UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of report (Date of earliest event reported): January 7, 2019 (January 8, 2019)



TECOGEN INC.

(Exact Name of Registrant as Specified in Charter)

Delaware (State or Other Jurisdiction of Incorporation)

001-36103 (Commission File Number) 04-3536131

(IRS Employer Identification No.)

45 First Avenue Waltham, Massachusetts (Address of Principal Executive Offices)

02451

(Zip Code)

(781) 622-1120 (Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:
☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
□ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933

(§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter). Emerging growth company ☑

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. \Box

Item 7.01 Regulation FD Disclosure

On January 8, 2019, Tecogen Inc. (the "Corporation") will share with investors and potential investors in the Corporation the attached slide presentations titled "3rd Quarter Investor Presentation," and "Emerging Opportunities for Growth," as well as the attached paper titled "Tecogen's Emerging Opportunities for Growth: Cogeneration and Chilling, Indoor Cultivation, and Vehicle Emissions Control." These materials are filed as Exhibits 99.01, 99.02, and 99.03, respectively, to this Current Report on Form 8-K.

The information contained in this item 7.01 and Exhibits 99.01, 99.02, and 99.03 shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

The following exhibits relating to Item 7.01 shall be deemed furnished, and not filed:

Exhibit	Description
99.01	Presentation titled "3rd Quarter Investor
	Presentation"
99.02	Presentation titled "Emerging Opportunities for
	Growth"
99.03	Paper dated January 7, 2019 titled "Tecogen's Emerging Opportunities for Growth: Cogeneration
	and Chilling, Indoor Cultivation, and Vehicle Emissions Control"

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Company has duly caused this report to be signed on its behalf by the undersigned, hereunto duly authorized.

TECOGEN INC.

By: /s/ Bonnie Brown

January 7, 2019

Bonnie Brown, Principal Financial & Accounting Officer



Safe Harbor Statement



This presentation and accompanying documents contain "forward-looking statements" which may describe strategies, goals, outlooks or other non-historical matters, or projected revenues, income, returns or other financial measures, that may include words such as "believe," "expect," "anticipate," "intend," "plan," "estimate," "project," "target," "potential," "will," "should," "could," "likely," or "may" and similar expressions intended to identify forward-looking statements. These statements are only predictions and involve known and unknown risks, uncertainties, and other factors that may cause our actual results to differ materially from those expressed or implied by such forward-looking statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to update or revise any forward-looking statements.

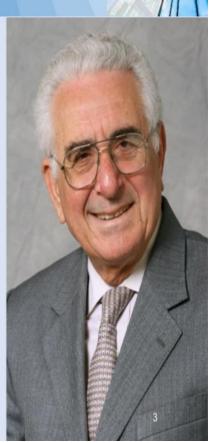
In addition to those factors described in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q under "Risk Factors", among the factors that could cause actual results to differ materially from past and projected future results are the following: fluctuations in demand for our products and services, competing technological developments, issues relating to research and development, the availability of incentives, rebates, and tax benefits relating to our products and services, changes in the regulatory environment relating to our products and services, integration of acquired business operations, and the ability to obtain financing on favorable terms to fund existing operations and anticipated growth.

In addition to GAAP financial measures, this presentation includes certain non-GAAP financial measures, including adjusted EBITDA which excludes certain expenses as described in the presentation. We use Adjusted EBITDA as an internal measure of business operating performance and believe that the presentation of non-GAAP financial measures provides a meaningful perspective of the underlying operating performance of our current business and enables investors to better understand and evaluate our historical and prospective operating performance by eliminating items that vary from period to period without correlation to our core operating performance and highlights trends in our business that may not otherwise be apparent when relying solely on GAAP financial measures.

John Hatsopoulos Co-Founder, Chairman Emeritus

Tecogen:

- Retired President and Vice Chairman of the board of directors of Thermo Electron Corp. (now Thermo Fisher Scientific)
- Developed Thermo's famous 'spinout' strategy, resulting in the spinout of 24 public companies from the parent
- Raised nearly \$5B from 1990 1998 as Thermo's CFO for the parent company and it's various spinout subsidiaries
- Soard of Directors of the American Stock Exchange from 1994 – 2000
- Former "Member of the Corporation" of Northeastern University



Benjamin Locke CEO, Director





- Joined company as General Manager in 2013
- Director of Business Development at Metabolix from 2001 to 2013
- Previously served as Vice President of Research at Innovative Imaging Systems
- Led Tecogen to full year profitability in 2017
- Enhanced Tecogen Product Offerings
- Expanded addressable markets for Tecogen systems
- Developing strategic partnerships and acquisitions for future growth

Tecogen Advanced Modular Energy Systems



Heat, Power, and/or Cooling that is:

- Cheaper
 Industry leading efficiency and reduced exposure to expensive electricity
- Cleaner
 Proprietary near-zero emissions technology, GHG reductions
- More reliable Real-time monitoring, blackout protection, and improved grid resiliency

All of Tecogen's equipment is powered by efficient natural gas equipped with Tecogen's patented Ultera Emission Control

Clean Energy Products















Emissions
Reduction
Criteria Pollutant Elimination



Clean Energy and Resiliency From Central Electric Utility

Energy Production On-site utility



Sustainable Competitive Advantage



Proprietary and patented technology

- Ultera Emission control
- Inverter microgrid architecture
- Proprietary PMG technology
- Natural gas engine optimization

In-house engineering and installation

Fully integrated on-site service and maintenance

Creates value proposition for customers that drives

- ✓ Revenue Growth
- ✓ Robust Gross Margins
- ✓ Repeat Business





Born to Innovate





2013: Patent awarded for Ultera emissions technology 2014: IPO and listing on NASDAQ: TGEN 2016: Roll out of dramatically upgraded InVerde e+

2017: Acquisition of American DG Energy

2018: ETL certification to ANSI/UL 1741 SA for smart inverters



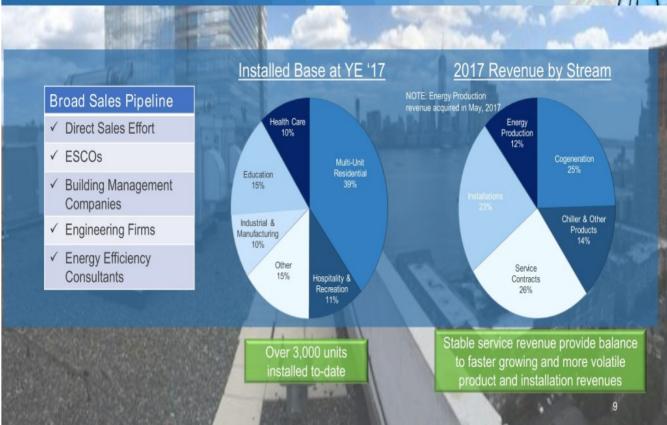
2000: Investor group led by John and George Hatsopoulos acquires Tecogen 2003: First (and only) engine driven CHP module to obtain full California Electric Rule 21 Certification

2008: Roll out of original InVerde cogeneration unit

Originally founded as an energy technology R&D center within Thermo Electron Corp. (now Thermo Fisher Scientific)

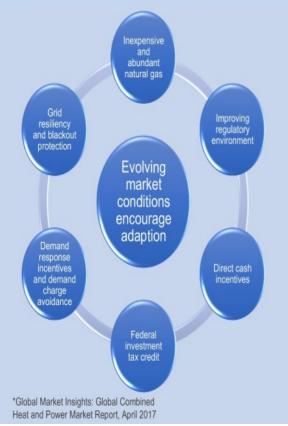
Diverse Core Customer Base





Substantial Core Business Growth Opportunities





\$40+ billion market for clean, reliable CHP systems







Cogeneration (CHP): Electricity and Heat



Modular and scalable

- Best in class electrical efficiency
- ₺ 60-125 kW, scalable to 1MW+
- Remote monitoring



- √ Proprietary inverter
- ✓ CERTS certified microgrid system
- ✓ Blackout protection

Ideal for

- Locations with many beds and showers: hotels, dormitories, apartment buildings, prisons
- Light manufacturing and industrial facilities with hot water requirements
- · Fitness centers



Chillers (Mechanical CHP): Heating and Cooling



The only natural gas engine driven chiller on the market

- 30-60% cheaper to operate than equivalent electric chillers
- 50-400 tons of cooling capacity
- "Free" waste heat and clean carbon dioxide emissions stream may be repurposed for indoor agriculture applications
- Eligible for similar incentives as CHP
- Sales cycle more transactional and predictable



Ideal for

- Hospitals
- · Indoor agriculture
- Light manufacturing and industrial facilities with both cooling and heating requirements
- Sports facilities: Swimming pools, ice rinks



Ultera Emissions Eliminates Criteria Pollutants





Non-invasive emissions system

- Reduces criteria pollutants (NOx, NMOG, CO) to <u>near zero</u> fuel-cell equivalent levels
- Patent protected and insured
- Installed on virtually all Tecogen equipment
- Simple retrofit to existing engines with no performance loss
- Proven in many engine systems: Tecogen, Ford, GM, Caterpillar, Generac, etc.

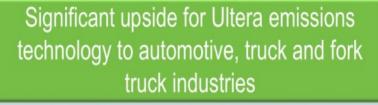
South Coast Air Quality Management District (SCAQMD) of southern California has reset its Best Available Control Technology (BACT) standard for non-emergency engine-driven generators to a level that rich-burn engines can only achieve when equipped with Ultera

Ultera Emissions Technology Expansion into Vehicle Markets





















Sustained Positive Financial Results



- 3Q '18 Revenues of \$7.9 million
- T4Q revenue of \$37 million
- Revenue growth on T4Q basis year over year of 23%
- T4Q gross profit of \$13.7 million
- Sustained step change to profitability originally achieved in 3Q'16
- T4Q Adjusted EBITDA* of \$248K for 3Q'18
- ADG Energy production revenue contributed \$616K to Gross Profit

*Adjusted EBITDA is defined as net income (loss) attributable to Tecogen Inc., adjusted for interest, depreciation and amortization, unrealized gain or loss on securities, stock based compensation expense, and one-time merger related expenses.



3Q'18 Summary of Results



\$ in thousands	3Q'18	3Q'17	YoY Increase (Decrease)		Comments
Revenue					
Products	\$ 2,765,094	\$ 2,425,616	\$ 339,478	14.0%	Highlighted by chiller sales
Service	3,713,770	4,519,467	(805,697)	-17.8%	Decrease in turnkey installations
Energy Production	1,459,820	1,556,115	(96,295)	-6.2%	
Total Revenue	7,938,684	8,501,198	(562,514)	-9.7%	
Gross Profit					
Products	\$ 1,069,747	\$ 887,101	\$ 182,646		Additional gross profit from increased product sales
Service	1,196,560	1,538,013	(341,453)		
Energy Production	616,791	832,917	(216,126)		Energy production was higher than expected in 3Q'17
Total Gross Profit	2,883,098	3,258,031	(374,933)	-11.5%	
Gross Margin: %					
Products	38.7%	36.6%	2.1%		Stronger margins seen in both cogen and chiller sales
Service	32.2%	34.0%	-1.8%		Installation business brings tighter profit than contract maintenance
Energy Production	42.3%	53.5%	-11.3%		Energy production margin is in line with long term expectations
Total Gross Margin	36.3%	38.3%	-2.0%		
Operating Expenses		A2-9 KT-28	\sim		
General & administrative	\$ 2,582,600	\$ 2,427,352	\$ 155,248	1	Merger related expenses accounts for about half of this increase
Selling	581,716	503,415	78,301)	Additional selling efforts
Research and development	281,094	241,725	39,369		R&D activities in connection with the forklift project
Total Operating Expenses	3,445,410	3,172,492	272,918	8.6%	Additional R&D and selling expenses account for some of this difference
Gain (loss) on marketable securities	19,681	-	19,681		
Adjusted EBITDA (see reconciliation)	\$ (258,655)	\$ 295,755	\$(554,410)		See detailed reconciliation

Strong Q3 product revenue growth

Consistently strong gross margin

Investing in our future

Contact Information





Energy Efficiency Reimagined

Company Information

Tecogen, Inc. 45 First Ave Waltham, MA 02451 NASDAQ: TGEN

www.tecogen.com

Contact

Benjamin Locke, CEO 781.466.6402 Benjamin.Locke@Tecogen.com

John Hatsopoulos, Chairman Emeritus 781.622.1120 John.Hatsopoulos@Tecogen.com

Appendix



- Management team
- Board of Directors
- Detailed financial information
- Cogeneration InVerde e+ data
- Cogeneration savings case study
- ☼ Tecochill chiller data
- Indoor agriculture
- 3 Ilios water heater data
- Ultera emission technology diagram
- Emission reduction comparison chart
- Standby generator emissions test results
- AVL car emissions test results
- Fork truck emissions test results

Tecogen Inc Company Information				
NASDAQ Ticker	TGEN			
Recent Stock Price	~\$3.85/sh			
52-week Range	\$2.30 - \$4.00/sh			
Shares Outstanding (06/30/18)	24.82 million			
Market Capitalization	~\$96 million			
Ownership of Directors, Officers, and their family trusts (06/30/18)	19.6%			
Total Assets (06/30/18)	\$51.5 million			
Membership: Russell Microcap® Index				

Management Team



Benjamin Locke

Chief Executive Officer

- Joined company as general manager in 2013
- Director of Business
 Development at Metabolix
 from 2001 to 2013
- Previously served as Vice President of Research at Innovative Imaging Systems
- Responsible for Tecogen growth and profitability

Robert Panora

President, COO

- General Manager of Tecogen's product group since 1990
- Manager of Product Development, Engineering, and Operations since 1984

Bonnie Brown

Chief Accounting Officer

- CFO of American DG Energy from 2015 to merger
- Previously CFO of Tecogen from 2007 to 2014
- Joined Tecogen in 2005 as Controller
- Partner at Sullivan, Bille, PC, a regional accounting firm prior to joining Tecogen

Jack Whiting

General Counsel

- Prior to joining Tecogen in 2018, was VP, General Counsel & Secretary of GeNO LLC (2012-2017), Levitronix LLC (2009-2011), and American Renal Associates (2002-2008)
- Associate General Counsel of Thermo Electron from 1996 to 2002

Board of Directors



Angelina Galiteva Director, Board Chairwoman

- Chair of the Company since 2005
- Founder and Chair of the Board for the Renewables 100 Policy Institute, a nonprofit entity dedicated to the global advancement of renewable energy solutions since 2008
- Chairperson at the World Council for Renewable Energy and Board member of the Governors of the California ISO

Ahmed Ghoniem

- Company Director since 2008
- Ronald C. Crane Professor of Mechanical Engineering at MIT
- Director of the Center for 21st Century Energy and Head of Energy Science and Engineering at MIT
- Associate Fellow of the American Institute of Aeronautics and Astronautics

Charles Maxwell Director, Chair of Audit Committee

- Company Director since 2001
- 40 years of energy sector specific experience with major oil companies and investment banking firms
- Former Senior Energy Analyst with Weeden & Co.
- Board Chairman of American DG Energy,

Keith Davidson

Directo

- Company Director since 2016
- President of DE Solutions, a consulting and engineering firm serving the distributed energy markets
- Former Director of the Gas Research Institute and past President of the American Cogeneration Association
- 25 years of experience in energy and environmental technology development and implementation

Deanna Peterson

- Company Director since 2017
- Chief Business Officer of AVROBIO since 2016
- Vice President of Business Development at Shire Pharmaceuticals from 2009 to 2015
- Led development, priorization and execution of Shire's overall corporate and business development strategies

Benjamin Locke

- Company Director since 2018
- Joined company as general manager in 2013
- Director of Business Development at Metabolix from 2001 to 2013
- Former Vice President of Research at Innovative Imaging Systems
- Responsible for Tecogen growth and profitability

John Hatsopoulos Advisor to the board

- Chairmain Emeritus, Retired CEO and Director of the Company organization in 2000 to 2018
- Co-Founder for Thermo Electron Corp., now Thermo Fisher Scientific (NYSE: TMO)
- As Thermo Electron CFO, grew company from a market capitalization of ~\$100 million in 1980 to over \$2.5 billion

3Q '18 Financial Metrics: Revenues, Margins, Growth



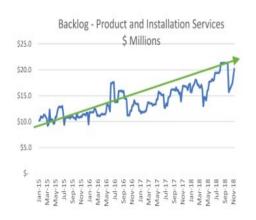
- Four diverse revenue streams providing a mix of transactional and annuity like revenue streams
 - Product revenue grew 14%, with chillers gaining 89%, year over year
 - Product gross margin improved 6% year over vear
 - Turnkey installation included in service operations facilitates both product and service revenue
 - Energy production revenue provided \$1.5 million of stable cash flow with gross margin of 42.3%, exceeding expectations
- Overall gross margin of 36.3%, down by 2% year over year
- Overall gross margin on a T4Q basis of 37.1%
- Total revenue growth on a T4Q basis of 23%

	Qua	rter Ende	d Sep	tember		
\$ in thousands		2018		2017	YoY Growth	% of Total Rev
Revenue						
Cogeneration	\$	1,664	\$	1,842	-9.7%	21.0%
Chiller	11111111	1,101	11000	583	88.7%	13.9%
Total Product Revenue		2,765		2,426	(14.0%)	34.8%
Service Contracts and Parts		2,066		2,110	-2.1%	26.0%
Installation Services		1,648		2,410	-31.6%	20.8%
Total Service Revenue		3,714		4,519	-17.8%	46.8%
Energy Production		1,460		1,556	-6.2%	18.4%
Total Revenue	\$	7,939	\$	8,501	-6.6%	100.0%
Cost of Sales						
Products	\$	1,695	\$	1,539	10.2%	
Services		2,517		2,981	-15.6%	
Energy Production		843		723	16.6%	
Total Cost of Sales	\$	5,056	\$	5,243	-3.6%	
Gross Profit	\$	2,883	\$	3,258	-11.5%	36.3%
Net loss attributable to Tecogen Inc.	\$	(603)	S	27		
Gross Margin						
Products	C	38.7%		36.6%		
Services	3	32.2%		34.0%		
Aggregate Products and Services	3	35.0%		34.9%		
Energy Production	0	42.3%		53.5%		
Overall	36.3%		38.3%			22

Consistent Financial Progress



ADJUSTED EBITDA* 3Q '18 Compared to 3Q '17



Adjusted EBITDA		Q'18	3Q'17		
Non-GAAP financial disclosure					
Net income (loss) attributable to Tecogen Inc.	\$	(603,037)	\$	27,211	
Interest expense & other expense, net		9,531		30,393	
Income tax expense		3,815			
Depreciation & amortization, net		199,938		160,061	
EBITDA		(389,753)		217,665	
Stock based compensation		55,330		40,645	
Merger related expenses		75,768		37,445	
Adjusted EBITDA	\$	(258,655)	\$	295,755	

Steady growth in the backlog translates to revenue growth

*Adjusted EBITDA is defined as net income (loss) attributable to Tecogen Inc., adjusted for interest, depreciation and amortization, stock based compensation expense, unrealized gain or loss on equity securities and merger related expenses.

Consistent Financial Progress





InVerde e+ Data



Best in class efficiency: 33% electrical, 94% overall (LHV)

- to Ideal for markets with commercial electric rates over \$0.12/kWh
- ⇒ Fully scalable to multi-MW system
- Cloud-based real-time performance monitoring
- Indoor and outdoor installation
- Dimensions (indoor 7'6"x4'0"x5'9" / outdoor 7'10"x4'11"x6'4")
- Weight (indoor 4,300 lbs / outdoor 4,800 lbs)
- Acoustic Level: 69 dBa @ 20'
- Departing Temperature Range: -4° to 104° F (-20° to 40° C)

Smart Inverter Technology

- UL 1741 and UL 2200 certified
- Unique CERTS-Microgrid capability enables grid-independent operation
- Only inverter-based CHP system that meets NFPA's Type 10 Emergency Power Supply System rapid blackstart standard
- Demand Response capable for automatic dispatching





Energy savings can pay back initial investment in as few as 2-5 years

Cogeneration Case Study



Location: 205 West End Ave, New York City

- What: Two InVerde's that went into service in April, 2016
- Cumulative Savings: \$300 thousand over first 24 months of operation
- Expected Payback Period: 4 to 6 years before NYSERDA rebate
- ☼ Total Electric Generation: 2,219 MW-Hours
- Average Electrical Efficiency: 27.1%
- ☼ Total Efficiency: 63.3% with 51.5% of captured heat utilized

Source of Operational Data: NYSERDA DG Integrated Data System



Tecochill Data



Only natural gas engine driven chiller available

- Widely deployed across North America
- Utilizes less than 1% of the electricity of competing electric chillers, which can be supplied by small retail generator (<3kW)
- Eliminates exposure to on-peak electric demand charges
- Cloud-based real-time performance monitoring and system control
- Variable engine speed operation for excellent part load performance and longer life

	RT Series	STx Series	DTx Series
Cooling Capacity (tons)	50	150-200	300-400
Dimensions			
Length	18'4"	13'10"	14'3"
Height	7'11"	4'4"	7'0"
Width	5'6"	6'9"	7'7"
Operational Weight (lbs)	8,300	11,750	23,650





Indoor Agriculture



Rapidly growing market poised for exponential growth

- To grow 5x over five years according to Agrilyst
- Cannabis is primary near-term driver
- Leafy greens, herbs, and tomatoes are also attracting capital
- Typically located near urban centers
- Often have older infrastructure and higher electricity rates
- Tecochill chillers virtually eliminate need to upgrade electrical infrastructure
- Removes heat generated by lighting and dehumidifies the air
- Virtually pure carbon dioxide exhaust can be utilized to help speed plant growth



Tecochill natural gas powered chillers provide a unique value proposition for indoor farming

Ilios Data



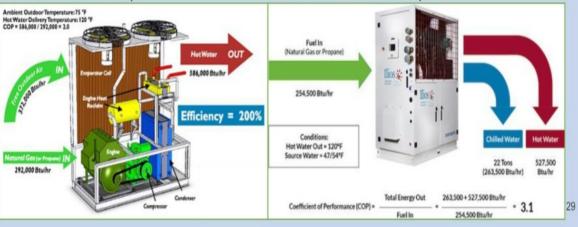
World's most efficient water heater

- 2-3x the efficiency of a conventional boiler
- Can generate 15 to 25 tons of free cooling while producing hot water
- Dimensions: 5'x3'x6'
- Weight: 3,200 lbs



Air-source Heat Pump

Water-source Heat Pump



Ultera Emission Technology



Fuel Cell Slayer: Enables internal combustion engine to achieve emissions similar to a fuel cell

Design fits well within existing fork truck architecture and does not require significant reengineering



Internal Combustion Engine First St

Engine tuned to run slightly rich

First stage eliminates NOx

Heat Exchanger Lowering exhaust temperature prevents reformation of NOx in second stage

Second stage eliminates CO

Second Stage Catalyst Virtually Pure CO₂ Stream

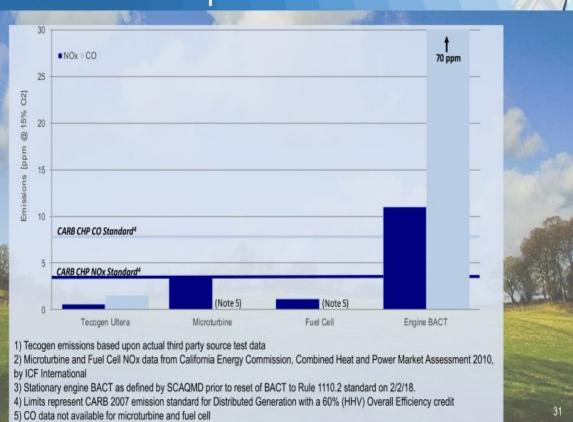
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Ultera on roof of outdoor InVerde



Stationary Emissions Reduction Comparison





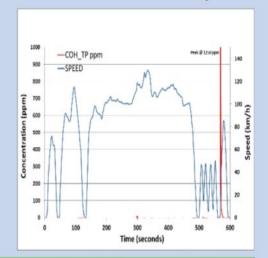
AVL Automotive **Emissions Test Results**



Ultera Reduction of CO Concentration – US06 Cycle

Standard Vehicle Emission System

—COH_03 ppm SPEED Time (seconds) With the addition of the Ultera System



Graphs present the reduction of measured CO concentration where CO concentration (ppm) is represented by the red line and the vehicle speed (in km/h) is represented by the blue line and depicts patterns of acceleration and deceleration.

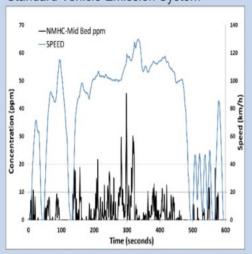
CO is nearly eliminated by the Ultera System

AVL Automotive Emissions Test Results

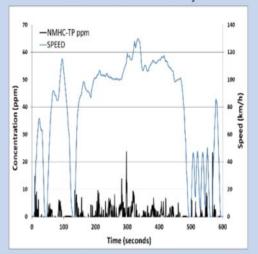


Ultera Reduction of NMHC Concentration – US06 Cycle

Standard Vehicle Emission System



With the addition of the Ultera System

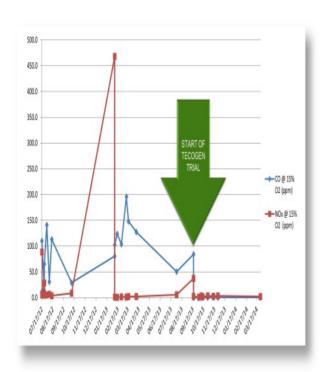


Graphs present the reduction of NMHC (non-Methane hydrocarbons) where NMHC concentration (ppm) is represented by the black line and the vehicle speed (in km/h) is represented by the blue line and depicts patterns of acceleration and deceleration.

Stand-By Generator Emissions Test Results



Ultera Performance on Caterpillar 15 Liter Natural Gas Generator



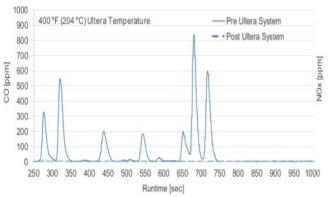


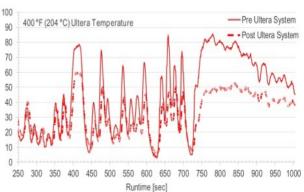
Forklift Truck Emissions Test Results



Heavy Lift Test: Exceptional Results

- ⇒ 99% CO reduction
- 58% THC reduction
- 24% NOx reduction

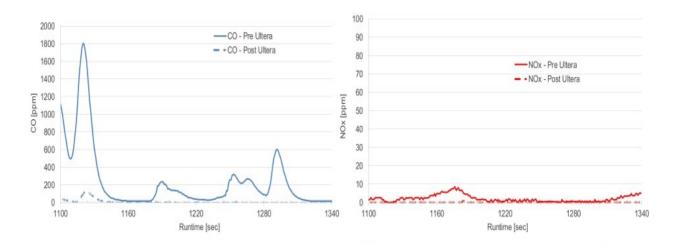




Forklift Truck Emissions Test Results



Low NOx Tuning Test (low loading)



Near-zero NOx levels achieved with simple engine control tuning (reprogramming)



Safe Harbor Statement



This presentation and accompanying documents contain "forward-looking statements" which may describe strategies, goals, outlooks or other non-historical matters, and uses words such as "believe," "expect," "anticipate," "likely," or "may" and similar expressions intended to identify forward-looking statements for purposes of the Safe Harbor provisions under the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks and uncertainties, and you should not place undue reliance on forward-looking statements. We specifically disclaim any obligation to update forward-looking statements.

In addition to the factors described in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q under "Risk Factors," among the factors that could cause actual results to differ materially from past and expected results are the following: fluctuations in demand for our products and services, competing technological developments, issues relating to research and development, the availability of incentives, rebates, and tax benefits relating to our products and services, changes in the regulatory environment relating to our products and services, integration of acquired business operations, and the ability to obtain financing on favorable terms to fund existing operations and anticipated growth.

Important Transformation of Electric Power Generation Underway



- · Electricity generation undergoing important transformation
- · Shift from central power plants to smaller local sources
 - · Referred to as Distributed Generation (DG) and Microgrids
- Change driven by several factors
 - Imposition of higher electricity tariffs as utilities seek to manage demand
 - · Grid vulnerability to climate change induced events
- Tecogen DG products well positioned to support this change
 - · Highly advanced products with unique features
 - · Licensed proprietary microgrid system
 - Emissions levels comparable to fuel cells by virtue of Ultera after-treatment system
 - · More than twice the efficiency of utility power



Tecogen InVerde microgrid in Brooklyn NY powers beverage warehouse for 7 years



Tecogen air conditioning chillers operate without significant electricity requirement sidestepping utility demand tariffs





- · Tecogen air-conditioning chiller sales resurgent in this market
 - · Sales in Massachusetts, Colorado, Florida, and Canada
 - 28% of Tecogen factory production in 2018
 - · Only 2% two years ago (2016)
- Sales strongly influenced by familiar grid issues
 - · Industrial scale process, intolerant of grid outages
 - · Production costs highly dependent on local electrical tariffs
 - · Electrical needs particularly intense
 - · Relocation to lower rate areas not feasible
 - · Locally grown product favored; federal law prohibits interstate shipping
 - · Local utility service often inadequate, upgrades impractical
- DG advantages obvious and compelling
 - · Lower energy costs
 - · Reduced vulnerability to grid outages, even if prolonged
 - · Utility requirements greatly reduced, well within most building's electrical supply constraints
- Future growth likely to be very significant
 - Legalization in additional highly populated states seems likely (NJ, NY, etc.)
 - · Initial sale of Tecogen chillers in Q4 to lettuce grower signals emerging market in other indoor agriculture such as produce



Indoor growing, especially Cannabis, is characterized by intense electricity needs for lighting, cooling, and dehumidification, often problematic for growers serving local customers

Developing Technology: Ultera Low Emissions Technology Application to Mobile Sources



- · Ultera emissions after-treatment process has significant upside potential
 - Developed under research grant from State of California and SoCal Gas Co.
 - Solves the seemingly intractable problem of engine permitting in Los Angeles region
 - · Highly successful, representing true breakthrough
 - · Demonstrated on Natural Gas, gasoline, and LPG (propane) engines
 - Impacts "criteria pollutants" (NOx, carbon monoxide, and hydrocarbons)
 - · Patented in US and other markets, used on all Tecogen DG products
 - Ultera engines only type permitted in LA air district for electricity generation without operating limitation
- Mobil source application development underway with Mitsubishi Caterpillar Forklift America
 - Program success would likely open doors to other applications such as alternatively fueled medium duty trucks and buses (LPG, natural gas, biofuels)



Forklift truck from Mitsubishi Caterpillar Forklift America used in Ultera demonstration

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Energy Efficiency Reimagined

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Tecogen's Emerging Opportunities for Growth: Cogeneration and Chilling, Indoor Cultivation, and Vehicle Emissions Control

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Tecogen's DG (Distributed Generation) products and technology has significant near-term potential for growth as worldwide electric power generation moves from large centralized sources to smaller onsite sources that are cleaner, more efficient, and less costly. Driving this shift are infrastructure shortcomings of aging utility grids. These have become increasingly strained and less reliable while major expansion upgrades are politically difficult and slow to implement, especially in urban areas where upgrades are most urgently needed. Predictably, utilities have managed the demand by invoking higher tariffs, many heavily weighted to the time of use, which has opened the door to innovative DG technology.

The DG/microgrid technology developed by Tecogen and embodied in the company's InVerde and natural gas air-conditioning products (Tecochill) circumvent the negative consequences of an aging power system; our reliable power production technology is over twice as efficient as the US power grid while its fuel source, natural gas, is plentiful and inexpensive. Moreover, the microgrid feature of the company's products enable facilities to operate indefinitely when the grid has failed, an increasing concern in the United States and elsewhere as the power grid becomes more vulnerable to climate change induced outages. Our modular approach allows scalable project implementation to proceed quickly at modest cost, especially relative to the alternative: utility infrastructure upgrades and expansion. Notably, Tecogen revenue has nearly quadrupled in the last ten years, which we believe is strong affirmation of the increasing microgrid market as we have envisioned.

Case in Point: Cannabis (Marijuana) Cultivation – a Major Growing Market for Tecogen

A prime example of Tecogen's success following the reasoning outlined above, is the emerging industry of indoor cultivation of cannabis for medicinal and recreational use. Our products, particularly our air-conditioning chillers, have sold exceptionally well to these applications where cannabis has been legalized (Massachusetts, Colorado, Florida, and Canada). In 2016, only 2% of Tecogen production was slated to the Cannabis market, increasing, remarkably, two years later 14-fold (28% of 2018 our production).



Intense lighting and space conditioning needs in Indoor Cannabis growing operation place heavy burden most electric supply services

Growers are typically confronted with especially acute electricity supply issues due to the energy intensity of their process. The strong lighting and resulting cooling load coupled with humidity control often exceed the electrical capacity of preexisting warehouses being converted for cultivation. At the same time, the market favors locally grown "craft" product which generally discourages consideration of locating to states having less expensive and more abundant electricity (which is not an option, in any case, as



product transport across state lines is prohibited by federal law). This presents an ideal opportunity for Tecogen: our Tecochill natural gas chillers can be used to eliminate the electrical load required for cooling and dehumidification, avoiding the need for an expensive service upgrade to the building, while at the same time reducing operating costs for cooling and dehumidification by two thirds in states with higher electric rates.

We believe legalization of marijuana throughout most of the US and Canada is inevitable. In this past election cycle, three states affirmed legal status including Michigan which voted positively for recreational use. Legalization appears imminent in New Jersey and New York which, if approval indeed ensues, will create enormous demand in the region where Tecogen microgrid products already are in high demand due to high electricity tariffs and grid reliability concerns (Hurricane Sandy aftermath). As cannabis production ramps up, we anticipate a flourishing market for the company's chiller and Combined Heat and Power (CHP) systems especially where the demand is accentuated by recreational use legalization. Further, we anticipate similar opportunities for the company will be found in the expanding indoor cultivation market1 as consumers increasingly value locally sourced produce. In Q4 2018, we completed our first product sale of three chillers for indoor lettuce cultivation (see our December 13, 2018 press release).

Developing Technology: Ultera Low Emissions Technology Application to Mobile Sources

In conjunction with the State of California and the Southern California Gas Co., Tecogen has developed groundbreaking emissions technology for its stationary, natural gas fueled products. The technology applies to "criteria pollutants", those

chemicals directly impacting human health and highlighted in the recent Volkswagen scandal (nitrogen oxides, carbon monoxide, and hydrocarbons). The development program was initiated by the emergence of extremely restrictive emissions regulations in Southern California in 2010 for stationary equipment applied to electricity generation. The levels of criteria pollution required to meet these regulations are the lowest in the United States and far lower than those required of mobile sources, even in optional, rarely attained "near-zero" certifications.



Tecochill natural gas-powered air-conditioner utilized in Massachusetts for Cannabis cultivation

The aftertreatment process was subsequently patented by the company both domestically and internationally and successfully commercialized as Ultera. It is utilized in most Tecogen product shipments. The process is generally applicable to any spark-ignited internal combustion engine configured to use a conventional catalyst aftertreatment system. It has been applied to a variety of engines operating on biofuels, propane, gasoline and natural gas with similarly successful results. Currently, Ultera-equipped engines are the only ones successfully permitted in Southern California for electricity generation without operating limits or special exemption since the passing of the new regulation in 2010. Most recently, the SoCal regulatory body has broadened

https://www.producegrower.com/article/greenhouseoperations-forbes-agtech-startup/

https://www.eater.com/2018/7/3/17531192/vertical-farming-agriculture-hydroponic-greens https://techcrunch.com/2017/07/19/billionaires-make-it-rain-on-plenty-the-indoor-farming-startup/

Tecogen:

¹ See, for example:

these restrictive permit requirements, influenced by Ultera's practicality and successful results, to other stationary engine categories (see our press release here).

Tecogen's Ultera system eventually attracted the interest of the propane (LPG) industry, whose once dominant position in fueling fork lift trucks is being eroded by competing models powered by rechargeable batteries, largely because of their emissions shortcomings and despite significant disadvantages of the battery systems -- they are costlier and often unable to complete a full shift because of energy storage limitations. Consequently, Tecogen was funded by the industry's research group PERC (Propane Education and Research Council) to demonstrate Ultera performance on a propane fueled forklift truck. The project has significant potential for this industry as these vehicles generally operate indoors where health concerns are magnified.

Several forklift companies expressed interest in participating in the project with MCFA (Mitsubishi Caterpillar Forklift America) eventually being selected. They supplied a forklift truck to Tecogen for modification and testing which was successfully utilized in demonstrating the potential of an MCFA product attaining a "near-zero" certification status believe the barriers to entry are formidable with technology mainly controlled by large; and conservative suppliers, while at the same time the industry seems focused on electrification of vehicles as their emissions solution. A more modest but substantial market where Tecogen believes a nearer term opportunity for Ultera is medium duty trucks (school buses, delivery vehicles, etc.). This application does not typically adapt well to electrification because of the longer, heavier duty cycles, and the supply chain is far less entrenched. For medium duty trucks, we believe the shift will be from diesel vehicles (which are

under US EPA standards, a heretofore unachieved status in the industry. Our goal is to ultimately commercialize the Ultera option with MCFA (and perhaps others) which will help the propane industry regain lost ground to battery powered units and open up opportunities in food applications where propane is currently prohibited. Currently, we are working with MCFA engine control technologists in Japan to tune the engine optimally for the Ultera process, after which the prototype will be sent to MCFA in Texas for their own inhouse evaluation.

If the company is successful with the MCFA program, we believe the technology will gain important credibility in larger mobile markets. We have investigated automotive applications and



MCFA (Mitsubishi Caterpillar Forklift America) test forklift truck equipped with Ultera system

highly problematic with regard to criteria pollutants) to alternative fuels such as propane, natural gas and biofuels. Engines powered by these fuels are ideal applications for the Ultera process. Our approach to further application of Ultera in mobile sources will be to establish success in the forklift market before seeking partners manufacturing medium in the more approachable, stronger market of medium sized commercial vehicles.

