



Fluor & Energy
Materials

Koura

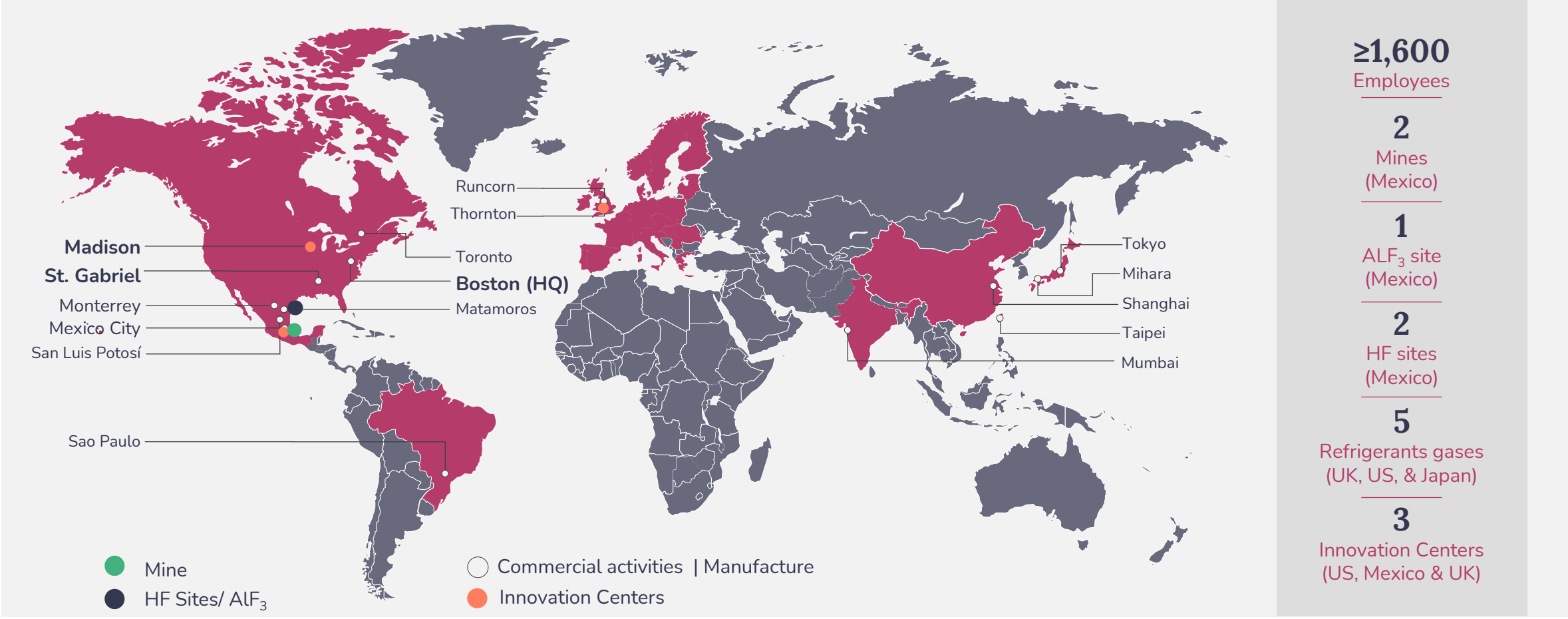
Introduction to Orbia Fluor & Energy Materials at NAATBatt

February 20, 2024

Persefoni Kechagia,
Sr. Director Innovation



Diversified Global Footprint & Strong Presence in North America



Fluor & Energy
Materials



Koura supplies fluorine-based materials to many industries

- Supplies 15-20% of the world's fluorine
- Industry-leading position in acidspar, metspar, HF and AlF_3
- Leading supplier of refrigerants
- Worldwide leader in medical propellants
- Emerging energy storage business



Infrastructure

Fluorspar is critical to cement, steel and aluminium industries



Cooling & Refrigeration

Fluorine is used in refrigerants for air conditioning and food storage



Medical Propellants

Fluorinated medical gas ensures drug stability and efficacious delivery



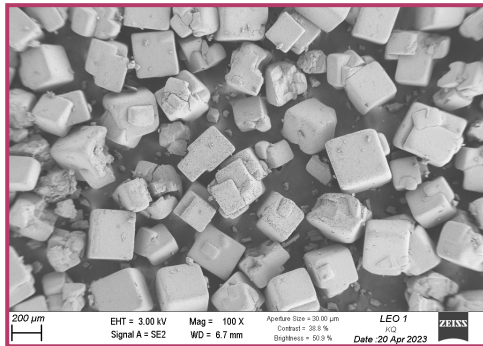
Energy Storage

Fluorine enables lithium-ion batteries to work

Koura is building assets in US to supply LiPF₆, PVDF, electrolyte (non-EV) and graphite anode material

LiPF₆ Electrolyte Salt & PVDF Binder

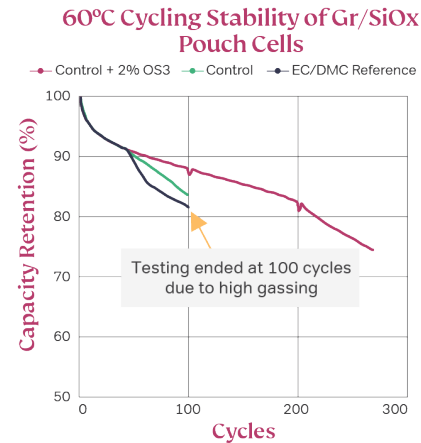
- Licensed proven technology from Kanto Denka Kogyo for first manufacturing facility of 10ktons LiPF₆ in US
- High-performing LiPF₆ enables high-capacity retention for high nickel chemistry
- Physical properties of LiPF₆ lead to improved processability during electrolyte blending



- Formed JV with Syensqo (Solvay) to produce 20ktons high-performance PVDF binder in US

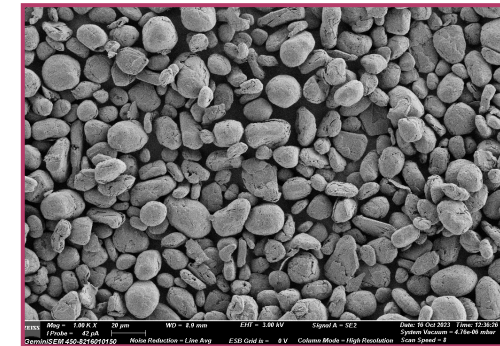
Custom Electrolyte & Fluorinated Electrolyte Materials

- Electrolytes blended to customer formulations for specialty, non-EV applications
- Short lead time of 1 – 50kg blended electrolyte
- OS3[®] improves high temperature cycling and reduces gas generation in Si-Graphite cells
- OS3[®] adopted by major global cell suppliers



Graphite Anode Active Material from Recycled & Natural Graphite

- Koura & Ascend Elements have developed new technology to commercialize recycled graphite from spent batteries
- Developing natural graphite anode active material using established technologies
- Graphite product specifications can be tuned to meet customer requirements





**Fluor & Energy
Materials**

Koura

To support modern, efficient living, Orbia's Fluor & Energy Materials business group and business Koura provides fluorine and downstream intermediates, refrigerants and propellants used in industries from automotive to infrastructure, health and medicine to energy storage, computing to telecommunications applications.