This presentation contains forward-looking statements within the meaning of the federal securities laws and information based on management’s current expectations as of the date of this presentation. All statements other than statements of historical fact contained in this presentation, including statements regarding QuantumScape’s future operating results, financial position, business strategy, addressable market, anticipated benefits of its technologies, projected factory economics, pro forma information, and plans and objectives for future operations and products are forward-looking statements. When used in this presentation, the words “may,” “will,” “estimate,” “pro forma,” “expect,” “plan,” “believe,” “potential,” “predict,” “target,” “should,” “would,” “could,” “continue,” “believe,” “project,” “intend,” “anticipates” the negative of such terms and other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management’s current expectations, assumptions, hopes, beliefs, intentions and strategies regarding future events and are based on currently available information as to the outcome and timing of future events. QuantumScape cautions you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond the control of QuantumScape, incident to its business.

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Agenda

QuantumScape Overview and Results
Jagdeep Singh, CEO

Battery Science Panel
Dr. David Danielson (Moderator)
- Dr. Stanley Whittingham
- Dr. Paul Albertus
- Dr. Venkat Viswanathan
- Dr. Tim Holme

Commercial Impact on EVs Panel
Dr. David Danielson (Moderator)
- Dr. Jurgen Leohold
- JB Straubel

Questions & Answers
Jagdeep Singh, CEO
Management Team
Select Management Team Members

JAGDEEP SINGH
Founder / CEO (Chairman)
- Founder / CEO Infinera (NASDAQ: INFN); Lightera, now Ciena (NASDAQ: CIEN); OnFiber, now Qwest; AirSoft
- MS Computer Science, Stanford

PROF. FRITZ PRINZ
Founder & Chief Scientific Advisor (Board Member)
- Chair, Mechanical Engineering, Stanford
- Professor, Materials Science, Stanford
- PhD, Physics, University of Vienna

DR. TIM HOLME
Founder & Chief Technology Officer
- Research Associate, Stanford
- Ph.D. & MS Mechanical Engineering, Stanford
- BS Physics, Stanford

DR. MOHIT SINGH
Chief Development Officer
- CTO and co-founder, SEEO
- Solid-state energy storage world expert
- Ph.D. Chem & Biomol Eng, Tulane
- Postdoc, Polymers, Berkeley

KEVIN HETTRICH
Chief Financial Officer
- Bain Capital
- McKinsey & Company
- US Department of Energy
- MBA & MS, Stanford

HOWARD LUKENS
Chief Sales Officer
- VP WW Sales, Infinera (NASDAQ: INFN)
- VP Strategic Sales, Ciena, (NASDAQ: CIEN)
- VP WW Sales, Lightera

JAY UNDERWOOD
Vice President, Sales
- Sales Director, Northern Europe, Infinera
- Product Planning, Infinera
- MS Technology

MIKE MCCARTHY
Chief Legal Officer & Head of Corp. Dev.
- CLO & CAO, Infinera (NASDAQ: INFN)
- SVP & General Counsel, Ciena (NASDAQ: CIEN)
- J.D. Vanderbilt
Backed by Leading Investors

SELECT BOARD MEMBERS AND INVESTORS

- Management and board with extensive public company experience and operating capabilities in the automotive and automotive-related sector
- Relevant automotive experience to optimize program launches and capital deployment while facilitating commercial relationships
- Track record of creating significant shareholder value in automotive businesses
By the Numbers

>$1.5B of Committed Capital¹
Over $300M spent on development to date

10 Years of R&D Investment
Founded in 2010

250+ Employees
World Class Next-gen Battery Development Team

200+ Patents²
Materials, Use and Process

Extensive Trade Secrets
Processes and Intellectual Property

1. Prior to its merger with Kensington, QuantumScape secured over $800 million in committed funds. With the addition of the $700 million from its merger with Kensington and subsequent PIPE financing, QuantumScape will have received more than $1.5 billion in commitments to date
2. Includes patents and patent applications.
Volkswagen Committed to QuantumScape Technology

Volkswagen Group Overview

• ~11 million vehicles produced in FY2019
• ~$38 billion investment in electric mobility by 2024
• Plans to launch ~70 electric vehicle models and produce 22 million electric vehicles by 2029

Volkswagen Partners with QuantumScape

1. Corporate funding commitment of $300+ million
2. Strong relationship since 2012, including development collaboration, testing of prototype cells and representation on the QS board of directors
3. Founded a JV to prepare for the mass production of solid-state batteries for Volkswagen

“Volkswagen has become the largest shareholder of QuantumScape. Our US$100 million investment is a key building block in the Group’s battery strategy. One of the long-term targets is to establish a production line for solid-state batteries by 2025.”

- Herbert Diess, Volkswagen AG CEO

“The Volkswagen Group has established a joint venture with QuantumScape, a manufacturer of solid-state batteries. The shared goal of the companies is large-scale production...”

- Oliver Blume, Porsche CEO

“In June 2020, the Volkswagen Group also announced plans to increase its shareholding in the US battery specialist QuantumScape. The objective is to promote the joint development of solid-state battery technology. In the future, solid-state batteries should result in a significantly increased range and faster charge times. They are regarded as the most promising approach to electric mobility for generations to come. Volkswagen has already been collaborating with QuantumScape since 2012 and is the largest automotive shareholder thus far. Both founded a joint venture in 2018, the aim of which is to prepare the mass production of solid-state batteries for Volkswagen.”

- Volkswagen Group Half-Yearly Financial Report, July 2020

Need battery breakthrough to enable electrification of remaining 98% of market

Customer Requirements for Mass Market Adoption

- **Energy / Capacity**: >300 mile range
- **Fast Charging**: Charge in <15 min
- **Cost**: < $30K, 300 mile EVs
- **Battery Lifetime**: >12 years, >150k miles
- **Safety**: Solid, non-oxidizable separator

2% PHEV + BEV Penetration²

---

Source: International Organization of Motor Vehicle Manufacturers (OICA); IEA

1. Based on 2019 global vehicle production; includes passenger vehicles, heavy trucks, buses and coaches (OICA). Battery opportunity assumes $100 / KWh and 50KWh+ battery pack.
2. % of Global Car Stock in 2019 (IEA).
Lithium-Metal Anode is Required for High Energy Density

And Lithium metal anode requires a solid-state separator

Graphite / Silicon Anode

Conventional Lithium-Ion Batteries

Lithium-Metal Batteries

Graphite Anode

Lithium-Metal Anode Required

Key Takeaways

Lithium-metal anode necessary to achieve high energy density

Lithium-metal cannot be used without a solid-state separator

QuantumScape Zero Li Anode-free Architecture

Improved cost, energy density, safety

**Conventional Liquid Battery**
- Anode Current Collector
- Graphite / Silicon Anode
- Liquid Electrolyte
- Porous Separator
- Cathode Active
- Liquid Electrolyte
- Cathode Current Collector

**QuantumScape Solid-State Battery**
- Discharged (as manufactured)
  - Anode Current Collector
  - Lithium-Metal Solid-State Separator
  - Cathode Active
  - Catholyte
  - Cathode Current Collector

- Charged
  - Anode-free Manufacturing
    - Anode-free cell design with lithium plated during charge cycles
  - Solid-State Separator
    - Ceramic electrolyte with high dendrite resistance
  - Lithium-Metal Anode
    - High-rate cycling of a lithium-metal anode
QuantumScape Energy Density

Energy-optimized Cell Designs

Source: Argonne National Laboratory; Management estimates

1 Lithium, iron, and phosphate
2 Nickel, manganese, and cobalt
3 Nickel, cobalt, and aluminum
Lithium metal architecture addresses multiple requirements simultaneously

<table>
<thead>
<tr>
<th>Energy</th>
<th>Significantly increases volumetric and gravimetric energy density by eliminating graphite/silicon anode host material.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Charge</td>
<td>Enables &lt;15-minute fast charge (0 to 80%) by eliminating lithium diffusion bottleneck in anode host material.</td>
</tr>
<tr>
<td>Life</td>
<td>Increased life by eliminating capacity loss at anode interface.</td>
</tr>
<tr>
<td>Safety</td>
<td>Eliminates organic separator. Solid-state separator is nonflammable and noncombustible.</td>
</tr>
<tr>
<td>Cost</td>
<td>Lower cost by eliminating anode host material and manufacturing costs.</td>
</tr>
<tr>
<td>Separator Requirements</td>
<td>Ionic liquids</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>1 Conductivity</td>
<td>X</td>
</tr>
<tr>
<td>2 Separator-Anode ASR</td>
<td>X</td>
</tr>
<tr>
<td>3 Lithium metal stability</td>
<td>X</td>
</tr>
<tr>
<td>4 Dendrite resistance</td>
<td>X</td>
</tr>
</tbody>
</table>

Also must be thin and continuously processed at low cost over large area
Video

Why has it been so challenging to develop Solid-State Batteries?
## Existing separators only work under severely compromised conditions

<table>
<thead>
<tr>
<th>Issue</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Current Density while Charging</td>
<td>Slow Charge</td>
</tr>
<tr>
<td>• Low Cathode Loading or Low C-rate</td>
<td></td>
</tr>
<tr>
<td>Low Cycle Life</td>
<td>Life</td>
</tr>
<tr>
<td>• &lt; 800 cycles</td>
<td></td>
</tr>
<tr>
<td>Limited Temperature Range</td>
<td>Cost Complexity</td>
</tr>
<tr>
<td>• Elevated only</td>
<td></td>
</tr>
<tr>
<td>Requires Excess Lithium</td>
<td>Low Energy</td>
</tr>
</tbody>
</table>
QuantumScape Material & Cell

CERAMIC SOLID-STATE SEPARATOR

SINGLE LAYER POUCH CELL

85mm

70mm
Fast Charging

Fast charge capability exceeds commercial targets with commercial area single layer prototype

80% Charge in 15 minutes. Lithium Ion batteries currently only get to <50% in 15 minutes

Fast Charging

<15 min 80% Charge QS

Commercial target

~40 min 80% Charge C/Si anode, Li-Ion

Commercial area (70x85mm) prototype
Zero Excess Li, 3.2mAh/cm², Single Layer
30 °C, ~3.4 atm

Updated: 12/14/2020
**Material Performance: Dendrite Resistance**

Material entitlement exists for full charge in <5 min

Solid-state separator resists dendrites even at very high current density

Based on solid-state separator material testing

---

**Extreme high rate lithium plating**

- Li/Li symmetric cell
  - Single Layer
  - 45 °C

- 2-min charge
  - 25C rate
  - >100mA/cm²

- 15-minute charge
  - 4C Rate
  - 16mA/cm²

- Previous solid-state

---

**Cumulative charge [mAh/cm²]**

Lithium plated [μm]
Power

Passed simulated OEM-specified track cycle with commercial area prototype

QS solid state cells can deliver aggressive automotive power profiles

OEM Track Cycle

- Commercial area (70x85mm) prototype
- Zero Excess Li, 3.2mAh/cm², Single Layer
- 15 min fast charge to ~ 80% SOC at 45 °C, ~ 3.4 atm (~280 mi in 15 min for 350-mile range BEV)
- High power track profile, 100% depth of discharge

Updated: 12/14/2020
Battery Life

Exceeds commercial target with commercial area single layer prototype

Cycling with >80% energy retention in 1000+ cycles

Chart based on accelerated testing (3x automotive rates)

Commercial target: 800 cycles, 80% fade (240,000 miles)

EV Battery Warranties

Today

Discharge energy [%]

Commercial area (70x85mm) prototype
Zero Excess Li, 3.2mAh/cm², Single Layer
1C charge and discharge
30 °C, ~ 3.4 atm, 100% depth of discharge

Miles driven
0 60k 120k 180k 240k 300k
100kWh BEV

Updated: 1/7/2021

1) Source: MyEV.com and Tesla.com
Material Performance: Low Temp

Operability shown at lower end of automotive temperature range with single layer prototype (30 x 30 mm)

Significant capacity is accessible even at -30°C Celsius

30x30 mm, Single Layer
Charge: C/3 at 30 °C, ~ 3.4 atm
Discharge: C/3 at low temp

Updated: 12/14/2020
Cell Performance: Low Temp

Cycling with commercial area single layer prototype at low temperature (-10° Celsius)

Note: cells still on test

Low temperature life

- Commercial area (70x85mm) prototype
- Li-free, 3.2mAh/cm², Single Layer
- C/5 charge and C/3 discharge
- -10 °C, ~3.4 atm, 100% depth of discharge
Material Performance: Thermal Stability

Solid state separator is not combustible and has high thermal stability.

Lithium anode is chemically stable with separator and foil, even when molten.

Based on solid-state separator material testing.

Inherent stability with metallic lithium

Unlike a liquid electrolyte, QS solid-state separator has no appreciable reaction with molten lithium metal.
Previous Lithium Metal Cells Have Been Commercially Unsuccessful

<table>
<thead>
<tr>
<th>Performance Requirements</th>
<th>Liquids</th>
<th>Polymers</th>
<th>Sulfides I</th>
<th>Sulfides II</th>
<th>Oxides</th>
<th>Performance Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Charge rate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓ 4C fast charge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fast charge</td>
</tr>
<tr>
<td>2 Cycle life</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓ &gt;800 cycles</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Vehicle life &amp; cost of ownership</td>
</tr>
<tr>
<td>3 30 °C operation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓ 30 °C cycling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cold temperature driving</td>
</tr>
<tr>
<td>4 Anode-free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓ Li-free</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Energy density</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>(excess lithium required)</td>
</tr>
</tbody>
</table>
Today’s Panel Discussions

Battery Science Panel

Dr. Stanley Whittingham
- Co-Inventor of the Lithium-Ion Battery
- 2019 Chemistry Nobel Prize Winner
- Distinguished Professor of Chemistry, Binghamton University (SUNY)
- Member QuantumScape Science Advisory Committee

Dr. Paul Albertus
- Former head, US DOE ARPA-EIONCS Solid-State Battery program
- Assistant Professor of Chemistry, University of Maryland

Dr. Venkat Viswanathan
- Battery expert, former lithium-air researcher
- Assistant Professor of Mechanical Engineering, Carnegie-Mellon University
- Member QuantumScape Science Advisory Committee

Dr. Tim Holme
- Founder and Chief Technology Officer, QuantumScape
- Research Associate, Stanford
- Ph.D. & MS Mechanical Engineering, Stanford

Commercial Impact on the EV Market

JB Straubel
- Co-founder and CEO of Redwood Materials
- Co-founder and Former Chief Technology Officer, Tesla
- Board Member, QuantumScape

Dr. Jürgen Leohold
- Board Member, QuantumScape
- Former Head Group Research, Volkswagen
- Former Professor Vehicle Systems and Electrical Engineering, University of Kassel
- Board Member, QuantumScape
Come join our team
www.quantumscape.com