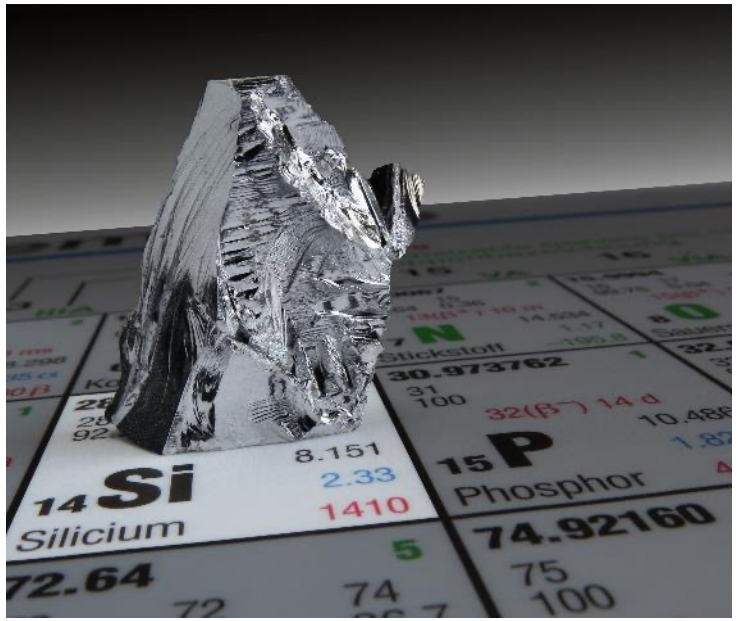
HPQ SILICON



GREEN ENGINEERING SILICA AND SILICON MATERIALS TECHNOLOGY

HPQ LISTED TSXV

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HPQ - A TECHNOLOGY PROCESS INNOVATOR COMPANY FOCUSED ON GREEN ENGINEERING PROCESSES

TRANSFORMING THE GLOBAL ECONOMY TO ACHIEVE NET-ZERO EMISSIONS BY 2050

- Will require US $9.2 trillion in annual average spending on physical assets
- Representing an increase of US$ 3.5 trillion compared to current spending levels

McKinsey & Company – The net zero transition January 2022

HPQ DEVELOPING NEW GREEN PROCESSES CRUCIAL FOR REACHING THAT GOAL:

- Focuses on environmentally friendly processes
- Leverages advanced technologies and expertise
- Aims to make critical materials needed for net-zero emissions
- Contributes to the global effort of achieving net-zero emissions
- Involves collaboration with world-class technology partners

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 as of October 20, 2023. 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 forward-looking statements 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 presentation depends on obtaining the required capital. There is no assurance that the Company will be able to raise the capital required successfully 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 a technology company engaged in green engineering processes that is: 1) Developing the Fumed Silica Reactor (FSE), a new plasma process that will allow a direct Quartz to Fumed Silica transformation; 2) Developing the PUREVAP™ Quartz Reduction Reactor (QRR), a new carbothermic process to transform Quartz into green Silicon (patent granted in the United States & pending in other jurisdictions); 3) Aiming to become a manufacture of green Silicon anode materials; 4) Working with NOVACIUM SAS developing a compact process for the production of green hydrogen via hydrolysis of silicon and other materials; and 5) Developing the PUREVAP™ Nano Silicon (Si) Reactor (NSiR), (Patent Pending) a new process to transform Silicon (Si) chunks into Spherical Nano powders and Nano wires for the next generation of 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. High Purity (HP Si) or Upgraded Metallurgical Grade Silicon (UMG Si) refers to Silicon Metal of a purity between 99.9% Si and 99.99% Si.

— INVESTMENT HIGHLIGHTS

HPQ - GREEN ENGINEERING VERTICALS

HPQ GREEN FUMED SILICA INITIATIVES

Green engineering Fumed Silica manufacturing directly from Quartz using proprietary new low-cost one-step process

- Material produced has applications in a wide range of industries (pharmaceuticals, agriculture, renewables and more)
- One-Step Plasma based process, no hazardous chemical, no HCl release, 86% reduction in energy & related carbon footprint
- Technology protected by HPQ-owned patent application

HPQ GREEN SILICON INITIATIVES

Green engineering Silicon manufacturing with proprietary low-cost transformation technologies

- Transforming Silica (Quartz, SiO_2), in one step, into High Purity Silicon (3N+ Si) in a greener and more efficient manner
- Manufacturing Silicon material perfectly suited for high values applications (SiOx for Batteries, Silicon Nitride, and more)
- Technologies protected by multiple HPQ and Novacium owned patent applications

HPQ GREEN HYDROGEN - A NEW CHEMICAL BASE APPROACH TO MAKE HYDROGEN WITHOUT ELECTRICITY

Developing, with Novacium SAS, a new autonomous process to make hydrogen via hydrolysis of Silicon & other materials

MEASURED AND ACHIEVABLE 3-YEAR GROWTH PLANS TO START COMMERCIALIZING OUR TECHNOLOGIES

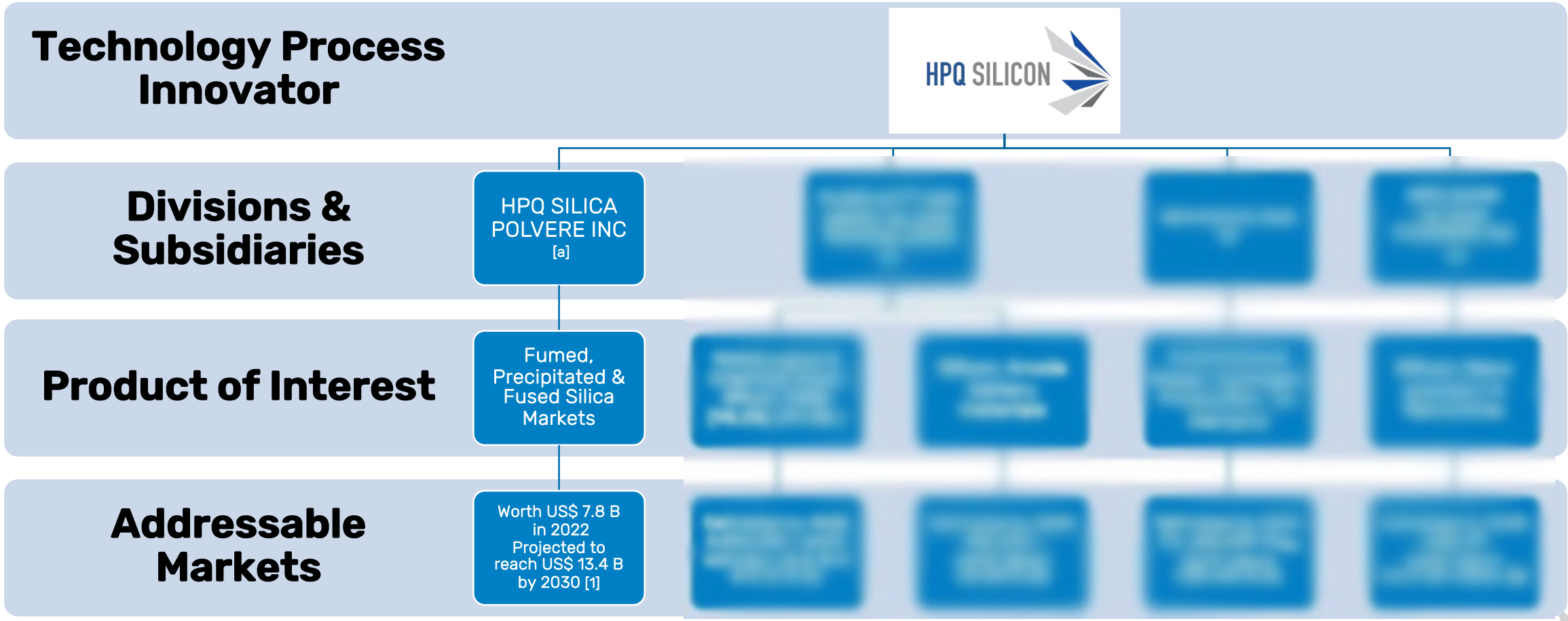
EXPERIENCED MANAGEMENT TEAM & BOARD SUPPORTED BY TECH PARTNER PYROGENESIS CANADA INC

STRONG INSTITUTIONAL SUPPORT FROM MAJOR SHAREHOLDER IQ INVESTISSEMENT QUEBEC

HPQ SILICON

— GREEN FUMED SILICA INITIATIVE

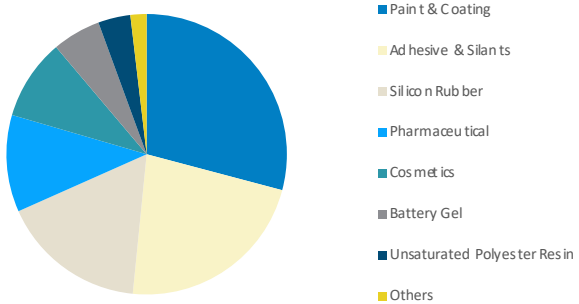
- **Commercial grade Fumed Silica material produced at lab scale – Samples sent to multiple third parties under NDA in 2023**
- **Pilot plant to validate scalability of Fumed Silica Reactor process Q2-Q3 2024**
- **Commercialisation: Securing off-take agreement early 2024, starting small scale commercial production end Q4 2024**



— FUMED SILICA REACTOR: A GREEN 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
- In 2022, sales of Fumed silica, also known as Pyrogenic Silica, reached US$1.3 billion [1], accounting for about 16% of the total US$7.8 billion Specialty Silica Market [2]
- The remaining 84% (US$6.5 billion) comprises other materials, such as Precipitated Silica, Fused Silica, Silica Gel, and Colloidal Silica.
- The Specialty Silica Market is expected to grow to US$13.4 billion by 2030, with a projected Compound Annual Growth Rate (CAGR) of 7.0% [3].

Fumed Silica Market (%) by Industry



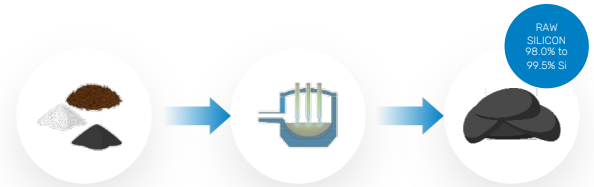
Source: MRFR Analysis

- In 2021, HPQ signed an agreement with PyroGenesis covering the development of a new Fumed Silica Reactor and the future commercialization of silica materials (Fumed, Precipitated and Fused Silica) produced by the process.
- Included in the agreement, the $2 million stated cost of constructing and operating the 50 tonnes per year (TPY) 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
- In 2023, commercial grade fumed silica was produced using a lab scale Fumed Silica Reactor.
- In Q3 2023, samples were sent to multiple major Fumed Silica producers under NDA for analysis and review of commercial potential

— TRADITIONAL 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

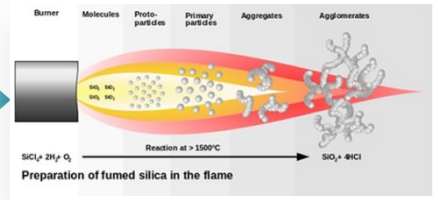
Energy Consumption: 12,000 kWh needed to produce 1 MT

Dissolved in

Silicon tetrachloride

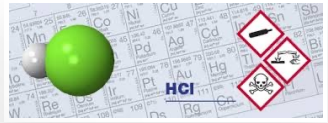
SILICON TO SILANE GAS PROCESS

CONVENTIONAL PROCESS TO MAKE FUMED SILCIA



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

Fumed Silica



Hydrogen Chloride Gas

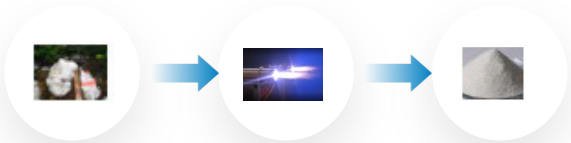
A NEW GREEN PLASMA-BASED PROCESS

- That allows a direct Quartz to Commercial Grade Fumed silica transformation
- Process could also allow Quartz to Precipitated and/or Fused Silica transformation
- Eliminate the Quartz to Silicon phase
  - Reduce direct CO_2 emission by over 60% [1]
  - Remove the need for hazardous chemicals in the process
  - Eliminate Hydrogen Chloride Gas (HCl) releases, and
  - Reduce Capex to a small fraction of Capex required to build a new traditional plant
- Process only requires 15,000 kWh/MT, vs 110,000 kWh/MT for traditional process
  - An 86% reduction in the energy footprint, reducing even more indirect CO_2 emissions

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

HPQ SILICON

FUMED SILICA INDICATIVE TIMELINE

- **Fast track to commercialisation and monetization**

PROJECTS	2023		2024		2025		2026
FUMED SILICA	Small scale testing of different Fumed Silica Pilot Plant configurations	Engineering – Construction – Commissioning of Fumed Silica Pilot Plant	Pilot plant validation of technology	Producing Fumed Silica scale stating at 50 TPY	conceptual and feasibility engineering studies to scale up to 250 TPY per unit	Equipment Procurement	250 TPY Fumed Silica commercial plants Construction – Commissioning

FUMED SILICA INITIATIVE UPCOMING CATALYSTS

- Finalize design choice for the Fumed Silica Reactor pilot plant
- Finalize equipment decision and procurement process
- Finalize ongoing small-scale testing
- Produce commercial grade Fumed Silica at lab scale
- Send Samples to multiple Companies under NDA involved in Fumed Silica
- Negotiate Offtake or other type of transaction with a party under NDA
- Building and commissioning test a pilot plant
- Start testing program to produce 170 kg/day continuous feed, thereby validating scalability of Fumed Silica Reactor
- Validate that the Fumed Silica Reactor can also produce Precipitated and fused silica
- Start commercial production and selling of Fumed Silica

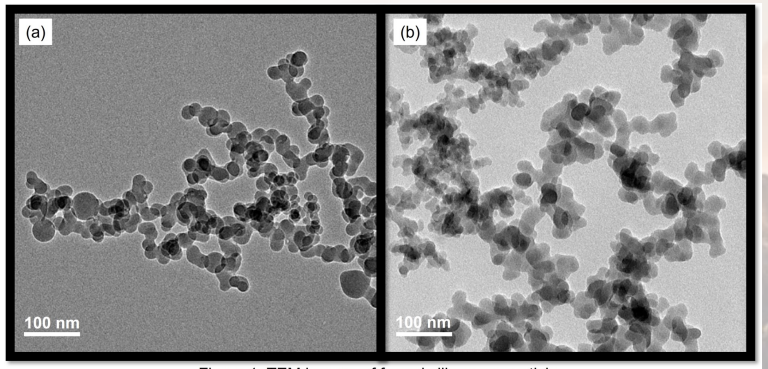
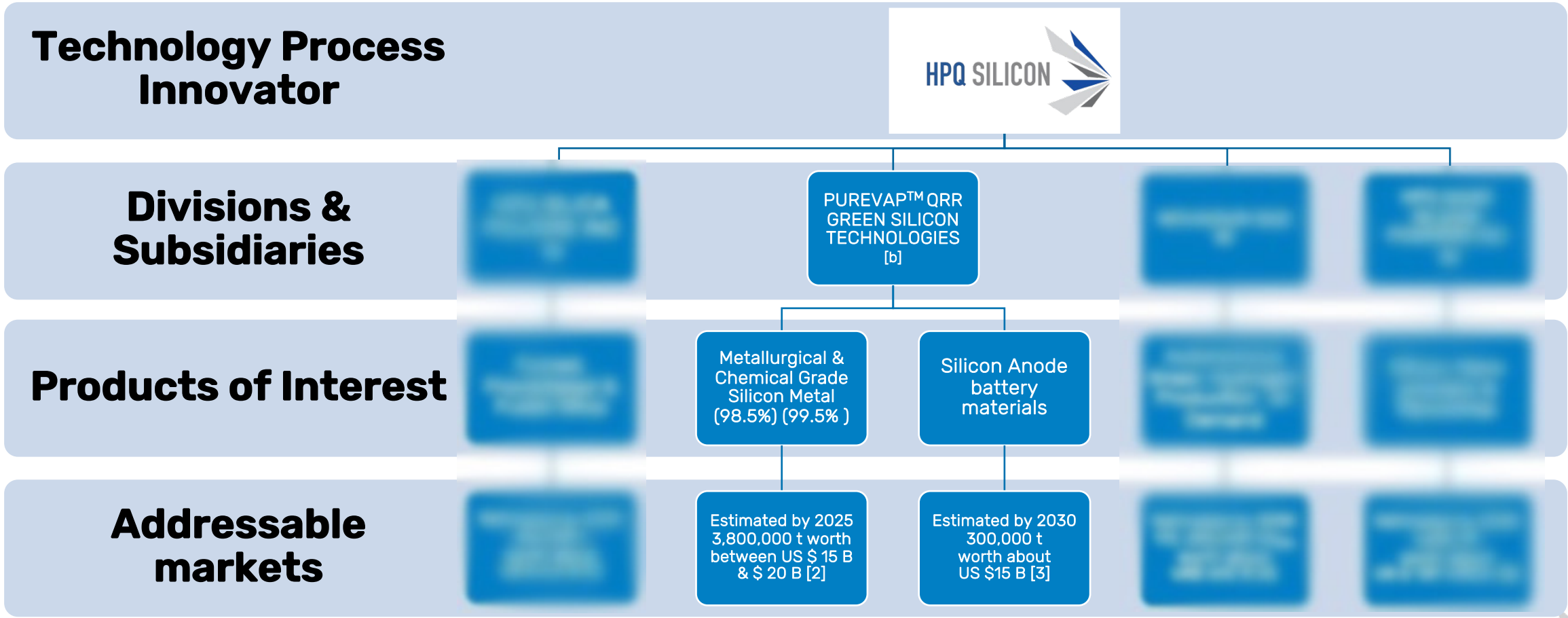
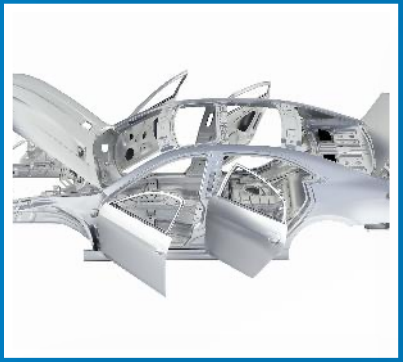


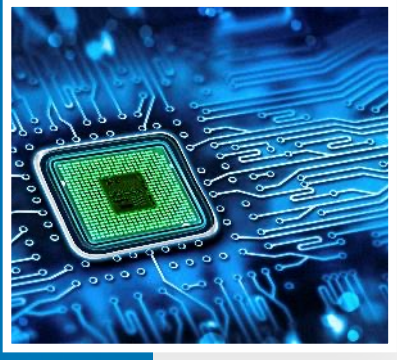
Figure 1. TEM images of fumed silica nanoparticles, (a) from HPQ Silica Polvere, (b) commercially available material

— GREEN SILICON INITIATIVE

- **PUREVAP™ QRR STATUS: Pilot plant and pre-commercialisation phase – Goal: commercial scale production by 2026**
- **SILICON ANODE BATTERY MATERIAL STATUS: Material ready for testing end 2023 – 200 TPA plant planned end 2024**







— 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!

The United States, the EU and Australia have 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

Environmental issues related to Silicon manufacturing processes presently available are becoming 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

Metallurgical and Chemical grade Silicon (Si) demand estimated to reach 3.8 M tonnes, worth between US$ 15 B and US$ 20 B, by 2025 [1]

- The bulk of the growth will be driven by demand for chemical-grade Silicon (99.5% Si)
- 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" has been picked, and near-term alternatives to Chinese supply are limited

— SILICON CHALLENGES HPQ OPPORTUNITIES

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

02 HPQ GREEN ENGINEERING IS FOCUSED ON DEVELOPING NEW GREEN PROCESS TO MAKE SILICON

03 HPQ : LOW-COST GREEN MANUFACTURING OF HIGH PURITY SILICON

THE PUREVAP™ QUARTZ REDUCTION REACTOR (QRR)

- A low capex, opex & carbon footprint process to make up to 4N+ Si in one step
- Multiple patent applications protect this technology's proprietary process
- HPQ is gaining unique Silicon process know-how
- Significant strides are being made toward commercial validation
- HPQ Green 3N to 4N+ Silicon opens many unique high-value product lines

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

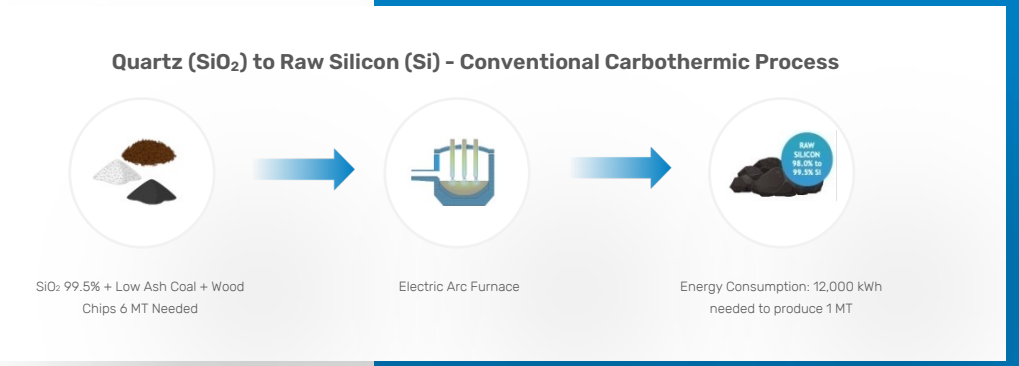
SiO_2 98.5% + Clean Coal 4,5 MT Needed → PUREVAP QRR Reactor → Energy Consumption : 13,000 kWh needed to produce 1 MT

— PUREVAP™ QRR - A UNIQUE SCALABLE PROCESS

A NEW AND INCREDIBLY VERSATILE PROCESS VERSUS CONVENTIONAL PROCESS DATING FROM 1899

Conventional plants produce 98 % to 99.5 % Purity Silicon (Si):

- Scalable by minimum increments of about 40,000 tonnes per year (TPY)
  - Minimum investment needed to build a new plant around US$ 300 M [1]
- Need 6 tonnes (t) of Feedstock to produce 1 t of Silicon (Si) [2]
- On average, it costs about US$ 2,000/t to make 98% Si (MG Si) [3]
- 2N+ (99.5%) Si production requires oxidative refining increasing opex cost
- 3N+ (99.9%) Si requires additional purification further increasing its costs



PUREVAP™ QRR process can produce 99.9+ % Silicon (Si) in one step:

- Scalable by minimum increments of up to 2,500 TPY per QRR Reactor
  - Minimum investment 85% - 90% less than conventional plant [4]
- Only need 4.5 t of feedstock to produce 1 t of Si
  - 3N to 4N+ Si produce in one step using 25% less feedstock,
    - Could translate into a ≈ 10% opex cost reduction [5]
- QRR process expected to make 3N to 4N Si for < US$ 2,000/t [6]
- HPQ QRR will make silicon-based materials perfectly suited for battery and other high-value applications for less than any competitors

HPQ SILICON

— PUREVAP™ QRR – AND THE GREENEST PROCESS !

USHERING ZERO CO_2 SILICON METAL MANUFACTURING

Conventional Silicon production emits 105 million tonnes CO_2 per year worldwide [1]

- Silica (SiO_2) reduction requires a carbon reductant (Coal, Coke, or Charcoal)
- Conventional processes are done in Open Electric Arc Furnaces (OEAF) at high temperatures > 1,800 C
- The carbothermic process alone results in 5 tonnes (t) of CO2 emissions per tonne (t) of silicon produced [2]
- Only one option to reduce the carbothermic carbon footprint it's replacing fossil-based carbon with an organic carbon source [3]
- While mitigating a part of their overall carbon footprint, it will never allow conventional silicon producers to produce zero CO_2 emissions silicon metal

PUREVAP™ QRR ZERO CO_2 SILICON METAL MANUFACTURING

- The QRR, by design, is a Closed Electric Arc Furnace (CEAF) with the ability to operate under controlled atmospheric condition
- The CO(g) generated during the carbothermic reaction remains unoxidized by oxygen and can be readily captured for further utilization
- By using an organic carbon source, the QRR will produce Zero CO_2 Silicon Metal and could even generate Carbon Credits

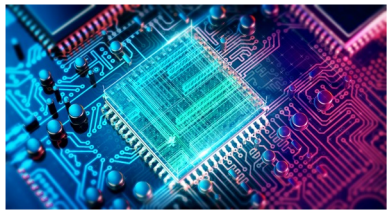
HPQ intends to commercialize its Zero+ CO_2 Silicon Metal under the brand name *SILICIUM$_X$*

— HPQ SILICON MARKETS & APPLICATIONS

The market opportunities for HPQ Green Silicon or *SILICIUM$_X$* are vast and will be propelled by the following key factors:

- Demand for GREEN High Purity Silicon (3N to 4N Si) ***SILICIUM$_X$*** as feedstock to:
  - Low carbon Silicon base anode material for Li-Ion batteries
  - Low carbon Silicon for high-value applications like Silicon Nitride
- Auto & EV manufacturers could use HPQ Metallurgical Grade Silicon (98.5% Si) ***SILICIUM$_X$*** to make their vehicles lighter, stronger, while reducing their carbon footprint
- Chemical Grade Silicon (99.5% Si) demand is driving a need for new plants because of its usage as feedstock to make:
  - Silicones, an end market growing at a 7.4% CAGR, expected to reach US$ 30.9 B by 2030 [1]
  - Polysilicon for solar & electronics, an end market growing at 13.2 % CAGR expected to surpass US$ 27 B By 2030 [2]

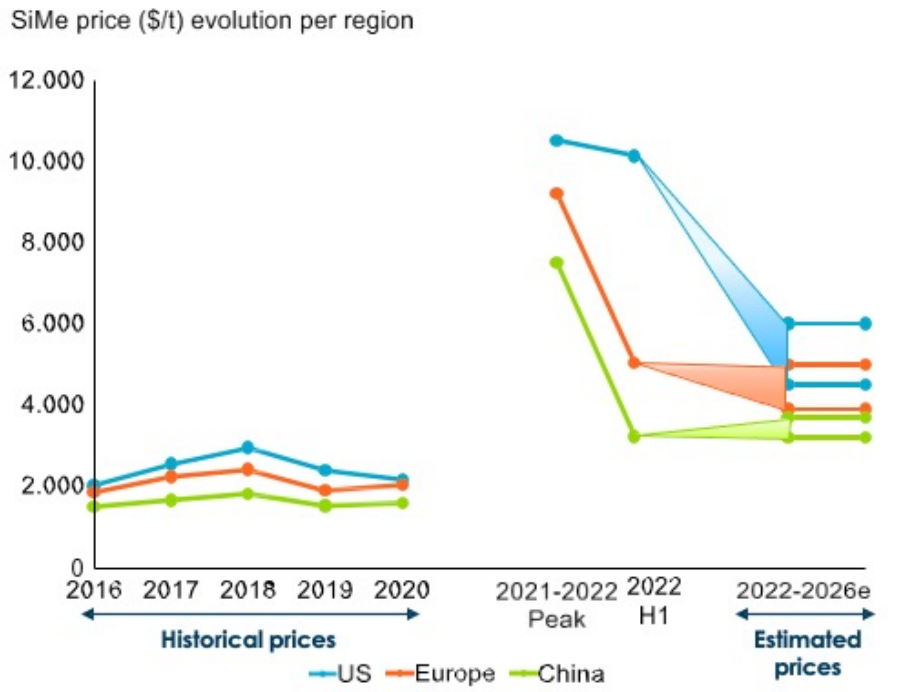
HPQ PUREVAP™ QRR: THE ONLY ZERO CO_2 EMISSION OPTION FOR THE NEW PLANTS NEEDED TO MEET SILICON DEMAND



HPQ SILICON

— PUREVAP™ QRR – a technology suited for today Si Global trends

Business environment for Silicon driven by global trends combined with structural industrial changes



[1]

SILICON GLOBAL TRENDS

1. Strong demand fundamentals worldwide in all sector
   (Polysilicon, Silicones, aluminium and EV transition)
2. Increase costs and volatility of key inputs
   (Energy, quartz, coal, and CO_2 Pricing)
   - Advantage QRR – Uses 25% less feedstock
   - Advantage QRR – Only carbon free process available
3. Limited capacity coming online
   - Advantage QRR – Scalable process – small capex to enter
4. Reduction of Chinese exports due to local demand
5. Demand plus reshoring = demand for new plants
   - Advantage QRR – First new process in over 100 years
6. Growing emphasis on decarbonization
   - Advantage QRR – Only carbon free process available

[2]

— PUREVAP™ QRR INDICATIVE TIMELINE

- **HPQ commercialisation plans well positioned to capitalize on Silicon market opportunities**

PROJECTS	2023	2024	2025	2026
PUREVAP™ QRR	*Gen3 QRR* Pilot plant technology validation	Gen3 QRR testing and 3N+ Silicon Manufacturing Gen4 Conceptual engineering Studies	*Gen4 Preliminary* Engineering Studies *Gen4* Equipment Procurement & Financing	*Gen4 PUREVAP™ QRR* commercial plant (s) Construction – Commissioning	Start of commercial production

QRR PILOT PLANT MILESTONES REACHED TO DATE

- The pilot plant started and produced 2N+ Silicon in one step from the start
- Validated the 2,500-time scale-up from the *GEN2 PUREVAP™ QRR*
- Validated semi-continuous batch production capability of the reactor
- Produced 3N+ Silicon (battery-grade silicon) in one step
- Completing a successful Silicon pour

QRR UPCOMING CATALYSTS

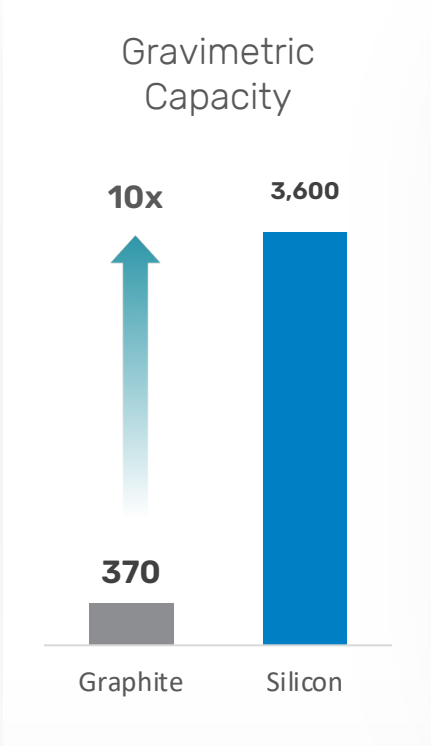
- Operating the system commercially (6 continuous production cycles per day, with each cycle yielding 20 kg of Silicon per pour)
- Producing Silicon materials for HPQ Silicon anodes initiative
- Starting Gen4 Conceptual Engineering studies
- Securing grant financing for the proof-of-concept studies related to HPQ Green Silicon capability
- Starting the proof-of-concept studies related to HPQ Green Silicon initiative

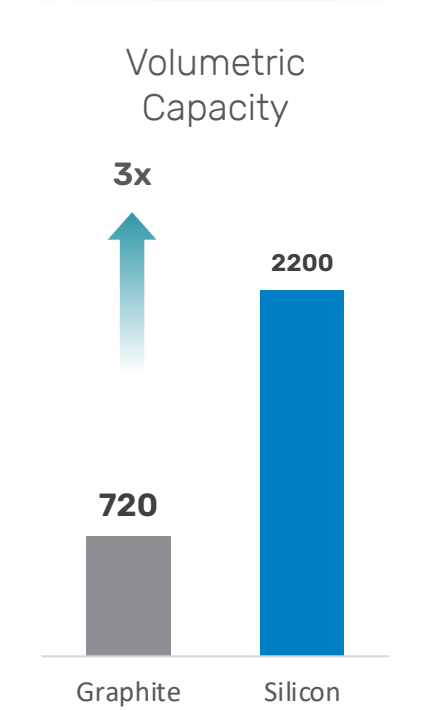
— HPQ SILICON FOR BATTERY INITIATIVE

1. HPQ's aims to provide silicon-based (Si) material for anodes by the end of Q4 2023 – Q1 2024
2. HPQ plans to commission its first 200 tonnes per year (TPY) production line of silicon-based anode material by end Q4 2024 – Q1 2025
3. HPQ targets 2,500 TPY production of silicon-based anode material using the high purity silicon produced by the PUREVAP™ Gen4 QRR

— SILICON-BASED (SiO_x) ANODES MATERIAL OPPORTUNITY

- Electric Vehicle Demand is growing exponentially
- Resulting battery raw material demand to stress supplies
- Graphite:
  - Is the largest (by %) key mineral in an EV battery
  - Demand exceeds supply for the first time in 2022 [1]
  - Deficit projected to grow to 8M tonnes by 2040 [2]
- Replacing a small percentage (5 to 10%) [3] of graphite in the anode chemistry with silicon-based (SiO_x) anodes material could:
  1. Improve battery performance
  2. Address the ongoing graphite deficit

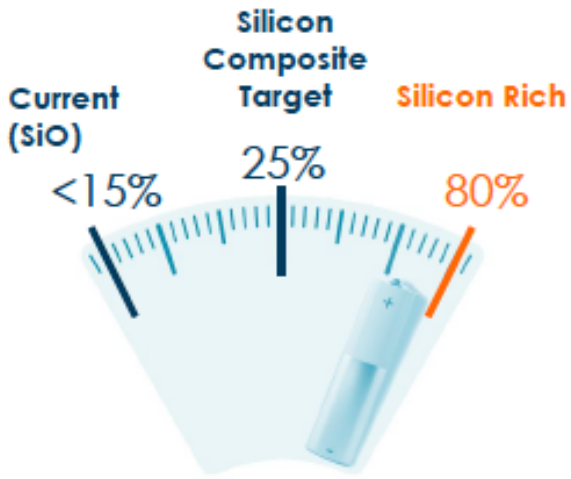




Silicon-based (Si) anode material for batteries demand is projected to exceed 300K Tonnes (t) by 2030, worth about US$ 15 B [4]

Silicon in Battery Anodes: A Promising Solution to Drive the Acceleration of the Electric Vehicle (EV) Transition

Silicon content % in battery anode



New strategies and specific components **to mitigate expansion** issue

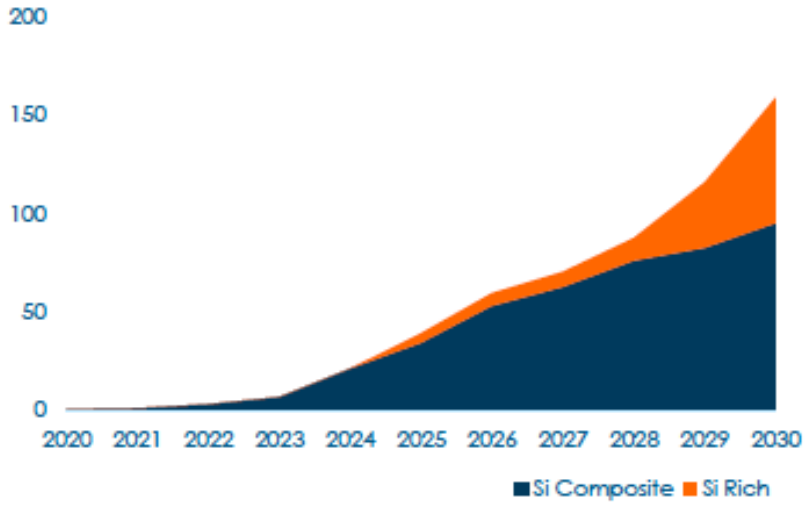
Expected **CAGR of 56% from 2023 to 2030** (excl. China)

EU and NA expected to onshore silicon supply chain

Silicon offers **lower carbon footprint** vs graphite

Silicon offers **cost advantage** vs Si containing alternatives

Silicon for batteries demand[1] (kt per annum)



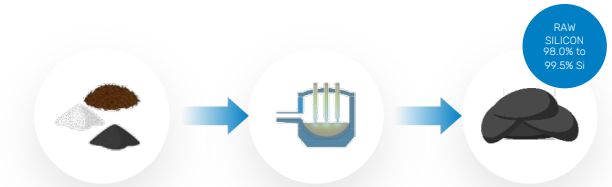
[1]

- **With HPQ's PUREVAP™ QRR and Novacium's proprietary expertise combined, we are well-positioned to seize this once-in-a-lifetime opportunity**

— HPQ / NOVACIUM BATTERY INITIATIVE VS COMPETITION

CONVENTIONAL CARBOTHERMIC PROCESS

QUARTZ TO SILICON



99.5% SiO_2 + 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

To Get

SILICON TO SILANE GAS PROCESS

HSiCl3

Trichlorosilane

Refined 3 times

SiH4

Silane Gas

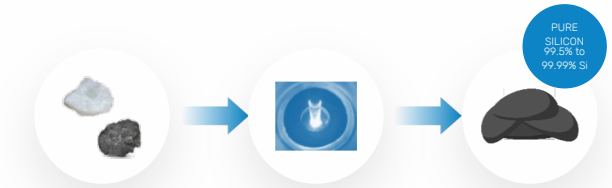
Si Anode Materials

CVD Process
(Sila Nanotechnologies, Group14 Technologies, Amprius)

HPQ Approach : Simple and straightforward

PUREVAP™ QRR PROCESS

QUARTZ TO SILICON



98.5% SiO_2 + Clean Coal (4,5 MT Needed)

PUREVAP QRR Reactor

Energy Consumption: 13,000 kWh needed to produce 1 MT

Battery Grade Si (3N+ Si)

HPQ Battery

SI TO SiOx Anode Material

Crusher

Micronisation

SiOx Anode material

Cell / Battery manufacturing

Silicon Anode materials

HPQ SILICON

HPQ SILICON FOR BATTERY INITIATIVE

- **On track for commercialisation and monetization starting Q4 2024 – Q1 2025**

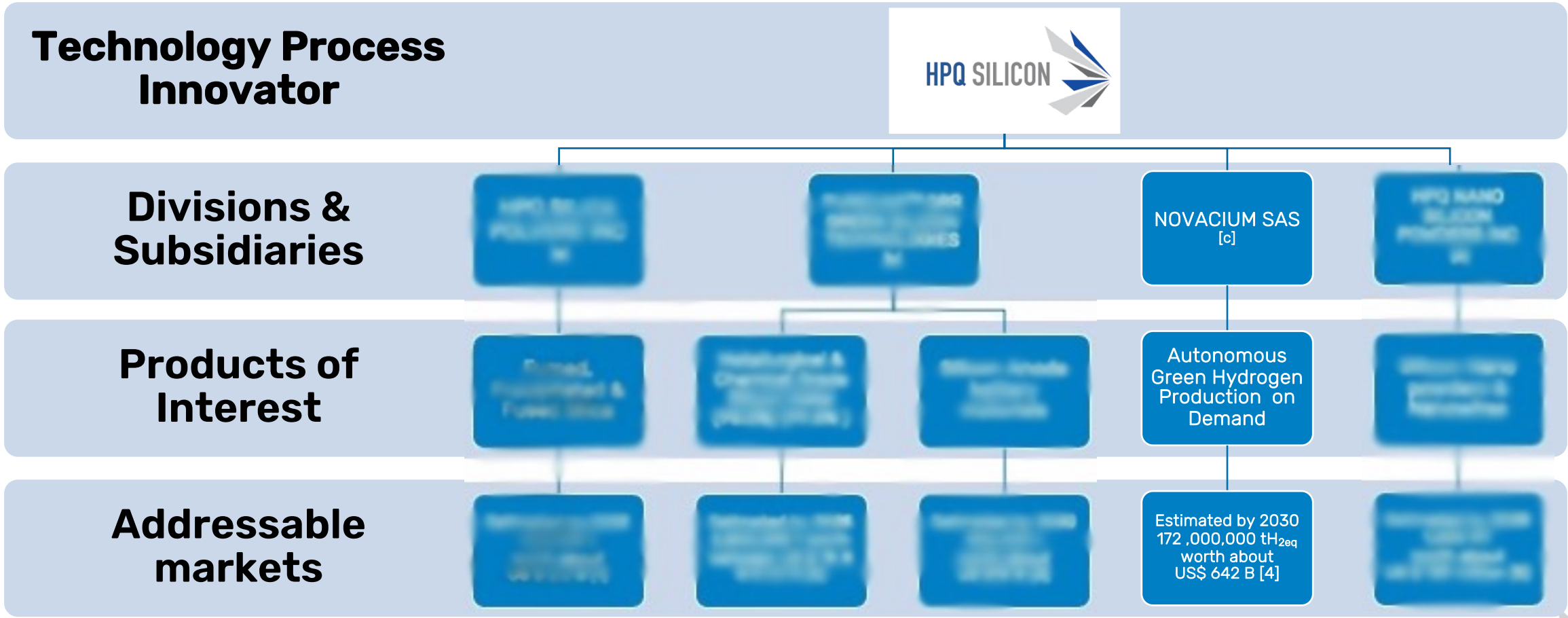
PROJECTS	2023		2024	2025	2026
BATTERY INITIATIVE	Testing industrial equipment that can make micron size Si Powders	Design pathway to manufacture commercially Silicon Based Anode material	Finalize Silicon Based Anode material production pathway Set up & start a production line that can produce up to 200 Tonnes Per Year (TPY)	Continually scale up and expanding our production capacity to make Silicon Based Anode material up to a capacity capable of handling the 2,500 MT of feedstock coming from our first *Gen4 PUREVAP™ QRR* commercial plant in 2026	

BATTERY INITIATIVE UPCOMING CATALYSTS

- Producing small quantity (15 kg) of 3N+ micron size (<5 microns) Si powder
- Producing larger quantity of 3N+ micron size (<5 micron) Si powder (≥ 800 Kg)
- Samples delivered to world-leading high-performance material company
- Developing a pathway to secure access to high-purity silicon feedstock
- Secure the services of an experienced senior-level executive to oversee the project
- Having the material tested at different high-level research centers
- Finalizing pathway to manufacture commercially 200 TPA of Silicon Base anode material
- Testing material to see if Novacium patented surface treatment process can improve battery performance
- Start marketing of material to prospective buyers/shipping samples to them
- Finalize site emplacement and start an equipment procurement process

GREEN HYDROGEN INITIATIVE

- **Grant financing to completed end 2023, first commercial prototype ready Q4 2024**
- **Commercialisation and sales of systems starting in 2025**



NOVACIUM
MATERIA FUTURA

AN AFFILIATED COMPANY OF HPQ SILICON

ONGOING COLLABORATION WITH HPQ

Since Novacium onboarding in Q3 2022, the collaboration has been focused on the following three areas:

1. R&D assistance and collaboration on HPQ's processes (PUREVAP™ RRQ):
   a) Supporting, optimizing and sharing knowledge and know-how, etc.

   (Two new QRR patents already filed)

2. Collaborating on complementary R&D to develop innovative processes in the following niche sectors:
   a) Manufacturing SiO_x particles for silicon anode battery material and Manufacturing Micron Size High purity Si particles for high-value Si based applications

   (Work crucial to HPQ Battery Initiative)

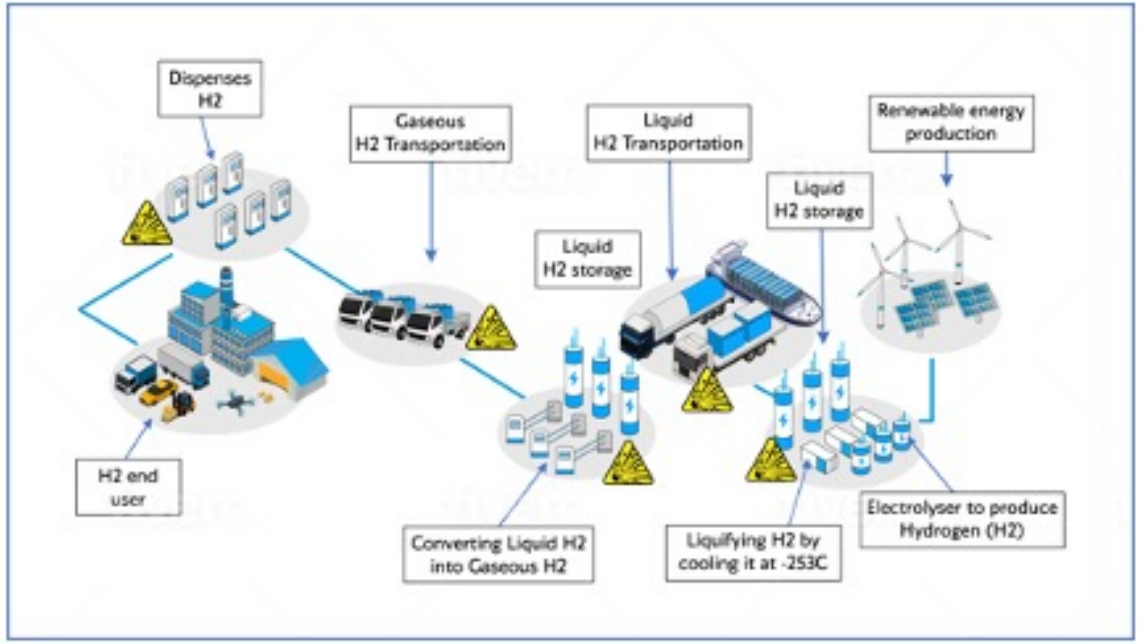
   a) Manufacturing carbon particles or super-capacitor applications

3. Capitalizing on their knowledge and know-how in the hydrogen sector, the technical team is developing:
   a) An autonomous process for making hydrogen via hydrolysis of silicon and other materials

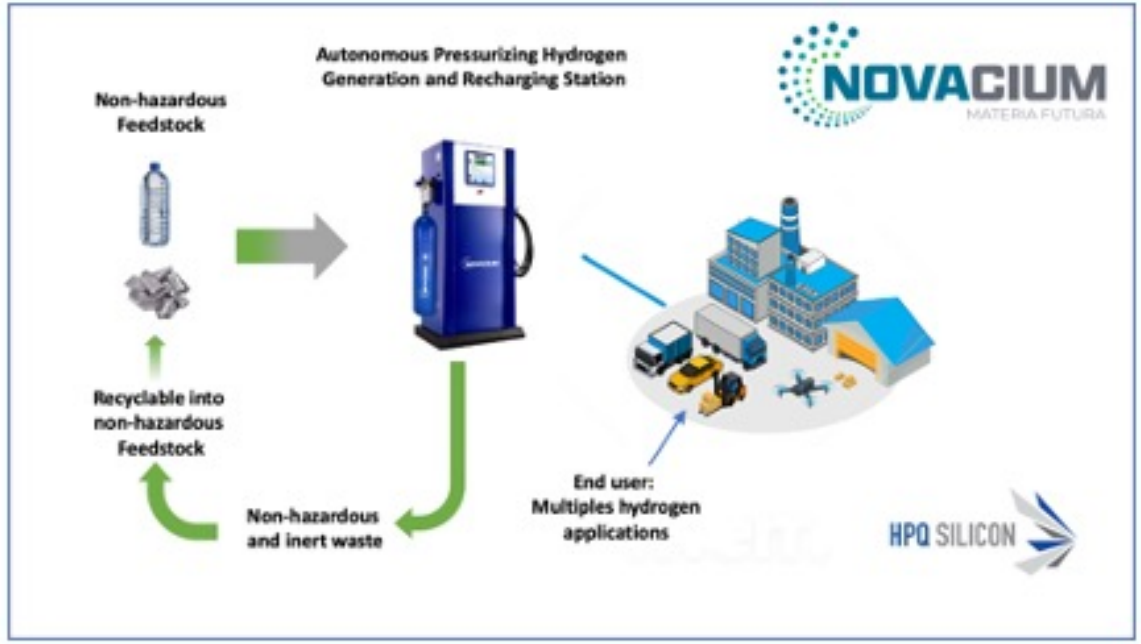
— HPQ / NOVACIUM HYDROGEN INITIATIVE

- **HARNESSING HYDROGEN POTENTIAL WHILE ELIMINATING LIMITING FACTORS**

Navigating Today Hydrogen Supply Chain:
An Expansive, Challenging and complex Journey !



Re-imagining the Hydrogen Supply Chain: Towards an Autonomous, Decentralized, and Safer Journey !



— HPQ / NOVACIUM HYDROGEN INITIATIVE

Combustible

9,5 kg/day
(6 litres)

Water (*)

18 kg/day
(18 litres)

Hydrogen

11 m³
(1 kg/day)

By products

26,5 kg/day
(19 litres)

(*) Flexible Water source, from:

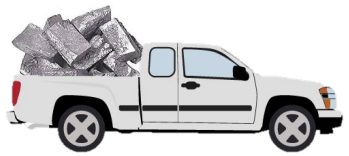
- Regular water
- Sea water
- Stale water (Gray Water), or
- Urine

First commercial prototype H2 Station :

Will produce 11M³ of Hydrogen per day

That Hydrogen can be used to generate 33 KWhr

HYDROGEN ECOSYSTEM



Chemical fuel (transport, storage)

H2 Manufacturing and Charging Station

H2 for Drones

H2 Generators

H2 Cars (station, jerrycan)

Soft Mobility

By-Products

Collection center

Recycling (or disposal)

Metallurgical industry

— HPQ / NOVACIUM HYDROGEN INITIATIVE

- **On track for to have a systems available for sales early 2025 or earlier**

PROJECTS	2023	2024	2025	2026
HYDROGEN TECHS	Developing, a new autonomous process for making hydrogen via hydrolysis of silicon and other materials	Building commercial prototype capable of producing 11m^3 of Hydrogen per day via hydrolysis of silicon and other materials	Start commercialisation and sales of autonomous H2 generator capable of 11m^3 of H2 per day Scaling Up work to increase capacity of the systems	

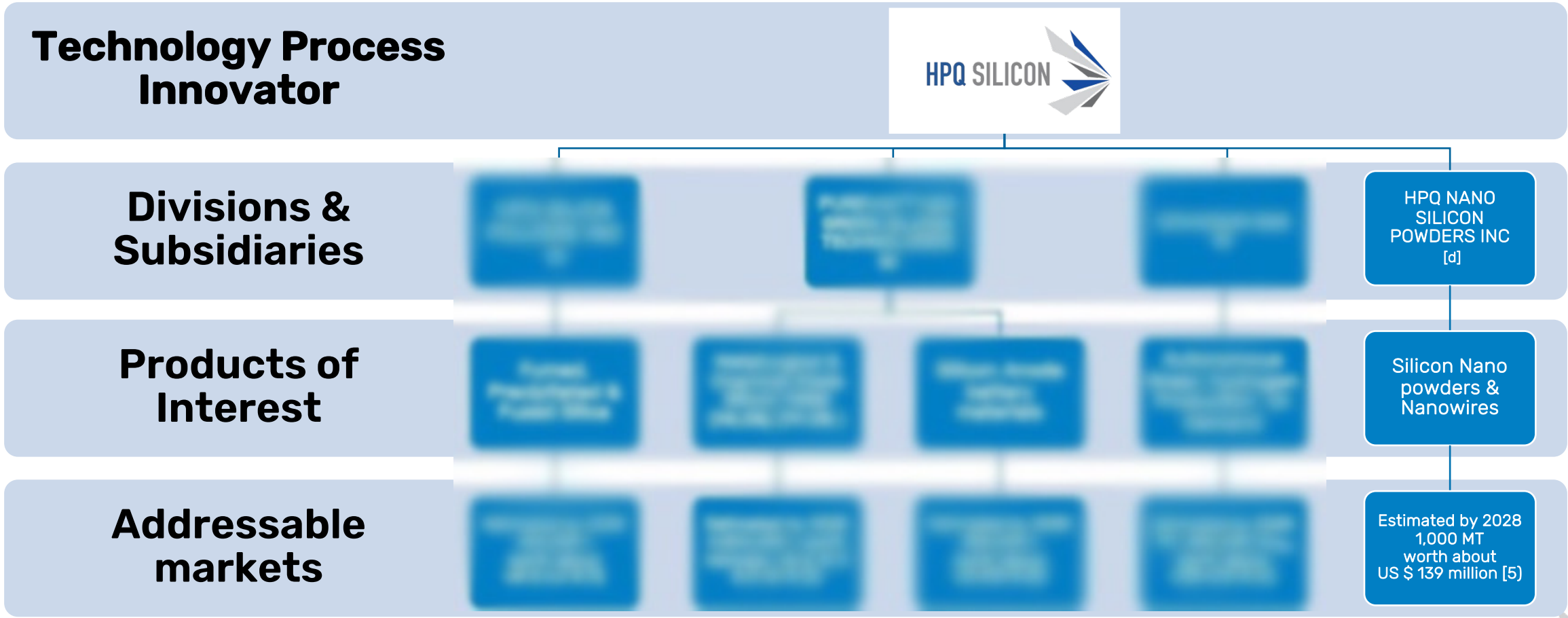
HYDROGEN INITIATIVE UPCOMING CATALYSTS

- Signing MOU with potential clients and partners
- Securing large government led grant financing
- Building the first prototype

HPQ SILICON

— NANO SILICON OPPORTUNITY

- **NANO SILICON MATERIAL STATUS: a nascent industry and technology**

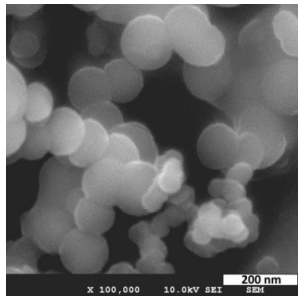


— PUREVAP™ NSiR

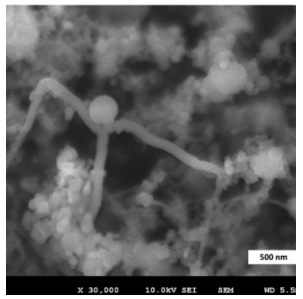
A new process to transform Silicon (Si) chunks into Spherical Nano powders and Nano wires

MAKING SILICON MATERIALS FOR BATTERIES

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



SILICON NANOPOWDERS



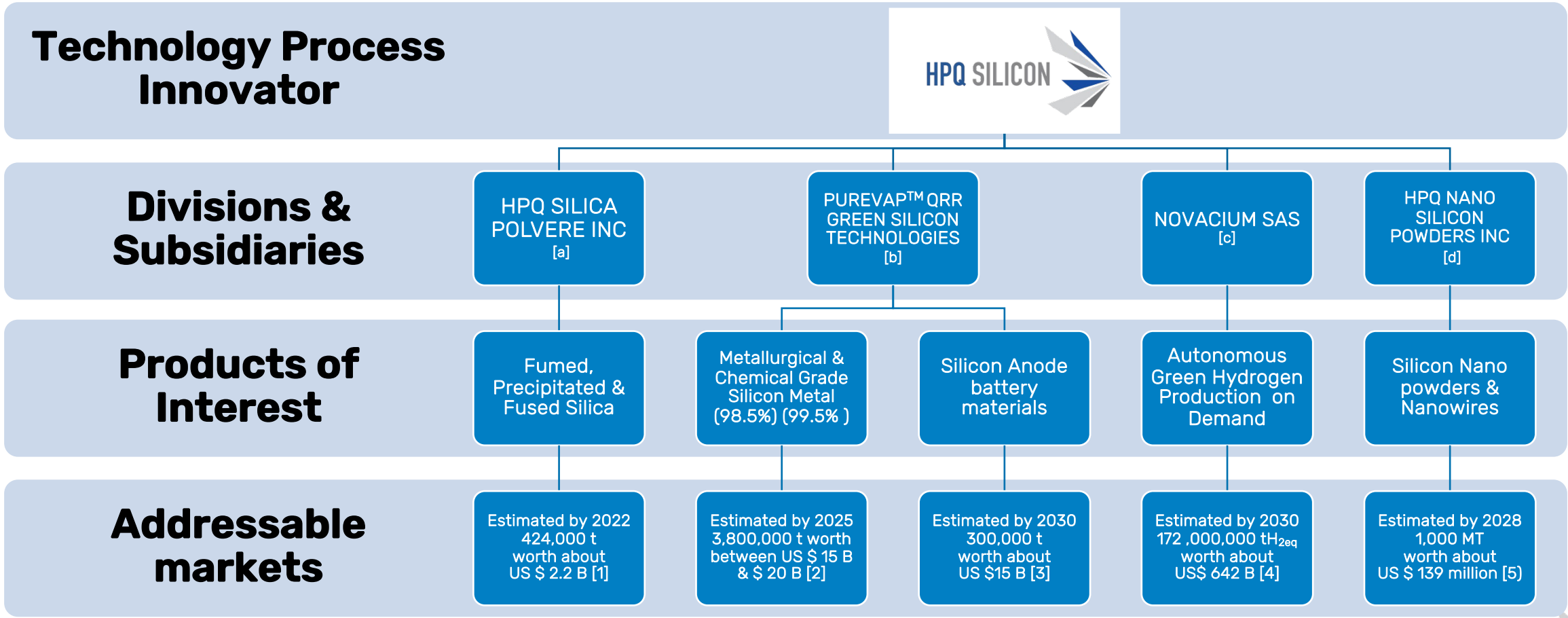
SILICON NANOWIRES

Nano silicon materials are currently in a nascent stage of development and technology, and it is expected to take time for this industry to mature

We are prioritizing investments in SiOx-based anode materials due to strong market interest, deferring our focus on Nano Reactor technology given the nascent stage of nano silicon materials.

— VALUE PROPOSITION: DEVELOP & MONETIZE

- Commercialisation and monetization starting in end 2024 with Fumed Silica, follow by Batteries and Hydrogen in 2025



— *HPQ INNOVATIONS:* INDICATIVE TIMELINE

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

PROJECTS	2023	2024	2025	2026
FUMED SILICA	Small scale testing of different Fumed Silica Pilot Plant configurations	Engineering – Construction – Commissioning of Fumed Silica Pilot Plant	Pilot plant validation of technology	Producing Fumed Silica Scale starting 50 TPY Conceptual and feasibility engineering studies to scale up to 250 PTY per unit Equipment Procurement	250 TPY Fumed Silica commercial plants Construction – commissioning
PUREVAP™ QRR	*Gen3 QRR* Pilot plant technology validation	Gen3 QRR 3N+ Silicon manufacturing Gen4 Conceptual engineering Studies	*Gen4 Preliminary* Engineering Studies	*Gen4* Equipment Procurement & Financing	*Gen4 PUREVAP™ QRR* commercial plant (s) Construction – Commissioning Start of commercial production
BATTERY INITIATIVE	Testing industrial equipment that can make micron size Si Powders	Design pathway to manufacture commercially Silicon Based Anode material	Finalize Silicon Based Anode material production pathway Set up & start a production line that can produce up to 200 Tonnes Per Year (TPY)	Continually scale up and expanding our production capacity to make Silicon Based Anode material up to a capacity capable of handling the 2,500 MT of feedstock coming from our first *Gen4 PUREVAP™ QRR* commercial plant in 2026
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HPQ SILICON

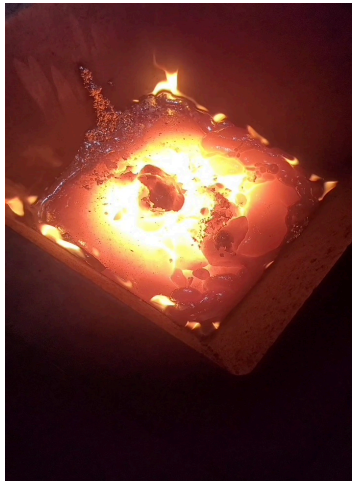
— UPCOMING CATALYSTS

01. FUMED SILICA PROJECT

- [x] Finalize ongoing small-scale testing
- [x] Send Samples to potential client under NDA
- [ ] Negotiate Offtake or other type of transaction with a party under NDA
- [ ] Building and commissioning Fumed Silica Reactor pilot plant, validate scaling up

02. PUREVAP™ QRR PROJECT

- [x] Completing a successful Silicon Pour
- [ ] Operating the system commercially
- [ ] Producing Silicon materials for HPQ Silicon anodes initiative
- [ ] Starting Gen4 conceptual engineering studies



03. BATTERY INITIATIVE

- [x] Secure the services of an experienced senior-level executive to oversee the project
- [ ] Material test at High-Level research center
- [ ] Finalizing pathway to manufacture commercially 200 TPA of Silicon base anode materials

04. HYDROGEN INITIATIVE

- [ ] Finish design of a new autonomous process for making hydrogen via hydrolysis
- [ ] Securing grant financing to build the first commercial prototype of Hydrogen reactor

HPQ CAPITAL STRUCTURE

Major Investors	Basic	Fully Diluted
IQ (Investissement Québec)	8,7%	8,0%
PyroGenesis Canada Inc.	5,6%	6.8%
Management & Board	6.3%	10.4%
Strategic Investors	6.0%	5.0%

52 weeks

	Price	Low	High
(As of Oct 18, 2023)	$ .260	$ 0,195	$ 0,42

	Million
Basic Shares Outstanding	365.0
Options (Average Price $0.61 / Duration 2,71 years)	17,5
Warrants (Average Price $0..585)	7.1
Fully Diluted Shares Outstanding	389,8
Market Capitalization (Basic)	$94.9.
Market Capitalization (Fully Diluted)	$101.,3
Cash and Cash equivalent available for projects advancements	$1.2

— 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

Consultants/ Technical Advisors

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

Transfer Agent

- **Computershare**

Auditors

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

3000 Omer-Lavallée St, Suite 306
Montreal, Quebec,
CANADA, H1Y 3R8

(t) +1-514-846 3271
(f) +1-514-372-0066

www.hpqsilicon.com

CONTACT

Bernard J. Tourillon, B.A.A, MBA
Chairman, President and CEO
bernard.tourillon@hpqsilicon.com
+1-514-846-3271

— PRESENTATION REFERENCES AND SOURCES

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[1] Fumed Silica Market Outlook (2022-2030) (https://www.factmr.com/report/2301/fumed-silica-market), Specialty Silica Market projected to reach $13.4 billion by 2030, exhibiting a CAGR of 7.0%, Says Coherent Market Insights (CMI). Link to source, Specialty Silica Market projected to reach $13.4 billion by 2030, exhibiting a CAGR of 7.0%, Says Coherent Market Insights (CMI). Link to source

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[3] Specialty Silica Market projected to reach $13.4 billion by 2030, exhibiting a CAGR of 7.0%, Says Coherent Market Insights (CMI). Link to source

Page 7

[1] 2012 – Executive summary: "SILICON-CHEMISTRY CARBON BALANCE, AN ASSESSMENT OF GREENHOUSE GAS EMISSIONS AND REDUCTIONS", Covering the Production, Use and End-of-Life of Silicones, Siloxanes and Silane Products in Europe, North America, and Japan. [Pages 20 to 21] (Commissioned by Global Silicones Council, Centre Européen des Silicones, Silicones Environmental, Health and Safety Council of North America Silicone Industry Association of Japan).

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[1] Data compiled from information found in the presentations made by CRU International Limited ("CRU"), a world-leading metal market research firm, during their Silicon Market Outlook conferences of November 2018, November 2020, and October 2022. Information further validated by Straits Research Silicon Metal Market: Information by Product Type (Metallurgical and Chemical), Application (Aluminium Alloys, Silicone, and Semiconductors), and Region – Forecast till 2030, report that indicated that the global silicon metal market size was valued at USD 12.4 billion in 2021, and is expected to reach USD 20.60 billion by 2030, growing at a CAGR of 5.8% during the forecast period (2022–2030).

[2] QY Research, SNE Research, Shinhan Securities / NBM June 2023 Deck page 11

Page 10

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Page 12

[1] Information from PPC SE website indicated that the 2015 cost to build their 32,000 metric tons PCC Bakki Silicon Project located on the outskirts of Húsavík in the north of Iceland was around US$ 300 M.

[2] From Ferroglobe PLC investor presentation dated October 17, 2017 (Page 11).

[3] Data compiled from information found on page 28 of a presentation made by CRU International Limited ("CRU") at its CRU Silicon Market Virtual Forum 2020.

[4] Management refers to public information found in PyroGenesis February 2, 2023, release that indicated that the cost to build one 2,500 tonnes per year (TPY) PUREVAP™ QRR reactor was around $20 M, and the cost to build two 2,500 TPY reactors would be around $40M. Therefore, as noted on page 7 point 1 above, the cost to build a traditional plant is US$ 300M; therefore 40/300 = .13 which represents a minimum investment 86% less than conventional process. These numbers will be further validated and refine after the completion of the GEN4 Conceptual and Preliminary engineering studies.

[5] From Ferroglobe PLC investor presentation dated October 17, 2017 (Page 11) we know that traditional process need 6 tonnes to make one tonne, so if we only need 4.5, that equal to 25% less feedstock

[6] Management refers to public information from Ferroglobe PLC investor presentation dated January 2017 (Page 6). According to this information, approximately 45% of the total cost of producing Metallurgical grade Silicon (98.5% - 99.5% Si) is attributed to feedstock expenses, primarily quartz and reductant. Reaching a conversion efficiency exceeding 75% would result in a reduction of about one-third of the required amount of feedstock needed to make silicon metal. Therefore, this reduction in feedstock usage could result in an HPQ cost advantage of over 14% (45% * 33%) compared to traditional methods.

Page 13

[1] From Green14 web site.

[2] Gudrun Saevarsdottir, Thordur Magnusson & Halvor Kvande. (2021) Reducing the Carbon Footprint: Primary Production of Aluminum and Silicon with Changing Energy Systems. Journal of Sustainable Metallurgy, 7, 846-857.

[3] FerroQuébec Inc. Empreinte carbone du silicium métal, Usine de Port-Cartier, Rapport d'empreinte carbone, 25 mars 2015, Ernst & Young, Groupe – Changements climatique et développement durable.

Page 14

[1] The Global Silicone Market Size is expected to grow from USD 16.3 billion in 2021 to USD 30.9 billion by 2030, at a CAGR of 7.4% during the forecast period 2021-2030. as per the latest research report by Spherical Insights & Consulting.

[2] The global polysilicon market size was valued at USD 8.87 billion in 2021 and is projected to reach USD 27.07 billion by 2030 at a CAGR of 13.2% from 2022 to 2030 as per the latest research report by Strait Research Spherical Insights & Consulting

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Page 15

[1] From Ferroglobe PLC investor presentation dated July 12, 2022 (Page 78)

[2] From Ferroglobe PLC investor presentation dated July 12, 2022 (Page 78)

Page 18

[1] July 2022 article by Rick Mills in .mining.com intitled Graphite deficit starting this year as demand for ev battery anode ingredient exceeds supply

[2] July 2022 article by Rick Mills in .mining.com intitled Graphite deficit starting this year as demand for ev battery anode ingredient exceeds supply

[3] The Royal Society of Chemistry 2020 Sustainable Energy Fuels, 2020, 4, 5387–5416

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Page 19

[1] From Ferroglobe PLC investor presentation dated July 12, 2022 (Page 63)

Page 22

c) Novacium SAS. In 2022, HPQ partnered with three leading French research engineers to create Novacium, a "jeune entreprise innovante (J.E.I)" based in Lyon, France, working in high-added-value material fields connected to renewable energy. While presently HPQ only owns 20% of the equity of Novacium, the covenants regarding the operations of Novacium are such that accounting rules require that we consolidate Novacium operations in our financial statement, making Novacium a de-facto subsidiary of HPQ Silicon Inc.

[4] Deloitte's 2023 global green hydrogen outlook, page 13

Page 28

d) HPQ Nano Silicon Powders Inc ("Nano") is a 100% owned HPQ subsidiary. HPQ acquired the PUREVAP™ NSiR intellectual properties from PyroGenesis Canada Inc ("PCI"), subcontracted to them the R&D associated with developing the technologies, agreed to an exclusive equipment procurement deal and granted PCI a royalty payment equal of 10% of Nano Nano silicon powder sales, with set minimums. PCI does have the option to sale its Royalty in exchange for 50% of HPQ equity stake in Nano.

5 Global Nano Silicon Powder Market 2023 New Updated Research Report. The global Nano Silicon Powder market size is estimated to be worth USD 112.8 million in 2022. It is forecast to a readjusted size of USD 139.6 million by 2028 with a CAGR of 3.6 Percent during the forecast period 2022-2028.

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