability. supplied equipment for recent NY prize-winning community microgrids.
- \* PowerSecure - Designs and deploys microgrid systems using a combination of solar, storage, and natural gas generators. Customers include Hartsfield-Jackson Airport and multiple utilities.
- \* Homer Energy - Leading developer of microgrid modeling and optimization software used by developers, utilities, and researchers globally. Acquired by UL in 2019.
- \* AlphaStructure - Joint venture between Carlyle Group & Schneider Electric focusing on microgrids-as-a-service for C&I customers using modular Energy Center approach.
- \* Engie North America - EPC provider building gas, hybrid, and solar-plus-storage microgrids. Also offers financing and long-term operation. Recent work includes Cox Communications and AEP.
- \* Power Analytics - Provides real-time monitoring, analytics, and control software for microgrid optimization and management. Funded by Bill Gates, Ingersoll Rand, and others.

## EV Electricity Demand:

- \* 2011 figure based on EV sales data from IEA Global EV Outlook 2020
- \* 2021 figure based on EV stock estimate from IEA Global EV Outlook 2022
- \* 2030 projection based on BNEF Electric Vehicle Outlook 2022
- \* Power Generation Capacity
- \* 2011 and 2021 figures from EIA Electric Power Annual table 4.3

## Additional References

- \* DOE Opens Applications To Implement \$8.5 Billion For Home Clean Energy Rebates (July 27th, 2023)
- \* Reduction of the upfront cost of whole-home energy efficiency upgrades in multi-family homes.
- \* Installation of Combined Heat and Power System (CHP), systems sized appropriately for the buildings in which they are located, not to exceed peak electrical production at 300kW.
- \* <https://www.energy.gov/articles/biden-harris-administration-opens-applications-states-and-territories-implement-85-billion>
- \* The data presented in slides 22 and 23 is a visualization of data that was reported to the public on the TASE website by the company.

