



**HYDROGENICS**  
SHIFT POWER | ENERGIZE YOUR WORLD

## Hydrogenics Overview

March 2019

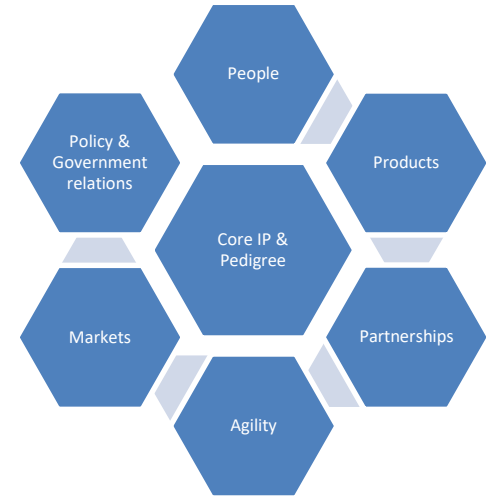
# Safe Harbor Statement

Certain statements in this Overview contain forward-looking statements within the meaning of the “safe harbor” provisions of the U.S. Private Securities Litigation Reform Act of 1995, and under applicable Canadian securities laws. These statements are based on management’s current expectations and actual results may differ from these forward-looking statements due to numerous factors, including: our inability to increase our revenues or raise additional funding to continue operations, execute our business plan, or to grow our business; our inability to address a slow return to economic growth, and its impact on our business, results of operations and consolidated financial condition; our limited operating history; inability to implement our business strategy; fluctuations in our quarterly results; failure to maintain our customer base that generates the majority of our revenues; currency fluctuations; failure to maintain sufficient insurance coverage; changes in value of goodwill; failure of a significant market to develop for our products; failure of hydrogen being readily available on a cost-effective basis; changes in government policies and regulations; failure of uniform codes and standards for hydrogen fuelled vehicles and related infrastructure to develop; liability for environmental damages resulting from our research, development or manufacturing operations; failure to compete with other developers and manufacturers of products in our industry; failure to compete with developers and manufacturers of traditional and alternative technologies; failure to develop partnerships with original equipment manufacturers, governments, systems integrators and other third parties; inability to obtain sufficient materials and components for our products from suppliers; failure to manage expansion of our operations; failure to manage foreign sales and operations; failure to recruit, train and retain key management personnel; inability to integrate acquisitions; failure to develop adequate manufacturing processes and capabilities; failure to complete the development of commercially viable products; failure to produce cost-competitive products; failure or delay in field testing of our products; failure to produce products free of defects or errors; inability to adapt to technological advances or new codes and standards; failure to protect our intellectual property; our involvement in intellectual property litigation; exposure to product liability claims; failure to meet rules regarding passive foreign investment companies; actions of our significant and principal shareholders; dilution as a result of significant issuances of our common shares and preferred shares; inability of US investors to enforce US civil liability judgments against us; volatility of our common share price; dilution as a result of the exercise of options; and failure to meet continued listing requirements of Nasdaq. Readers should not place undue reliance on Hydrogenics’ forward-looking statements. Investors are encouraged to review the section captioned “Risk Factors” in our regulatory filings with the Canadian securities regulatory authorities and the US Securities and Exchange Commission for a more complete discussion of factors that could affect our future performance. Furthermore, the forward-looking statements contained herein are made as of the date of this presentation, and we undertake no obligation to revise or update any forward-looking statements in order to reflect events or circumstances that may arise after the date of this presentation, unless otherwise required by law. The forward-looking statements contained in this presentation are expressly qualified by this.

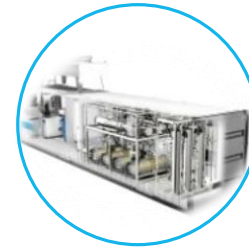
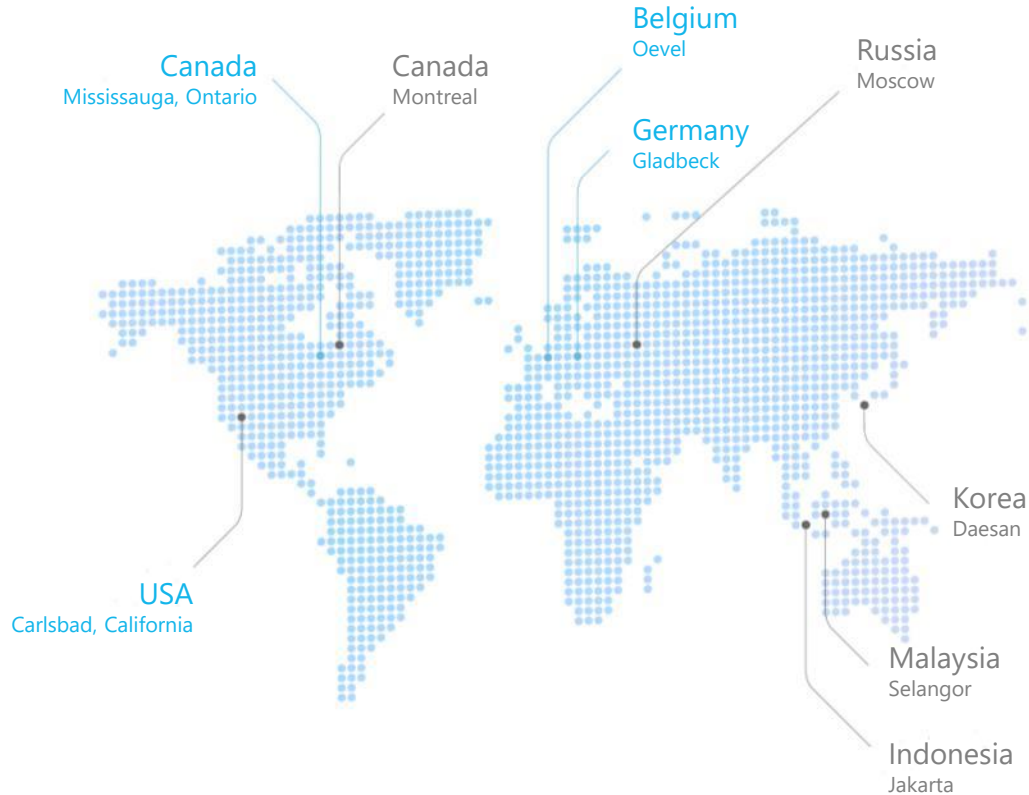
# Hydrogenics is a Global Leader in Hydrogen Technology

Hydrogenics delivers the technology to shift power to a zero-emission energy economy by:

- **Empowering our People** with over 170 patents over 70 years of history
- **Delivering Products** across both motive power and generation
- **Leveraging Partnerships** across Air Liquide, Enbridge, Alstom and others
- **Providing** renowned engineering **Agility**
- **Developing Global Markets** in 100+ countries for motive power and electrolysis
- **Participating** actively in **Policy and Government Relations** (e.g. Hydrogen Council)



# Shifting Power Across Industries Around the World



## HYDROGEN GENERATION

Electrolyzers

Industrial Hydrogen Supply



## POWER SYSTEMS

Fuel cells

Stand-by Power

Mobile Power Modules

MW Power Plants



## RENEWABLE HYDROGEN

Energy Storage

Hydrogen Refueling Station

Power-to-X

Grid Balancing Services

# Market Development S-Curve

Base  
Building  
Block

1<sup>st</sup> Demo  
Marquee  
Customer

Cost  
Trajectory  
Bids @  
Scale

Platform  
Adoption

Wins @  
Scale

**The Value Creation Journey  
Requires moving through these  
hurdles**

***Credibly and Believably***

**With Major Partners who can  
scale our multiple applications**

**We are doing just that!**

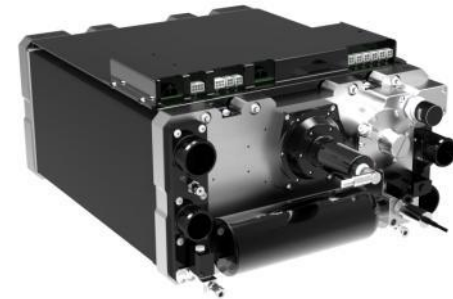


# HYDROGEN MOBILITY

# PEM Technology

## *Fuel cells use proton exchange membrane “PEM” design*

- Proprietary HyPM-HD™ product advantages include:
  - Compressor free, low pressure, low temperature stack design integrated with balance-of-plant delivering a compact design for space constrained applications
  - Easily configurable modular units (either in-line or stacked) simplifying scalability to meet larger power requirements
  - Built-in integration system simplifying electrical and mechanical interfaces for easy integration with powertrain components
- Core products available for commercial production at scale include power outputs ranging from 4 to 90 kW
- Continuous product improvement focused on standardization and cost reduction
- Supply chain capacity and flexibility also in focus.



# Commuter Rail

## *Fuel cells for zero-emission passenger trains*

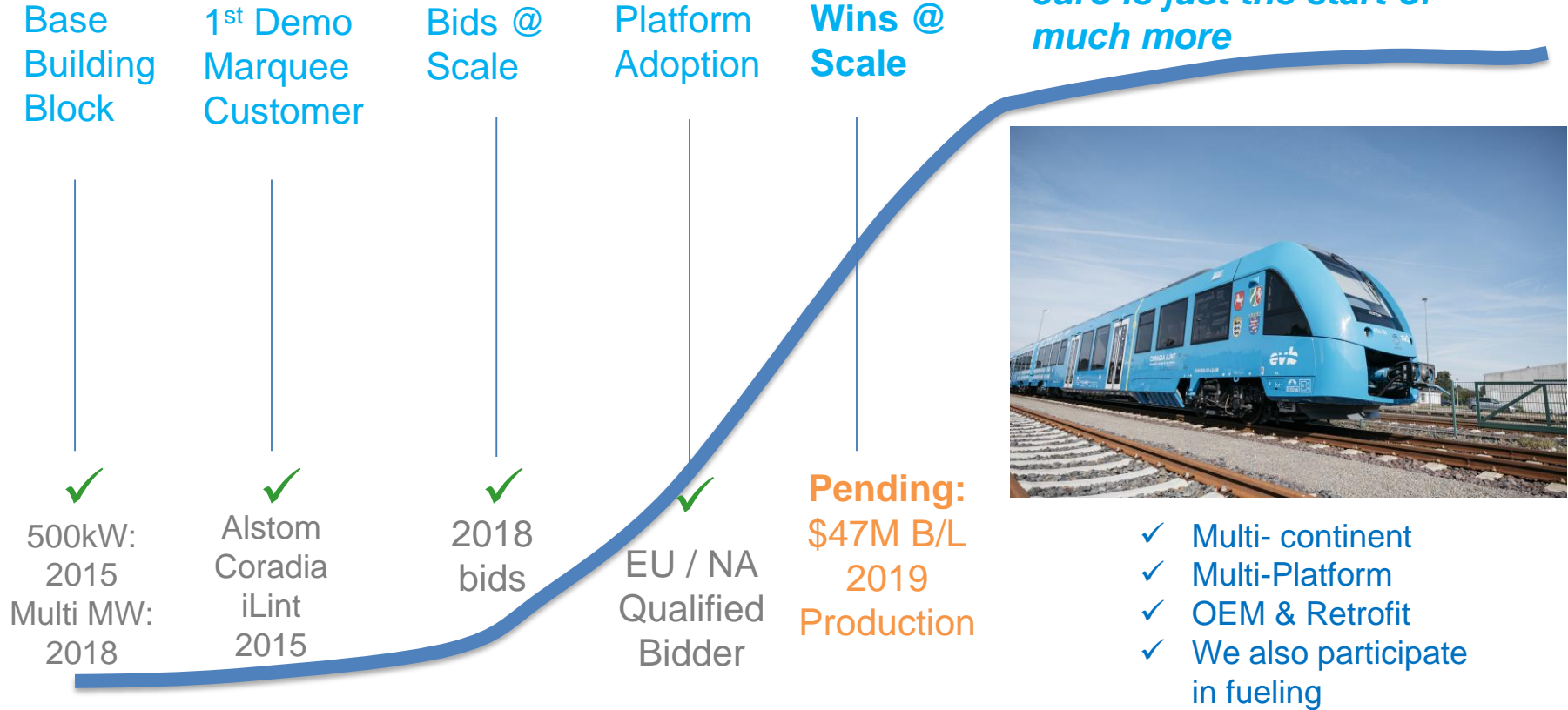
- Alstom rail program moves to final milestone with units placed into public service on September 17, 2018 and Alstom showcased first hydrogen train at InnoTrans show in Berlin – historic achievement that gained international attention
- Alstom just completed an eight city tour with the Coradia iLint Hydrogen fueled train to showcase the technology. Very strong interest
- Four significant programs are now active globally, with opportunities in 12+ countries
- This is the first major innovation in the rail industry since conversion from DC to AC drives several decades ago
- Retrofit business gaining traction, which is incremental to the original business model. Rail equipment is purchased with a 40 year planning horizon, and the outlook for diesel now does not support that time line
- Our engineering team is busy with further platform designs, and production planning is underway for builds in 2019
- Hydrogen Rail feasibility report issued by Metrolinx in Toronto in respect of major modernization program for overall rail network – RFP for more detail design work has been issued



iLint Coradia's top speed of 140km/h was tested and validated in Velim, Czech.



# Commuter Rail



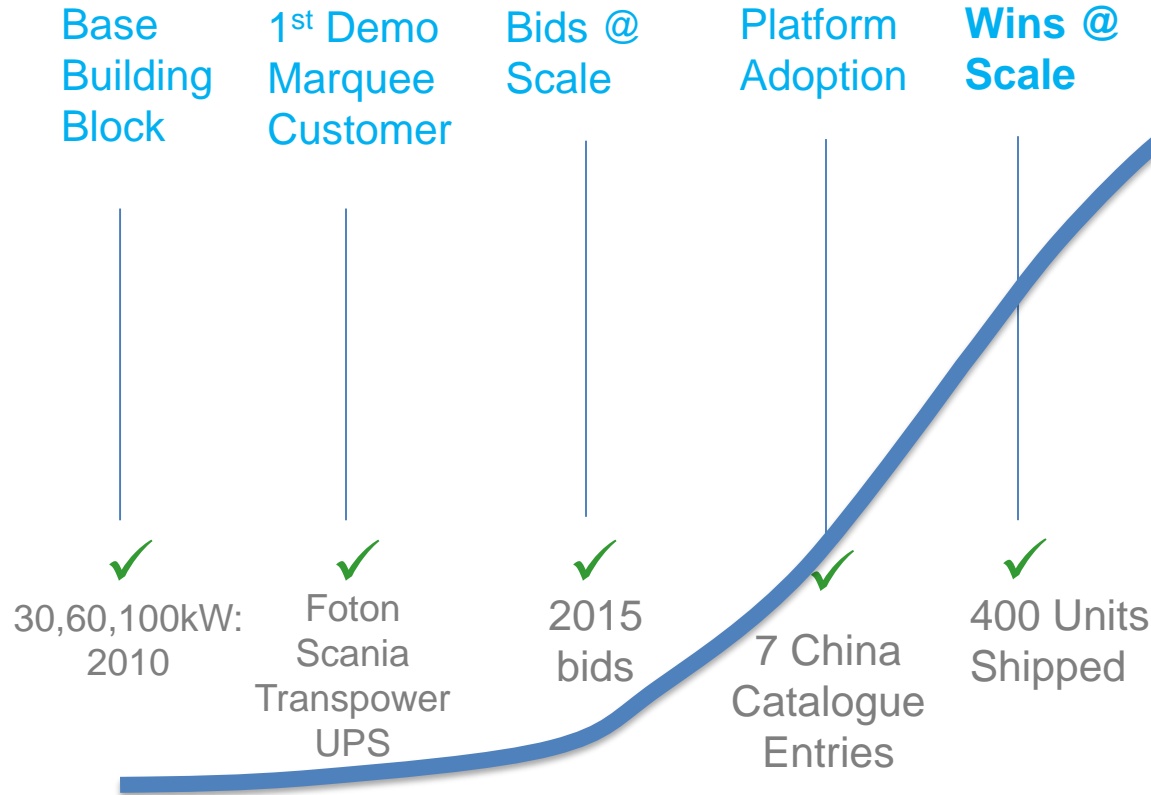
# Heavy Mobility - China

- The first phase of market development was led by fast-acting entrepreneurial companies
- While quick to start, these integrators have had challenges to scale-up
- Some integration learning points are coming to light, and enhancement cycle is active
- Overall shipments in 2018 were approximately 200 versus more than 400 in 2017
- We continue to work with our three existing partners and talk to others
- Bigger firms have expressed interest to work at larger scale – no decisions yet
- Too early to forecast shipments for 2019



# Heavy Mobility

*There is no reason this application does not scale into 100,000 vehicles as it has on battery buses already*



# Hydrogen Mobility: Reference Projects



©Alstom

Germany



Germany



©UPS

USA



China



USA



Switzerland

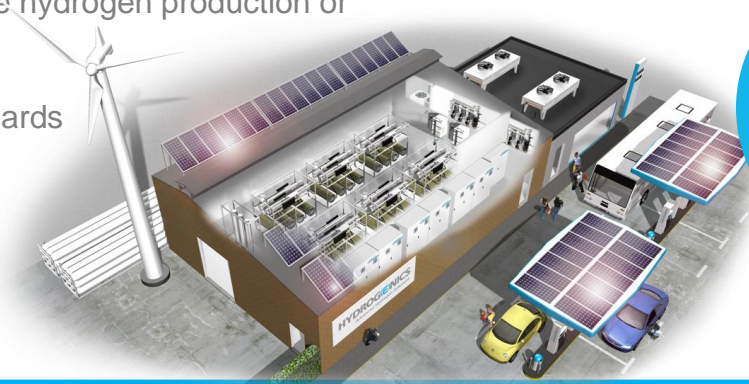


# HYDROGEN FUELING

# Hydrogen Fueling Solutions

Hydrogenics has supplied zero-emission solutions to over 55 fueling stations – more than any other hydrogen fueling company.

- Production capabilities from 20kg to over 1,000 kg per day
- 350 and 700 bar stations
- Fully interconnected systems for easy installations
- Designed for clean onsite hydrogen production or delivered hydrogen
- Built to the highest standards



Zero-emission fueling  
for clean mobility  
solutions

# Hydrogen Fueling: 55+ Reference Sites



*Aberdeen, Scotland*



*Hamburg, Germany*



*Sydkraft, Malmö, Sweden*



*Halle, Belgium*



*Stuttgart, Germany*



*Oslo, Norway*



Courtesy: Uniper Energy Storage GmbH

# RENEWABLE HYDROGEN & GRID BALANCING



# Renewable Hydrogen Solutions

Hydrogen produced from renewable power via water electrolysis enables the transition to a cleaner future across all energy sectors and applications.

- Quote and demand level is strong for Power to “X” accelerated by regulatory support (e.g. EU Renewable Energy Directive Part ii)
- Geographic dispersion with recent deliveries to Scotland, Thailand, Germany
- 1<sup>st</sup> NA plant commissioned with Enbridge *(Photo credit)*
- **Power-to Gas:** Injecting hydrogen or synthetic natural gas into the gas grid
- **Power-to-Mobility:** Hydrogen refueling for fuel cell electric vehicles
- **Power-to-Industry:** Using hydrogen as a feedstock for industrial facilities
- **Power-to-Fuel:** Using hydrogen as a feedstock for traditional fuel production
- **Power-to-Power:** Repowering hydrogen through a fuel cell

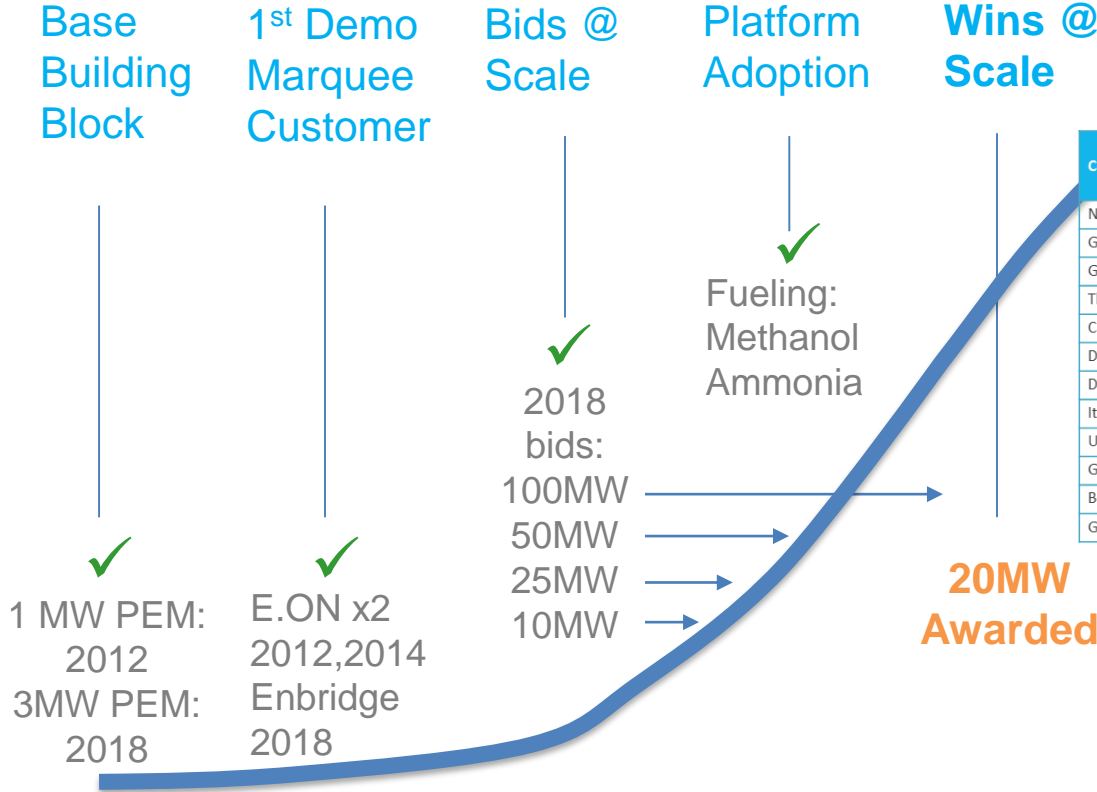
North America  
reference site  
up and  
running



- The Hydrogen Corporation, a subsidiary of Air Liquide, is now an 18% shareholder of Hydrogenics after \$20.5M investment
- Above-market price a strong validation of our technology leadership in electrolysis and fuel cell applications
- Joint technology development program will focus on building on respective strengths
- Non-exclusive commercial relationship included
- Rapid award of a 20MW – 8 ton per day – hydrogen facility for Air Liquide Canada provides further evidence of confidence in our MW class electrolysis systems

# Power to "X"

Single projects in this area exceed our current total annual revenue



Country	Project	Size	Year	Electrolyser technology	Power	Gas	Industry	Mobility	Fuel
Norway	Haeolus	2 MW + 100 kW FC	2018	PEM	•				
Germany	MefCO2	1 MW	2018	PEM					•
Germany	WindGas Brunsbuttel	2.4 MW	2017	PEM		•			
Thailand	EGAT	1 MW + 300 kW FC	2017	PEM	•				
Canada	Embridge P2G	2.4 MW + 100 kW FC	2017	PEM		•			
Denmark	HyBalance	1.2 MW	2017	PEM			•	•	
Denmark	BioCat	1 MW	2016	Alkaline		•			
Italy	Ingrid	1 MW + 100 kW FC	2016	Alkaline	•	•	•		
UK	Aberdeen	1 MW	2016	Alkaline				•	
Germany	WindGas Reitbrook	1.5 MW	2015	PEM		•			
Belgium	DonQuichote	150 kW + 100 kW FC	2015	Alkaline + PEM	•			•	
Germany	WindGas Falkenhagen	2 MW	2014	Alkaline		•			

# Renewable Hydrogen & Grid Balancing: Reference Projects



*Falkenhagen, Germany*



*Hamburg, Germany*



*Grapzow, Germany*



*California, USA*



*Katinnik, Quebec, Canada*



*Avedøre, Denmark*

# Milestones Move Markets

1. Major players paying attention
2. Macro drivers pointing strongly in our favour
3. Our value obvious and in the spotlight:
  - ✓ Four trains in regular public service in Germany
  - ✓ Multi Mega Watt PEM Electrolysis in service
  - ✓ **World's largest fleet** of fuel cell buses on the road

**What matters now:  
marquee customers scaling up**

**Hydrogen—the “sleeper” clean energy technology—is the “missing link” in the global transition to a low-carbon, renewables-based economy. How to invest.**

Ten years ago, hydrogen was a leading candidate among alternative-fuels to replace gasoline. Having fallen out-of-favor as attention shifted to pure battery electric vehicles (EVs), **hydrogen is now seeing a surge in investment, as nations seek to decarbonize their economies.** This week, Japan, the U.S., the E.U., and 17 other nations backed hydrogen as a key contributor for the expansion of clean energy.

“The years 2020 to 2030 will be for hydrogen what the 1990s were for solar and wind,” notes Pierre-Etienne Franc of Air Liquide SA and The World Economic Forum’s Hydrogen Council. “It’s a real strategic shift.”

Factors driving investment include: (1) the rapid decline in the cost of wind and solar, which is increasing demand for hydrogen-based storage; (2) **hydrogen is more cost effective than batteries for industrial and heavy transport systems;** and (3) existing gas infrastructure can be used to transport hydrogen, with limited adjustments and costs, underscores Noé van Hulst, Chairman of the IEA Governing Board and Hydrogen Envoy for the Ministry of Economic Affairs & Climate Policy, The Netherlands.

13d Research Report  
References four of our  
Projects

# Hydrogenics Long Term Vision Intact

- Clear leader in hydrogen-based energy systems the world over
- Project-based revenue cycle typical for still-nascent, rapidly-changing industry
  - Evolution of new technologies never smooth and predictable
- **Growing market interest and demand:** bidding on bigger, more complex systems
- Our technology is considered **best-in-class**, strong track record
- Lower cost and increased efficiency come with **scale-up projects** now underway
  - Scale-up phases often produce large, non-linear jumps in **valuation**
- Driving forward on path to profitability



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# Appendix

# Our Strategy and Value Creation

1. We have developed robust PEM technology platforms for fuel cells and electrolysis with market leading product maturity
2. Our 24 years of field experience supports safe, reliable and cost-effective application deployments inspiring the trust of new, innovative partners
3. Markets are now emerging for mobility, rail, fuel and power to gas which will drive significant scale up - and we have the credibility to deliver
4. Rail applications are a perfect illustration of how our technology links renewable energy generation, hydrogen fueling and zero emission mobility
5. We have the partners and relationships to carry these applications at scale
6. Our financial and manufacturing model will benefit from operating leverage to realize sustainable profitable growth



## Q4 2018 Highlights

- Fourth quarter revenue higher sequentially due to China shipments and electrolyzer orders
- Announced \$20.5M private placement with Air Liquide
- Backlog steady at \$132M
- Hydrogen rail leading indicators point to commercial orders in 2019
- Active bidding environment across all markets and product offerings, with healthy revenue growth anticipated this year

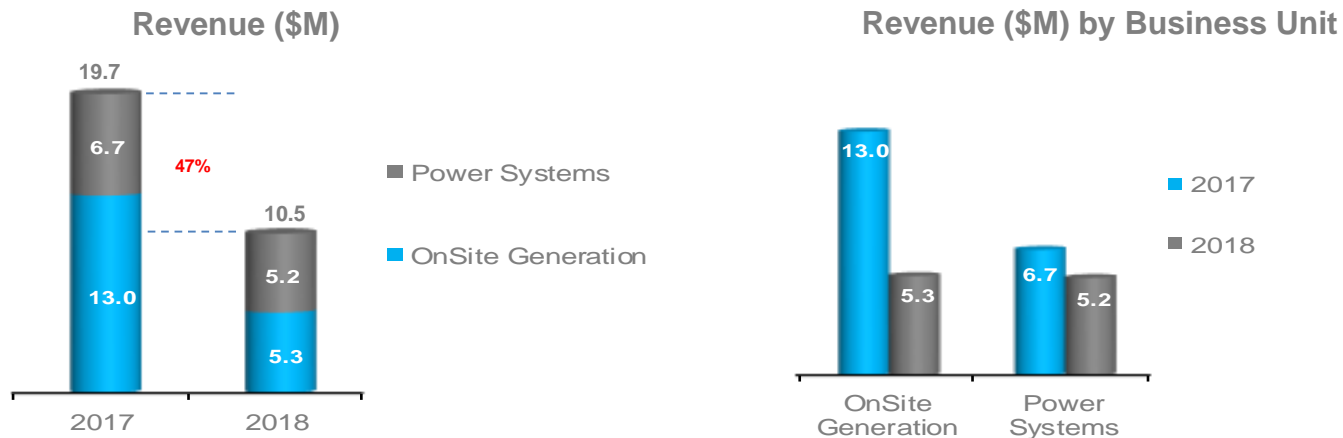


# Positive Momentum in 2019

- 20MW plant build for Air Liquide Canada will be delivered on a percentage completion basis, with initial impact anticipated in Q1
- Platform development and initial deliveries will show growing impact of rail in our portfolio
- Investment by Air Liquide and plant award is already strengthening customer confidence in other opportunities
- Our technology is considered **best-in-class**
- While China issue plays out, we have many other markets and applications to keep us busy
- Driving forward on path to profitability

# Q4 Revenue

Three months ended December 31, 2018

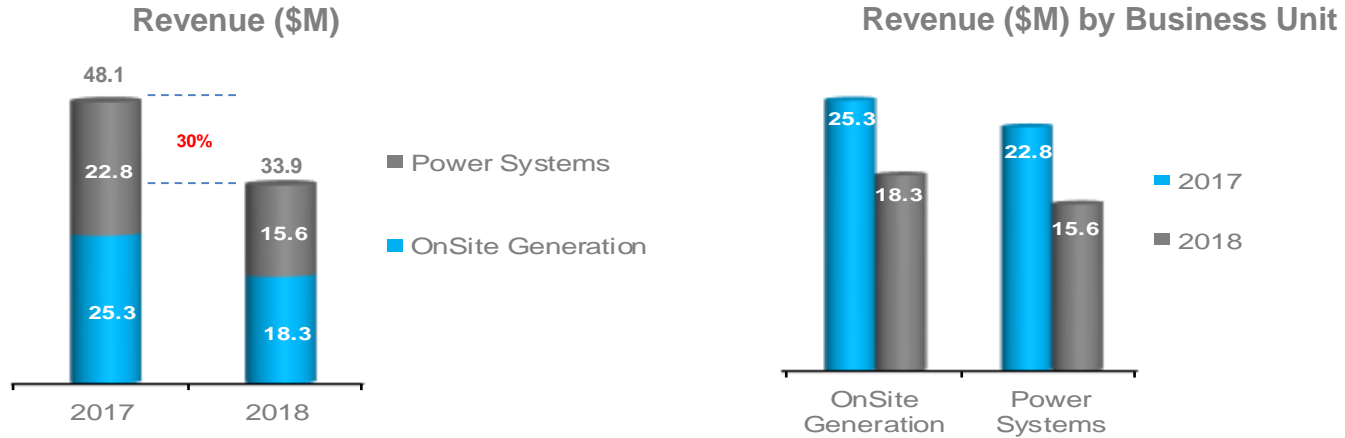


## Notes

Revenue was down \$9.2 million for the three months ended December 31, 2018 against the comparable period in 2017 attributable primarily to fewer shipments within the OnSite Generation business segment. OnSite generation delivered an exceptional volume of orders in the 2017 fourth quarter, benefitting from several specific programs including the Doosan Babcock award in Aberdeen, Scotland of over 300 kilograms of hydrogen storage capacity and the 2.4 megawatt Power-to-Gas system in Brunsbüttel, Germany.

# YTD Revenue

Year ended December 31, 2018

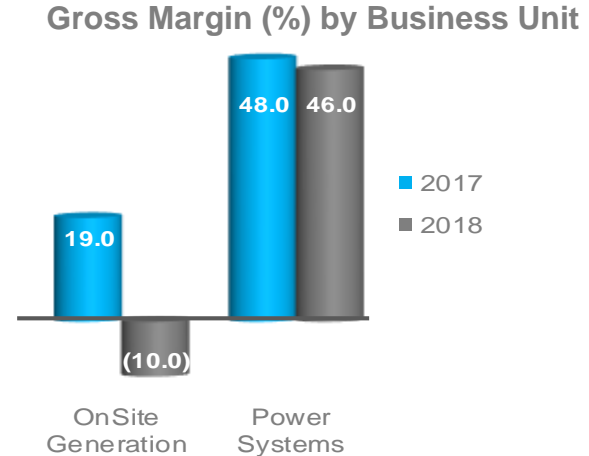
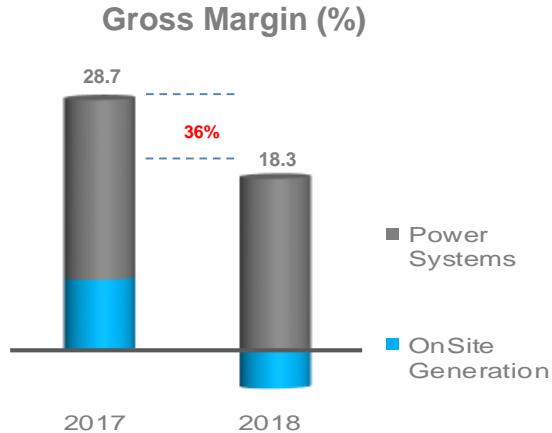


## Notes

Revenue was down \$14.2 million for the year ended December 31, 2018 versus 2017. The OnSite Generation business segment saw lower revenue of \$7.0 million due to a decline in shipments for industrial electrolyzers, while Power Systems revenue decreased \$7.2 million, primarily due to fewer shipments to China.

# Q4 Gross Margin

Three months ended December 31, 2018

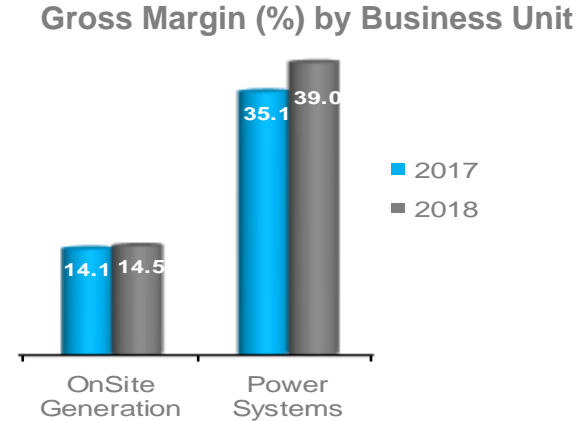
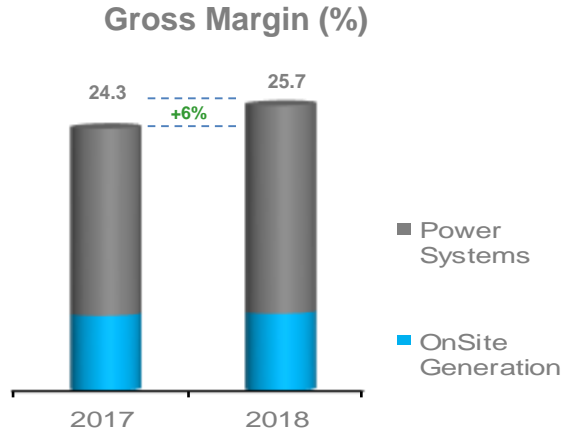


## Notes

OnSite Generation realized a negative gross margin for the three months ended December 31, 2018 due to one-time charges for inventory obsolescence and project warranty accruals on prior-year projects; excluding such charges, OnSite Generation gross margin for the period was approximately 9.8%. Power Systems gross margin for the three months ended December 31, 2018 was comparable to the same period in 2017, despite lower revenue and the absorption of proportionately greater fixed manufacturing overhead.

# YTD Gross Margin

Year ended December 31, 2018



## Notes

Onsite Generation gross margin for 2018 was 14.5%, reflecting the aforementioned fourth quarter charges; excluding these, Onsite Generation gross margin was 20.0%. Power Systems gross margin for the year ended December 31, 2018 improved by nearly 400 basis points versus 2017. The improvement reflected reduced procurement costs through more effective supply-chain management and the Company's focus on product standardization and process efficiency.

# Q4 Results

(in \$ millions)

	Three months ended Dec. 31,		Change	
	2018	2017	\$	%
<b>Revenue</b>	\$ 10.5	\$ 19.7	(9.2)	(47%)
<b>Gross Profit</b>	1.9	5.7	(3.8)	(67%)
<i>Gross Margin %</i>	18.3%	28.7%		
<b>Operating Expenses</b>				
Selling, general and administrative (excluding stock-based compensation, amortization and depreciation)	2.5	3.8	1.3	39%
Research and product development <sup>1</sup>	2.2	1.7	0.5	29%
<b>Adjusted EBITDA</b>	\$ (2.8)	\$ 0.2	(3.0)	n/a

## Notes

Adjusted EBITDA is defined as net loss excluding: cash settled long term compensation indexed to share price, share settled stock-based compensation expense, net finance income and expenses, depreciation and amortization. Adjusted EBITDA is a non-IFRS measure and may not be comparable to similar measures used by other companies. Management uses Adjusted EBITDA as a useful measure of ongoing operational results.

<sup>1</sup> Research and product development costs:

	2018	2017
Research and product development – gross	\$ 3.0	\$ 2.7
Less: research and product development funding	(0.8)	(1.0)
Research and product development - net	\$ 2.2	\$ 1.7

# YTD Results

(in \$ millions)

	Year ended Dec. 31,		Change	
	2018	2017	\$	%
<b>Revenue</b>	\$ 33.9	\$ 48.1	(14.2)	(30%)
<b>Gross Profit</b>	8.7	11.7	(3.0)	(26%)
<i>Gross Margin %</i>	25.7%	24.3%		
<b>Operating Expenses</b>				
Selling, general and administrative (excluding stock-based compensation, amortization and depreciation)	10.6	11.3	0.7	6%
Research and product development <sup>1</sup>	7.5	6.4	(1.1)	(17%)
<b>Adjusted EBITDA</b>	\$ (9.4)	\$ (6.0)	(3.4)	(57%)

## Notes

- Adjusted EBITDA is defined as net loss excluding: cash settled long term compensation indexed to share price, share settled stock-based compensation expense, net finance income and expenses, depreciation and amortization. Adjusted EBITDA is a non-IFRS measure and may not be comparable to similar measures used by other companies. Management uses Adjusted EBITDA as a useful measure of ongoing operational results.

<sup>1</sup> Research and product development costs:

	2018	2017
Research and product development – gross	\$ 12.0	\$ 8.8
Less: research and product development funding	(4.5)	(2.4)
Research and product development - net	\$ 7.5	\$ 6.4



# Order Backlog

As of December 31, 2018

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(\$M)

	<u>Oct. 1/18 Backlog</u>	<u>Orders Received</u>	<u>FX</u>	<u>Orders Delivered</u>	<u>Dec. 31/18 Backlog</u>
OnSite Generation	\$ 20.9	\$ 4.6	\$ 0.4	\$ 5.3	\$ 20.6
Power Systems	111.2	6.9	(0.8)	5.2	\$ 112.1
<b>Total</b>	<b>\$ 132.1</b>	<b>\$ 11.5</b>	<b>\$ (0.4)</b>	<b>\$ 10.5</b>	<b>\$ 132.7</b>

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Of the above backlog of \$132.7 million, we expect to recognize approximately \$49.0 million as revenue in the following twelve months. Revenue for the year ending December 31, 2019 will also include orders received and delivered in 2019.

# Consolidated Balance Sheet Highlights

(\$M)

	Dec. 31,	Dec. 31,	Change	
	2018	2017	\$	%
Cash and cash equivalents and restricted cash	\$ 8.7	\$ 22.4	(13.7)	(61)%
Trade, other and grants receivable	6.7	8.7	(2.0)	(23)%
Contract assets - (current and non-current)	6.2	7.2	(1.0)	(14)%
Inventories	17.2	15.0	2.2	14%
Operating borrowings	-	1.2	(1.2)	(100)%
Trade and other payables	9.1	9.7	(0.6)	(7)%
Contract liabilities - (current and non-current)	16.0	14.0	2.0	14%
Financial liabilities	3.4	4.9	(1.5)	(32)%

# Q4 Reconciliation of Non-IFRS Measures – Adjusted EBITDA

(\$M)

	Three months ended December 31, 2018		Three months ended December 31, 2017	
Net loss	\$	(3.1)	\$	(1.0)
Finance loss, net		0.1		0.4
Loss from joint venture		0.1		0.1
Amortization and depreciation		0.2		0.1
Compensation indexed to share price		(0.3)		0.4
Stock-based compensation expense		0.2		0.2
<b>Adjusted EBITDA</b>	<b>\$</b>	<b>(2.8)</b>	<b>\$</b>	<b>0.2</b>

# Year Reconciliation of Non-IFRS Measures – Adj. EBITDA

(\$M)

	Year ended December 31, 2018	Year ended December 31, 2017
Net loss	\$ (13.3)	\$ (10.8)
Finance loss, net	1.0	2.1
Loss from joint venture	1.6	0.3
Amortization and depreciation	0.7	0.7
Income tax expense	0.3	-
Compensation indexed to share price	(0.7)	1.0
Stock-based compensation expense	1.0	0.7
<b>Adjusted EBITDA</b>	<b>\$ (9.4)</b>	<b>\$ 6.0</b>

