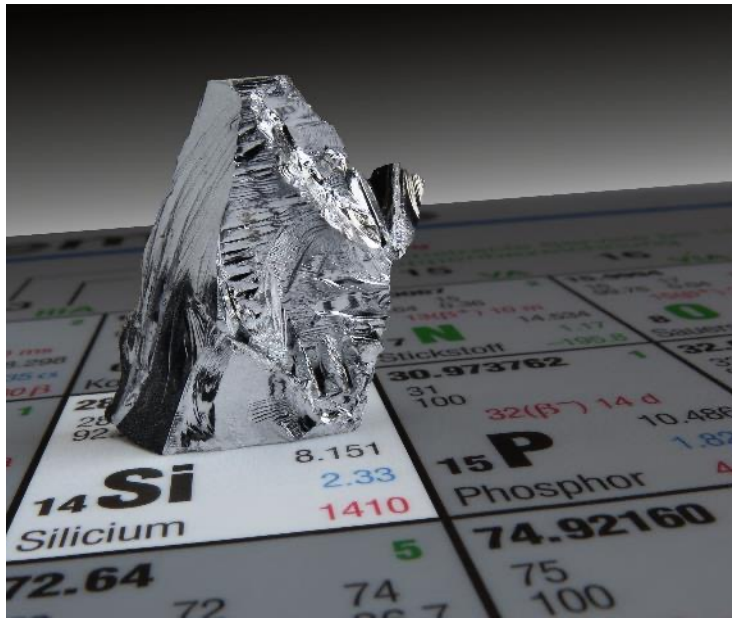
HPQ SILICON

STRATEGIC SILICON SOLUTIONS



POWERING THE CLEAN ENERGY TRANSITION

HPQ LISTED TSXV

OTCQX THE BEST MARKET HPQFF

CLIMATE TECH STARTUPS RAISED US$53.7 BILLION IN 2021

BloombergNEF

HPQ: DEVELOPING NEW PROCESSES TO MAKE THE CRITICAL ELEMENTS NECESSARY FOR NET ZERO

Ready to become the lowest cost producer of silicon nanomaterials needed for the renewable energy revolution:

Spherical Silicon Nanopowders and Nanowires for Li-ion Batteries

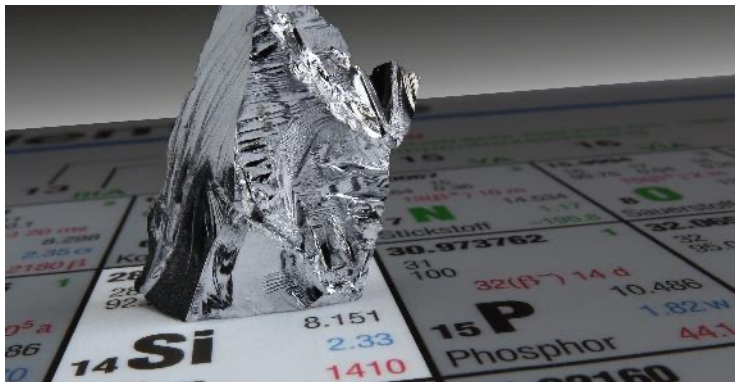
- Huge potential, already generated multiple NDA's with battery manufacturers and advance material companies
- Received a firm order (on an "if as" and "when" basis) for Si Nanopowders from major car manufacturer

Ready to become the lowest cost producer of Pure Silicon (99.5% Si up to 99.99% Si) for specialty applications

Silicon Micron size powders for Li-ion Batteries and other applications

- Material potential, already generated an NDA by major players with request for material

Supported by world class technology partners



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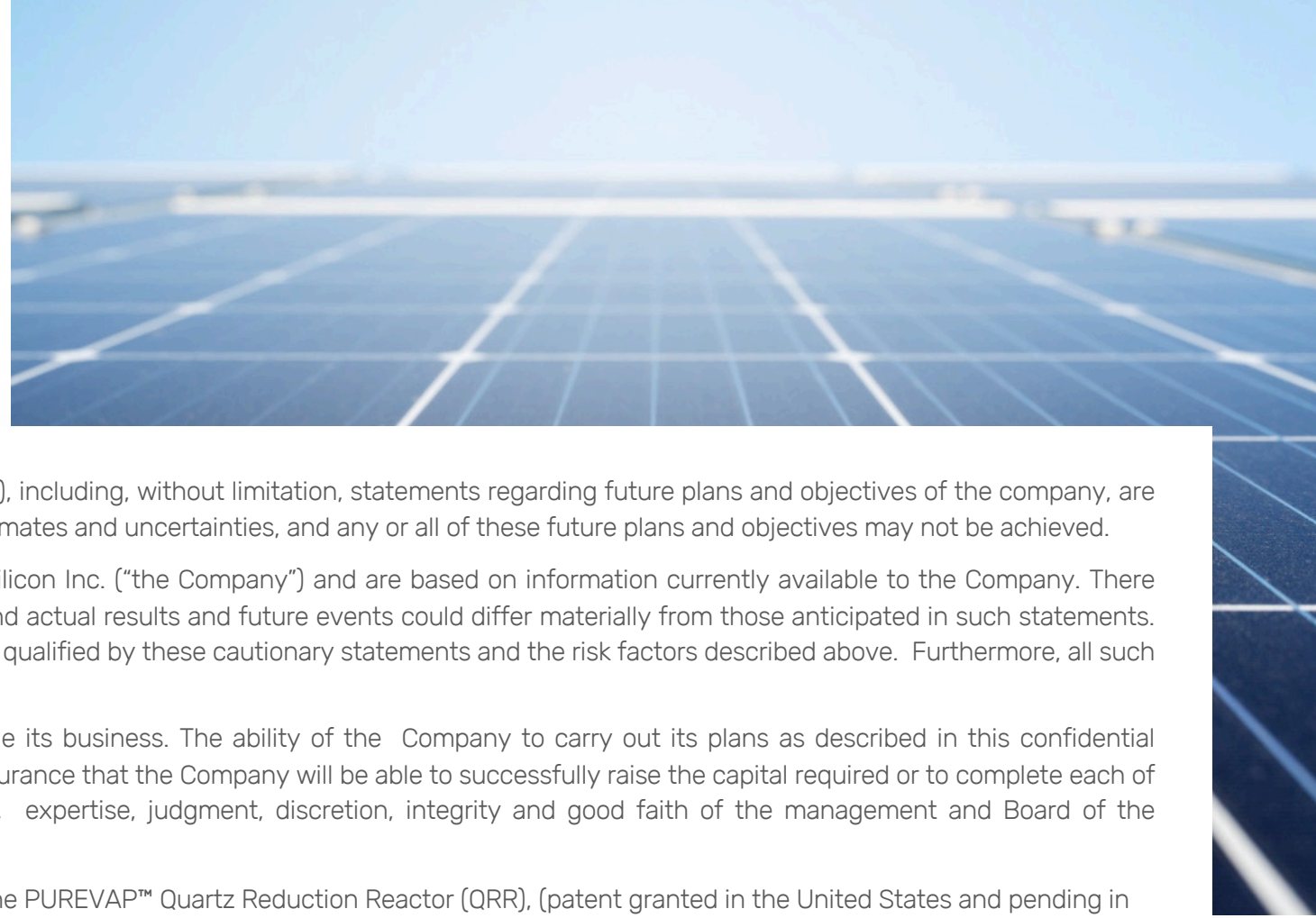
DISCLAIMERS

This presentation includes certain

"FORWARD-LOOKING STATEMENTS"



All statements, (other than statements of historical fact included herein), including, without limitation, statements regarding future plans and objectives of the company, are forward-looking statements that involve various risks, assumptions, estimates and uncertainties, and any or all of these future plans and objectives may not be achieved.

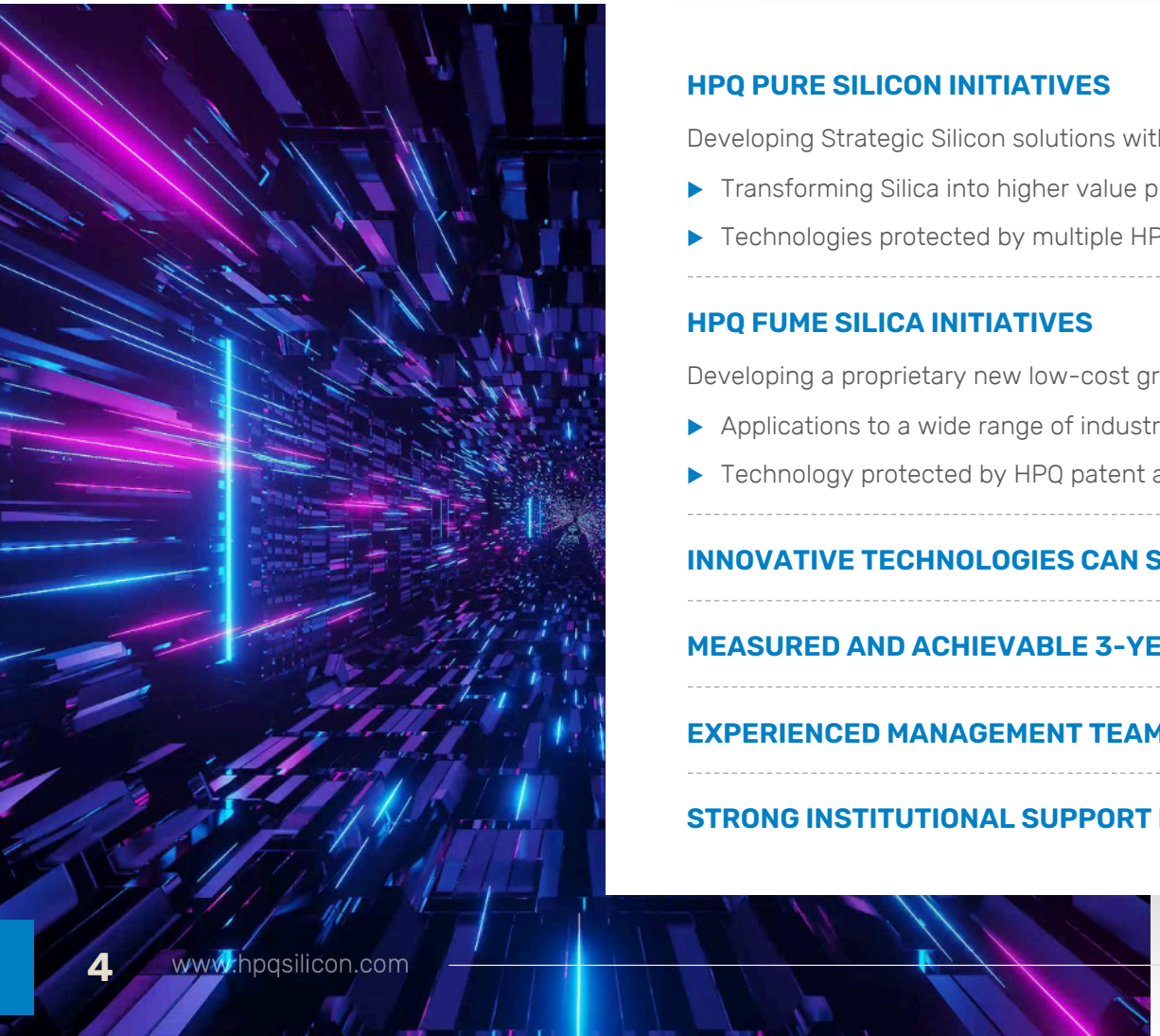
These statements reflect the current expectations or beliefs of HPQ-Silicon Inc. ("the Company") and are based on information currently available to the Company. There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements. All of the forward-looking statements contained in this presentation are qualified by these cautionary statements and the risk factors described above. Furthermore, all such statements are made as of the date this presentation is given.

An investment in the Company is speculative due to the nature of the its business. The ability of the Company to carry out its plans as described in this confidential presentation depends on obtaining the required capital. There is no assurance that the Company will be able to successfully raise the capital required or to complete each of the growth initiatives described. Investors must rely upon the ability, expertise, judgment, discretion, integrity and good faith of the management and Board of the Company.

The Corporation is focused on developing the PUREVAP™ processes. The PUREVAP™ Quartz Reduction Reactor (QRR), (patent granted in the United States and pending in other jurisdictions) a new carbothermic process to transform Quartz into Silicon, and the PUREVAP™ Nano Silicon (Si) Reactor (NSiR), (Provisional Patent applied) a new process to transform Silicon (Si) into Spherical Nano powders and Nano wires for Lithium-ion batteries. The terms Silicon, Silicon Metal and Si are used interchangeably. Metallurgical Grade Silicon or Mg Si refers to Silicon Metal of a purity between 98.0% Si and 99.5% Si.

INVESTMENT HIGHLIGHTS

DEVELOPING NEW TECHNOLOGIES AND PRODUCTS FOR A GREENER FUTURE



HPQ PURE SILICON INITIATIVES

Developing Strategic Silicon solutions with proprietary low-cost transformation technologies

- Transforming Silica into higher value products (for the Battery sector, Silicon Nitride, and more)
- Technologies protected by multiple HPQ owned patent applications

HPQ FUME SILICA INITIATIVES

Developing a proprietary new low-cost green transformation technologies to make Fume Silica

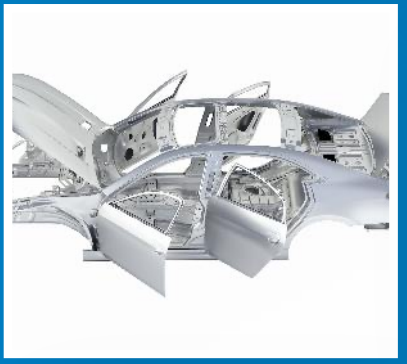
- Applications to a wide range of industries (pharmaceuticals, agriculture, and more)
- Technology protected by HPQ patent application

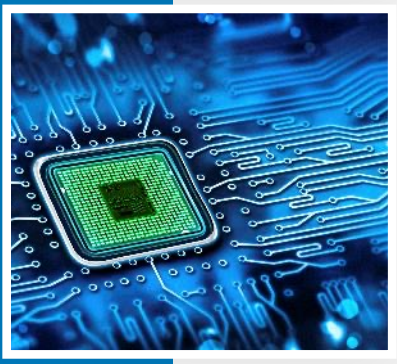
INNOVATIVE TECHNOLOGIES CAN SUPPORT OTHER VERTICALS SUCH A GREEN HYDROGEN PROCESSING

MEASURED AND ACHIEVABLE 3-YEAR GROWTH PLANS FOR COMMERCIALIZING TECHNOLOGIES

EXPERIENCED MANAGEMENT TEAM AND BOARD SUPPORTED BY TECH PARTNER PYROGENESIS CANADA INC

STRONG INSTITUTIONAL SUPPORT FROM MAJOR SHAREHOLDER IQ INVESTISSEMENT QUEBEC





SILICON AND ITS MARKETS

Silicon (Si) or Silicon Metal, is a semi-conductor material and the second most abundant element in earth's crust. Like all other energy metals (lithium, graphite, cobalt, nickel, etc.) it does not exist in its pure state and is expensive to extract!

EU declared Silicon a critical raw material as a wide range of modern technologies depend on it to make various numbers of industrial and consumer products

ESG aspect of its manufacturing and transformation is a key factor for end users

- To extract silicon commercially from Quartz (SiO2) an expensive & energy intensive carbothermic process, first invented in 1899, is still used
- Depending on final application, (Solar, Electronics, Batteries) Chemical grade Silicon (99.5% Si) must either be purified & or engineered

SILICON (Si) DEMAND TO REACH 3.8 MILLION TONNES, WORTH US$ 20 BILLION BY 2025 (Source CRU)

- The bulk of the growth will be driven by demand for chemical grade Silicon
- New plants will be needed to meet demand
- Traditional processes to make Silicon have a significant obstacle for new entrants: access to process know-how
- Most of the "low hanging fruit" have been picked and near-term alternatives to Chinese supply are limited

HPQ SILICON

SILICON CHALLENGES ARE HPQ OPPORTUNITIES

01 THE SILICON MARKET IS RIPE FOR THE DEVELOPMENT OF DISRUPTIVE TECHNOLOGIES

02 HPQ STRATEGIC SILICON SOLUTION INITIATIVES FOCUS ON DEVELOPING THESE DISRUPTIVE TECHNOLOGIES

03 HPQ FIRST DISRUPTIVE TECHNOLOGY : LOW COST 4N+ (99.99%) SILICON

THE PUREVAP™ QUARTZ REDUCTION REACTOR (QRR)

- A new low capex, opex and carbon footprint process to make up to 4N+ Si in one step
- This technology is a unique proprietary process protected by patent applications
- Developing this technology, HPQ is gaining unique Silicon process know-how
- Commercial validation of this new process started Q2 2022
- 4N+ Silicon is HPQ's fundamental product that opens up many high value product lines

Quartz (SiO_2) to High Purity Silicon (Si) – PUREVAP™ QRR Process

SiO2 98.5% + Clean Coal 4,5 MT Needed → PUREVAP QRR Reactor → Energy Consumption : 13,000 kWh needed to produce 1 MT

HPQ SILICON MARKETS & APPLICATIONS

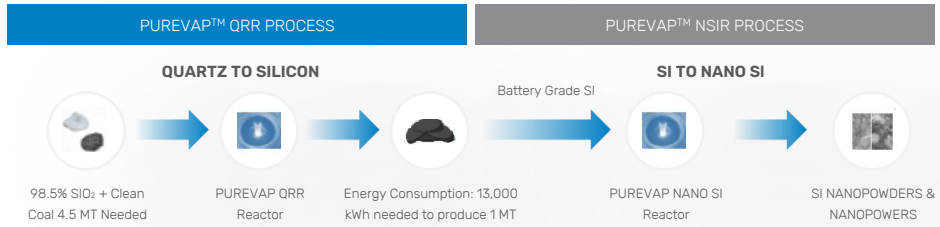
Industrial demand for PUREVAP™ QRR Silicon is large and will be driven by the following factors:

- Demand for High Purity Silicon (99.99% Si) as feedstock to make:
  - Micro size silicon powders for battery applications and other high value applications
  - Nano silicon powder and Nano wires for battery applications
- Auto and EV manufacturers use Metallurgical Grade Silicon (98.5% Si) to make vehicles lighter & stronger
- Demand for Chemical Grade Silicon (99.5% Si) as feedstock to make:
  - Silicones, an end market growing at a 10.7% CAGR, expected to reach US$ 23 B by 2025 (Source marketsandmarkets.com)
  - Polysilicon for solar & electronics, an end market growing at 20% CAGR expected to surpass US$ 200 B By 2026

(Source marketsandmarkets.com)

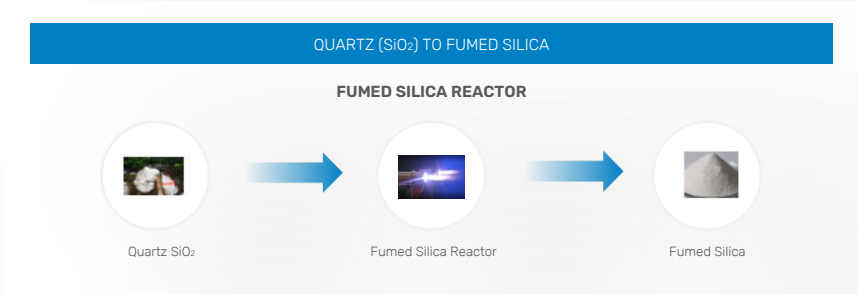
HPQ ALSO DEVELOPING OTHER DISRUPTIVES TECHNOLOGIES NEEDED FOR A GREENER FUTURE

The PUREVAP™ Nano Silicon Reactor (NSiR)



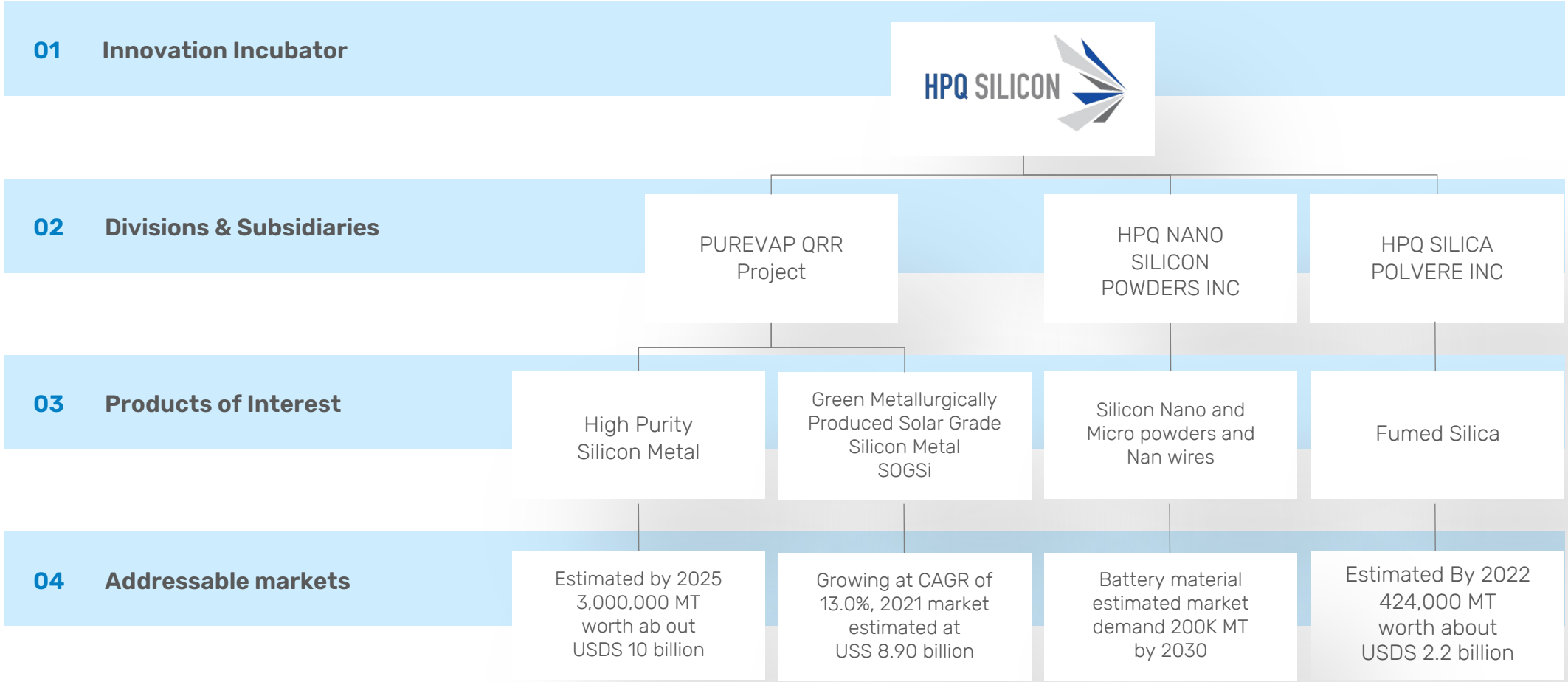
Low-Cost process to transform PUREVAP™ QRR Si into Nano Materials for Batteries

The FUMED SILICA Reactor (FSR)



Low-Cost process to make Fumed Silica without using hazardous chemical

VALUE PROPOSITION: DEVELOP & MONETIZE



HPQ DISRUPTIVE TECHNOLOGIES

PROJECTS 01	DEVELOPING GAME CHANGING TECHNOLOGIES WITH PYROGENESIS SINCE 2015
PUREVAP™ QRR 02 50 MTY Pilot Plant start Q2 2022	From Quartz to High Purity Silicon in one step
PUREVAP™ NSiR 03 Ongoing bench testing	From High Purity Silicon to Nano Materials for Li battery anodes in one step
FUMED SILICA 04 50 MTY Pilot Plant startup Q2 2023	From Quartz to fumed silica in one step
DOWNSTREAM APPLICATIONS 05	Deploying Silicon & Nano Silicon materials in high value applications

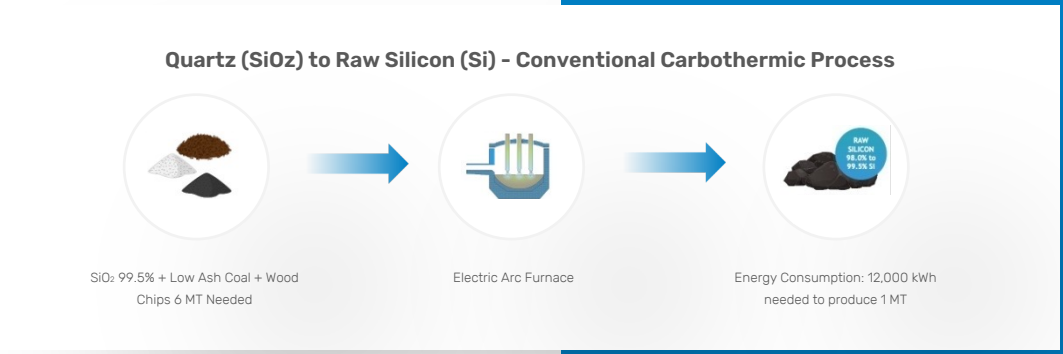
HPQ SILICON

PUREVAP™ QRR – OUR FUNDAMENTAL DISRUPTIVE TECHNOLOGY

GAME CHANGING VERSATILITY VERSUS CONVENTIONAL PROCESS DATING FROM 1899

Conventional plants produce 98 to 99.5 Silicon (Si):

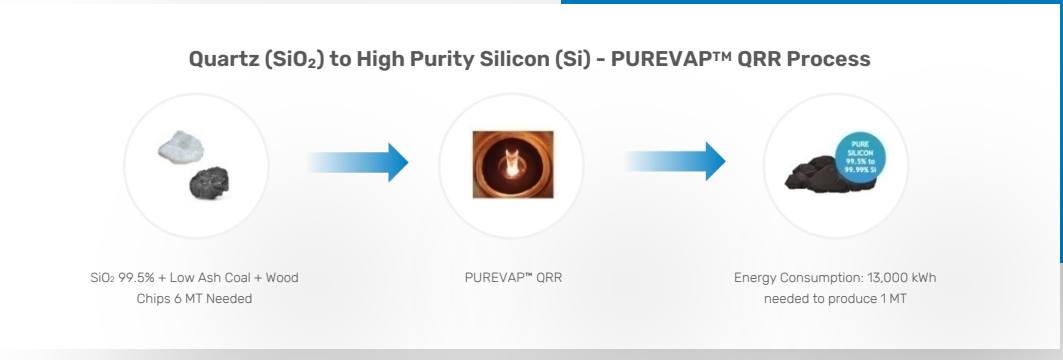
- Scalable by minimum increments of 30,000 MTY
- Minimum investment > US$ 200 M
- 2N+ Si production limited at 40% of plant output
- Requires additional purification steps for Battery use
- Need 6 MT of Feedstock to produce 1 MT
- On average, it costs > US$ 1,800/mt to make 98% Si (Mg Si)



PUREVAP™ QRR: THE BEST OPTION FOR NEW PLANTS NEEDED TO MEET SILICON DEMAND

PUREVAP™ QRR process to produce up to 99.99% Si:

- Scalable by minimum increments of 2,500 MTY
  - Minimum investment 85% - 90% less than conventional plant
- 4N+ Si production in one step
  - Perfect for Battery applications for less than raw silicon
- Need 4.5 MT of Feedstock to produce 1 MT
- New process expected to make 4N Si for < US$ 1,400/mt



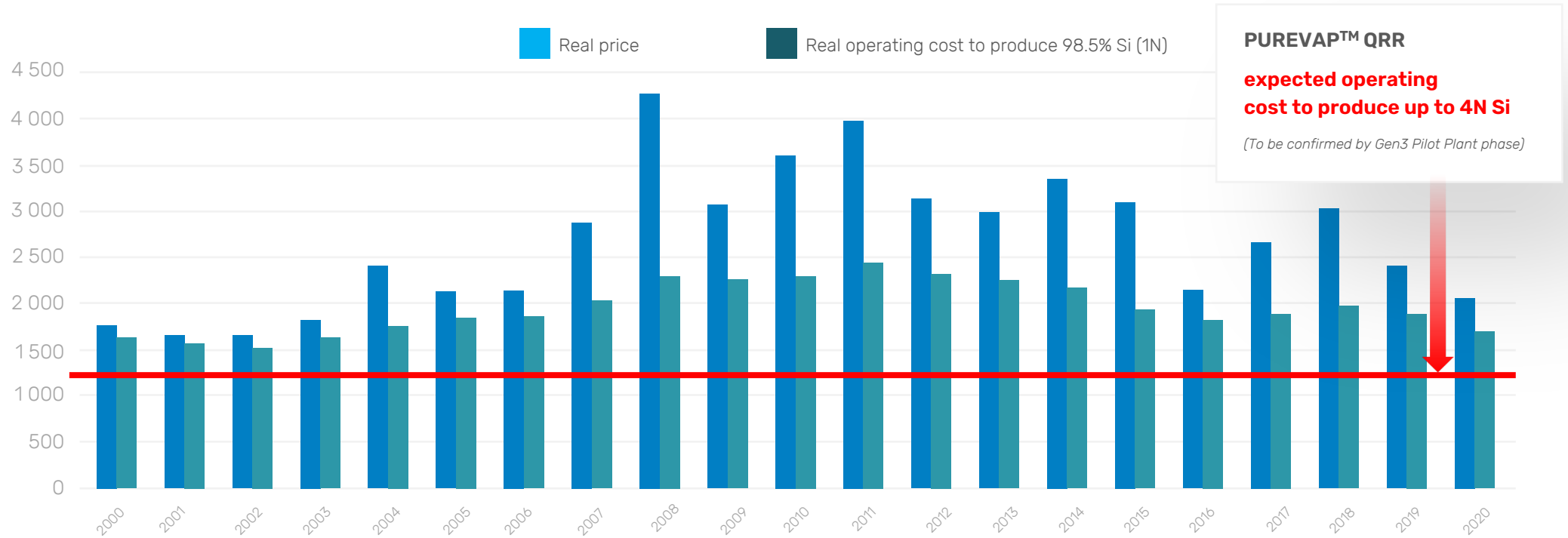
PUREVAP™ QRR – LOW COST, LOW EMISSIONS

PUREVAP™ QRR OPEX VERSUS CONVENTIONAL Si PRODUCERS

Silicon in the 2020s

Inflation-adjusted prices are higher than they were in the early 2000s

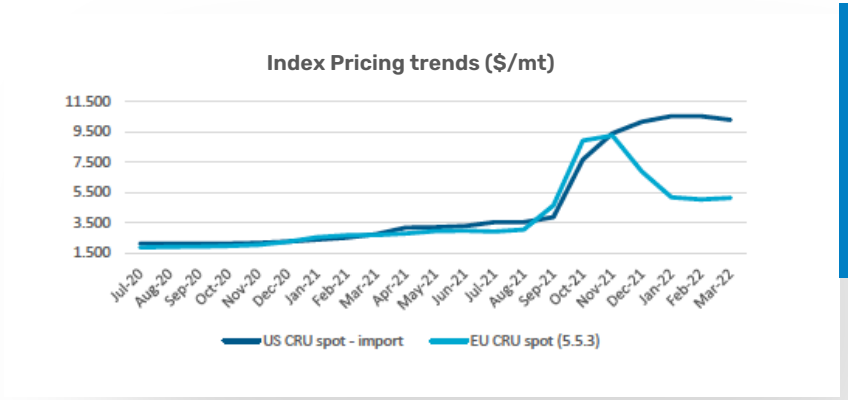
US spot price of 5.5.3 grade silicon vs. avg. operating cost at plants outside China and the CIS in real terms, $/t



(Source: CRU)

PUREVAP™ QRR PILOT PLANT STARTUP END OF Q1 2022

AS US SILICON PRICES ARE TRENDING UP



US SILICON SPOT PRICE REMAINING AROUND US$ 10,000 MT

Source: Ferroglobe, Q1 2022 FS

NEW EMERGING MARKETS FOR SILICON: ENERGY AND BATTERY SECTORS

- Silicon for batteries demand is projected to exceed 200K MT worth ≈ US$ 2.6 B by 2030 (CAGR +50%),

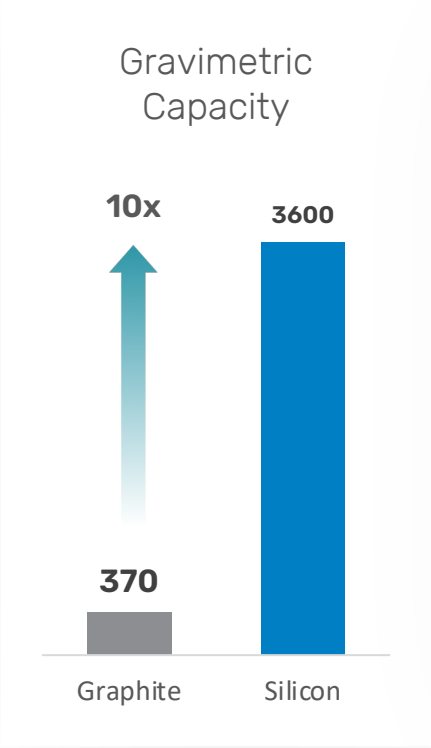
  Source: CRU and Business Korea.co.kr

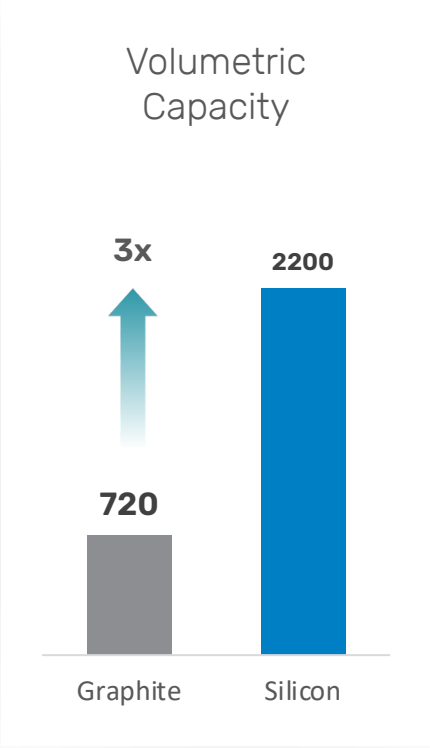
HPQ UNIQUE ADVANTAGES IN THIS NEW MARKET

- **PUREVAP™ QRR** capability to produce 3N to 4N Silicon in one step
- The **PUREVAP™ NSiR**, with a capability to transform the silicon produced by the **PUREVAP™ QRR** into the nano silicon material battery manufacturers are looking for. A perfect demonstration of HPQ Strategic Silicon Solution in action

SILICON NANO POWDERS TO IMPROVE BATTERY CAPACITIES

INNOVATIVE SOLUTION NEEDED FOR COMMERCIAL DEPLOYMENT OF SILICON IN BATTERIES





HPQ is working to be ready to produce, at large scale and at price parity to graphite, the silicon material needed by battery manufacturers

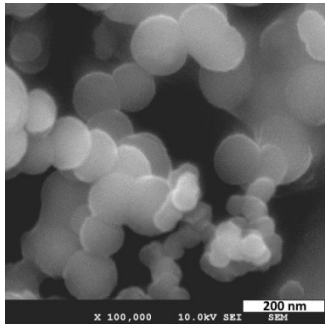
PUREVAP™ NSiR – WHAT THE BATTERY INDUSTRY NEEDS

HPQ NANO DEVELOPING A PROCESS TO PRODUCE THE NANO & MICRO Si MATERIAL NEEDED FOR BATTERIES

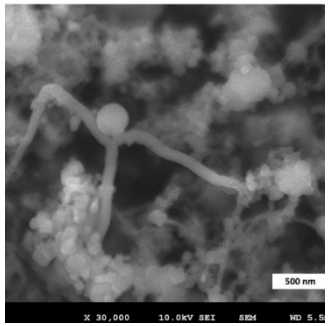
MAKING SILICON MATERIALS FOR BATTERIES

A new scalable, versatile, low-cost plasma process with a capability to produce tailor made spherical Si materials from < 100 nanometer (nm) up to 5 micrometres (µm)

Material produced by **PyroGenesis** during proof of concept test



SILICON NANOPOWDERS



SILICON NANOWIRES

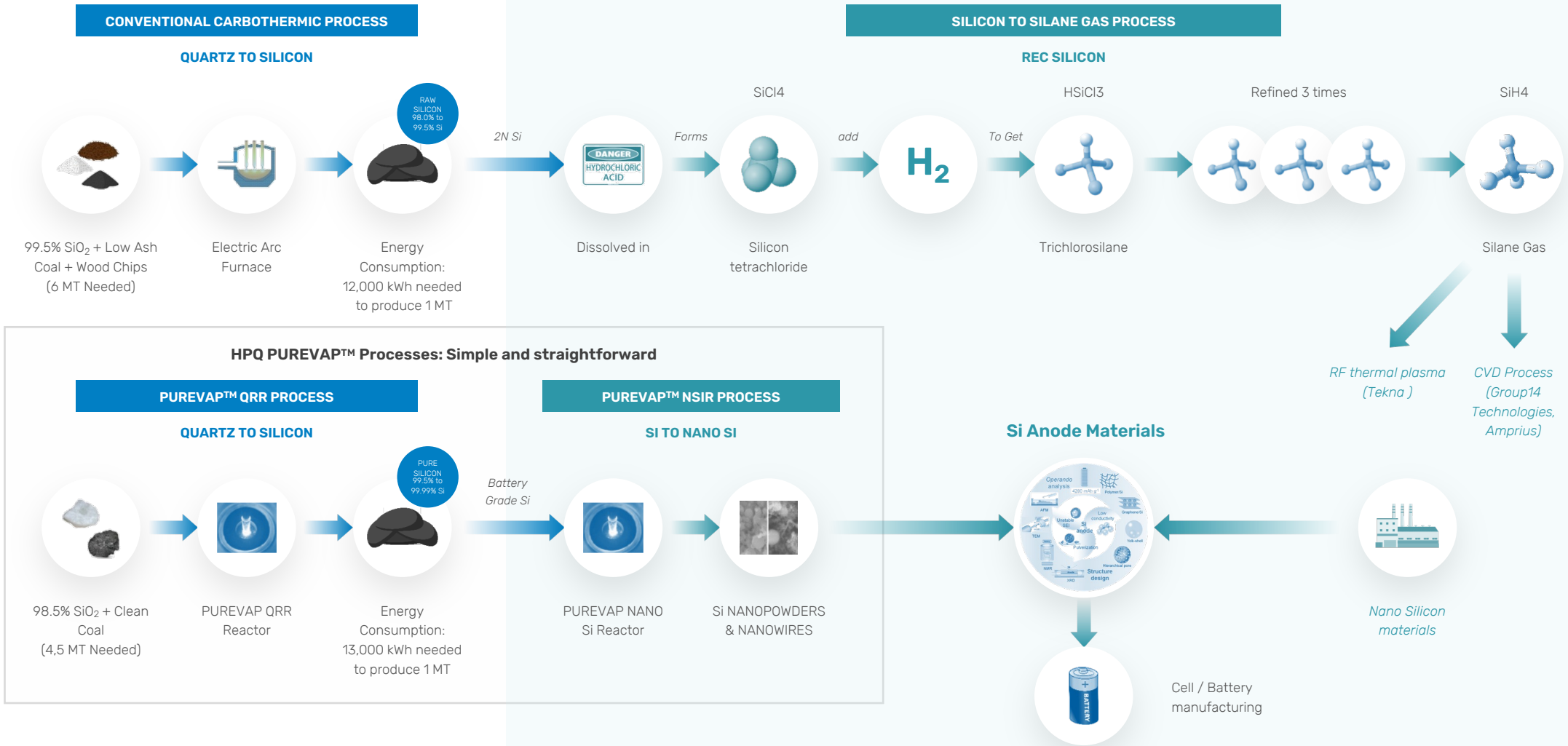
STARTING COMMERCIAL VALIDATION OF A NEW LOW-COST PROCESS

PUREVAP™ NSiR is a game-changing low-cost plasma-based process:

- NSiR can transform HPQ PUREVAP™ QRR battery grade Si into the nano & micro size Si materials that batteries and EV manufacturers are looking for to improve anode efficiency
- NSiR will offer advanced Si material for battery anodes at price parity with graphite

We have already signed 7 NDA's with battery manufacturers and received one order from a major car manufacturer

HPQ NANO SILICON SOLUTIONS VS COMPETITION



QUEBEC AN EMERGING KEY HUB FOR BATTERY SUPPLY CHAIN

HPQ is a Quebec - based company and stands to benefits from these initiatives

Developing a uniquely clean and traceable supply chain

Clean energy

Cathode active materials (LFP)
- Battery material recycling experience
- Licence from HQ

Lithium*
- Green electrolysis transformation and closed loop process Value-added bi-products
- Respects Québec's leading green mining regulations

Recycled active materials (Ni, Co, Mn, Li)
- Recycles 95% of EV battery components at battery grade purity
- Hydrometallurgical process

Natural graphite*
- Carbon-neutral all-electric transformation – no petroleum products
- Innovative tailings management – waste collected and sold as bi-product

Silicon
- Tekna (nano-silicon powder, plasma process), HPQ Silicon, NanoSiEnergy. Ferroglobe Québec and Elkem have the expertise

Cathode active material

Anode active material

Cell

Clean Process

Traceability is key
- Québec's goal is to become the **1st location in North America to provide traceability for green batteries**
- Québec is home to OPTEL Group, a leading global provider of traceability systems, and many more!

OPTEL

* In development.
Source: Ministère de l'Énergie et des Ressources naturelles, "Québec Plan for the Development of Critical and Strategic Minerals 2020-2025 (QPDCSM)", 2021.

Investissement Québec International

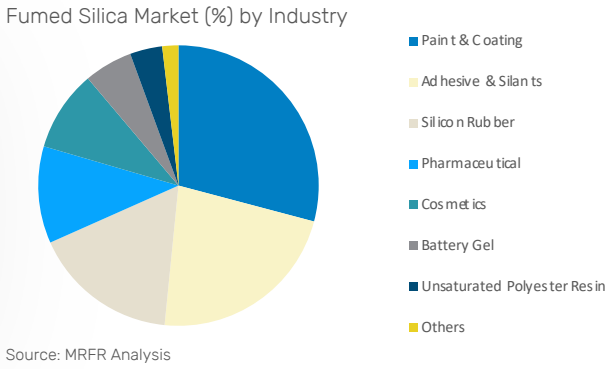
Québec

HPQ SILICON

FUMED SILICA REACTOR: ANOTHER DISRUPTIVE TECHNOLOGY

- Fumed Silica (Pyrogenic Silica) is a versatile value-added white microscopic powder with high surface area & low bulk density
- Due to its unique properties commercial applications encompass various industries including personal care, pharmaceuticals, agriculture (food & feed), adhesives, sealants, construction, batteries and automotive to name a few

	REAL 2016		PROJECTION 2016	
Fumed Silica Market	Quantity MTY	Value (USD)	Quantity MTY	Value (USD)
Global	300,000	1,500 million	425,000	2,263 million
North American	59,100	416 million	76,000	575 million
Canadian	19,300	136 million	24,400	185 million



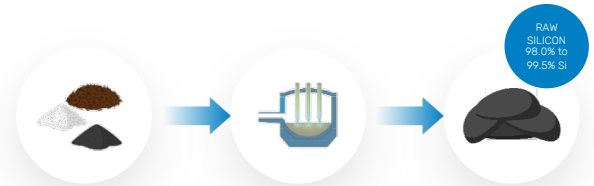
Source: MRFR Analysis

- In 2021, HPQ signed an agreement with PyroGenesis covering the development of a new Fumed Silica Reactor development program and the future commercialisation of fumed silica materials produced by the process
- Included in the agreement, the $2 million stated cost of construction and operation of a 50 mt per year commercial pilot plant will be covered by the following parties:
  - The Federal Government of Canada (SDTC) will pay ≈ 33% of the cost,
  - The Quebec Government (TED) will pay ≈ 30% of the cost,
  - HPQ Silica Polvere Inc (an HPQ subsidiary) will pay ≈ 29% of the cost, and
  - PyroGenesis Canada Inc will cover the remaining ≈ 8% and act as operator

TRADITONAL FUMED SILICA PROCESS VS NEW PROCESS

QUARTZ (SiO2) TO SILICON (Si)

CONVENTIONAL PROCESS TO MAKE SILICON



99.5% SiO2 + Low Ash Coal + Wood Chips 6 MT Needed

Electric Arc Furnace

Energy Consumption: 12,000 kWh needed to produce 1 MT

2N Si

Dissolved in

Forms

SiCl4

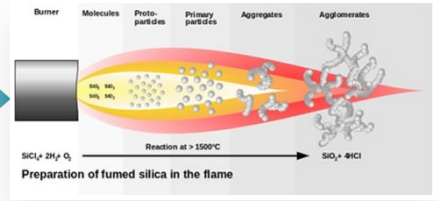
Silicon tetrachloride

add

H_2
O_2

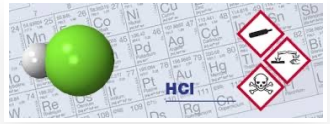
SILICON TO SILANE GAS PROCESS

CONVENTIONAL PROCESS TO MAKE FUMED SILCIA



Energy Consumption: 98,000 kWh needed to produce 1 MT of Fumed Silica

Fumed Silica

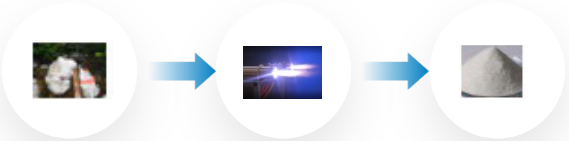


Hydrogen Chloride Gas

HPQ: Simple and Straightforward Solutions

QUARTZ (SiO2) TO FUMED SILICA

FUMED SILICA REACTOR



Quartz SiO2

Fumed Silica Reactor

Fumed Silica

Energy Consumption: 15,000 kWh needed to produce 1 MT

- The new plasma-based process allows a direct Quartz to Fumed silica transformation
  - Removing the need for hazardous chemicals in the Process, and
  - Eliminating Hydrogen Chloride Gas (HCl) releases
- New process requires 15,000 kWh/MT, versus 110,000 kWh/MT for traditional process
  - A staggering 86% reduction in the energy footprint
- The process feedstock is Quartz not Silicon, this will make its Capex a small fraction of what is required to build a traditional Fumed Silica plant

HPQ SILICON

OTHER HPQ OPPORTUNITIES

COMPLEMENTARY HYDROGEN VENTURES

HPQ is exploring hydrogen-based ventures, that could be complementary to its Silicon / Silica projects

Two processes under evaluation:

01. Swiss based company EBH_2 Systems SAS to evaluate green hydrogen technology

- Working together to develop an industrial scale EBH2 system to power HPQ PUREVAP™ QRR & NSIR processes and thereby produce the greenest silicon materials

02. Developing our processes of making hydrogen via hydrolysis of nanosilicon materials made by our PUREVAP™ NSiR

HPQ INNOVATIONS: INDICATIVE TIMELINE

STARTED IN 2015, HPQ HAS IMPLEMENTED AN INNOVATION DRIVEN TECHNOLOGY DEVELOPMENT STRATEGY

PROJECTS	2022	2023	2024	2025
PUREVAP™ QRR	Gen3 commissioning	Gen3 QRR Pilot plant validation of technology, commercial scaling up decision	Gen4 PUREVAP™ QRR commercial plant (s) Engineering– Construction – Commissioning	Start of commercial production
		Using Gen3 High Purity Silicon to make micron size powders for Batteries and Silicon nitride markets	Evaluate the option of continuing using Gen3 High Purity Silicon to make micron size powders for Batteries and Silicon nitride markets	
PUREVAP™ NSiR	Gen1 NSiR tech development	Gen2 NSiR proof of commercial scalability Engineering – Construction – Commissioning	Gen2 NSiR Ops. Pilot Plant decision	Engineering – Construction – Commissioning of Gen3 NSiR Pilot Plant
		Gen1 NSiR to make nano size silicon materials for batteries anode manufactures		Using Gen2 NSiR then Gen3 NSiR to transform QRR silicon into nano & micro size silicon materials for batteries anode manufactures
FUMED SILICA	Engineering – Construction – Commissioning of Fumed Silica Pilot Plant		Pilot plant validation of technology & commercial scaling up decision	Fumed Silica commercial plant (s) Engineering – Construction – commissioning
			Using Fumed Silica Pilot plant to produce materials for potential end buyers	
OTHER TECHS		EBH2 Technology validation		
		Developing high value applications usage for HPQ Silicon and Nano Silicon (Porous Silicon, Silicon for Hydrogen, and others)		

HPQ SILICON

— UPCOMING CATALYSTS

01. PUREVAP™ QRR Project

- [x] End of Commissioning – Pilot Plant Functional
- [ ] Pilot Plant Operational – First Material Produced
- [ ] Production of 3 and 4 N Silicon
- [ ] Production of micron size silicon powders samples for batteries and Silicon Nitride (Si3 N4) markets

02. PUREVAP™ NSiR Project

- [ ] Engineering, construction and commissioning Gen2 NSiR proof of commercial scalability pilot
- [ ] Production of nano size silicon materials samples for potential end buyers

03. EBH_2 Project

- [ ] Second validation tests

HPQ CAPITAL STRUCTURE

Major Investors	Basic	Fully Diluted
Management & Board	6,3%	10,4%
PyroGenesis Canada Inc.	8,7%	10,4%
IQ (Investissement Québec)	8,4%	7,0%
Strategic Investors	10,9%	10,0%

	52 weeks		
	Price	Low	High
(As of July 25, 2022)	$ 0,290	$ 0,265	$ 0,83

	Million
Basic Shares Outstanding	348,6
Options (Average Price $0.61 / Duration 2,71 years)	17,6
Warrants (Average Price $0.306)	25,0
Fully Diluted Shares Outstanding	391,1
Market Capitalization (Basic)	101,0
Market Capitalization (Fully Diluted)	113,4
Cash and Cash equivalent available for projects advancements	11,2

MANAGEMENT, BOARD & OTHERS

Management

- **Bernard J. Tourillon, BAA, MBA**
  Chairman, President, CEO and Director
- **Noelle Drapeau, LLL, MBA, PMP**
  Corporate Secretary and Director
- **Francois Rivard**
  VP, CFO
- **Derick A. Lila, MSc, MA**
  Director Marketing Communications

Independent Directors

- **Richard Mimeau, B.Sc.**
  Director
- **Peter Smith, PhD, P. Eng.**
  Director
- **Robert Robitaille, M.B.A., L. Ph.**
  Director
- **Daryl Hodges H. BSc, M.Sc.**
  Director
- **Patrick Levasseur**
  Director, Special Consultant to the CEO

Consultants/ Technical Advisors

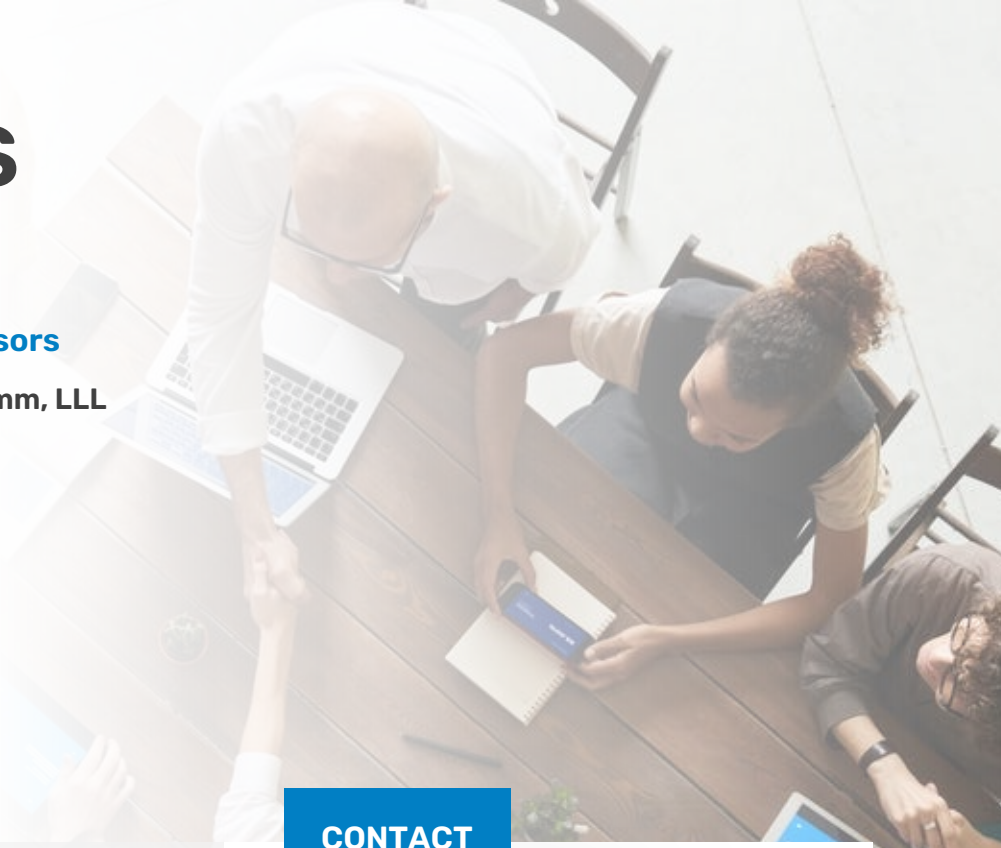
- **Marcel Drapeau, BA, BSC. Comm, LLL**
- **PyroGenesis Canada Inc**

Transfer Agent

- **Computershare**

Auditors

- **KPMG S.E.C.N.R.L.**



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