

CURRENT BATTERY TECHNOLOGY AND FUTURE OPPORTUNITIES FOR THE DEVELOPMENT OF A GREENER PRODUCT

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Tata Group aspires to be at the forefront of global battery manufacturing industry

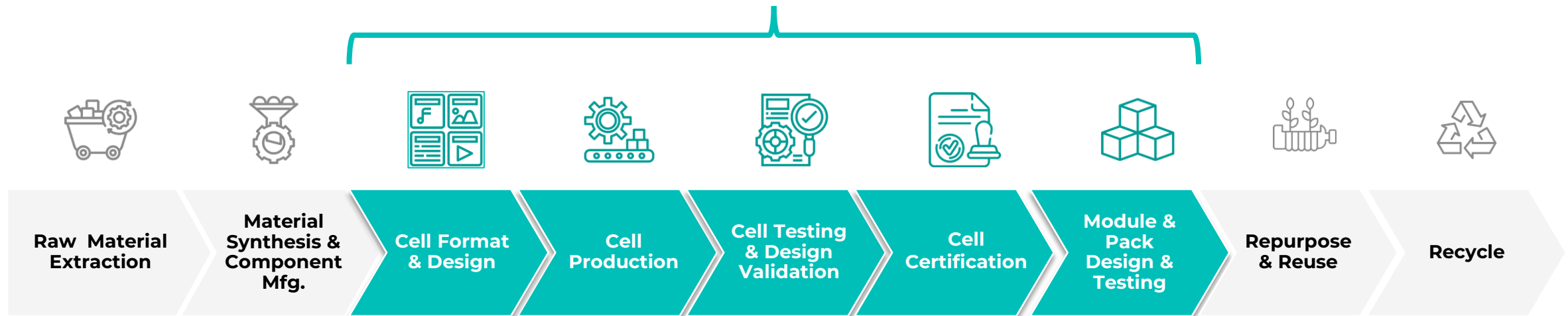
- Global cell manufacturer and developer
- Part of the Tata Group
- Our mission is to have world-class teams delivering best-in-class technologies



Agratas will play across cell to pack value chain

- Key areas of play – immediate focus on end-to end cell design to validation & industrialisation
- Control of whole supply chain upstream as well as downstream
- Localisation of key elements of the supply chain

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With immediate focus on delivery to anchor customers

JLR



- Premium applications with **long-range**
- Focus on **performance** & **fast-charging**

40 GWh+



- Focus on **lifecycle** and **safety**
- Affordable to premium **target customer segments**

20 GWh+

Plan to cover a wide range of customer segments in future

Luxury Passenger Vehicles



- ✓ Long range (500 km+)
- ✓ Fast acceleration (0 – 100 kph in 4.1s)
- ✓ Fast charge (20 min)

Affordable Passenger Vehicles



- ✓ Long Life (8-year battery warranty)
- ✓ Affordability

Commercial Vehicles (light to heavy, truck to bus)



- ✓ Optimised for short & long haul running
- ✓ Enhanced durability
- ✓ Long battery life

Two-Wheelers and Three-Wheelers



- ✓ Enhanced durability
- ✓ Optimized for commuting
- ✓ Affordability

Energy Storage Solutions



- ✓ Harsh weather durability
- ✓ Low maintenance
- ✓ Cost optimisation

Cost, Performance (Range & Acceleration), Durability, Safety & Maintenance requirements define the right battery for an application



EMBRACING THE PLANET, EMBRACING THE FUTURE

*Aalingana, 'embrace' in Sanskrit, embodies the
Tata group's vision for a greener, cleaner, more
sustainable and equitable future for the planet*

Sustainability is core to Agratas

Sustainable supply chain that enables circular economies



Material Selection

Selection of chemistry that uses Earth abundant resources



Supply Chain

Significant localisation to reduce logistics footprint



Sustainable Manufacturing

~Zero effluents out of factory through recycling within premises

Low waste custom processes

Factory powered by renewable energy



Reuse & Recycling

Repurposing used cells

Raw material recovery

Recycling of used cells

Both India & Europe factories to have dedicated renewable resources

Harnessing the Planet's natural resources



- Battery production is energy intensive
- Sustainability targets mandate access to substantial renewable energy
- Energy a critical cost driver for battery, associated supply chain and recycling
- Investing in RE farms, partnering with existing RE sources to deliver power requirements
- Partnering with Governments to assure access & support over grid to secure continuous power

Development of World-class R&D Facilities



'World-class' research facilities in India and UK



Forge next generation of STEM graduates



Develop local & international R&D ecosystems



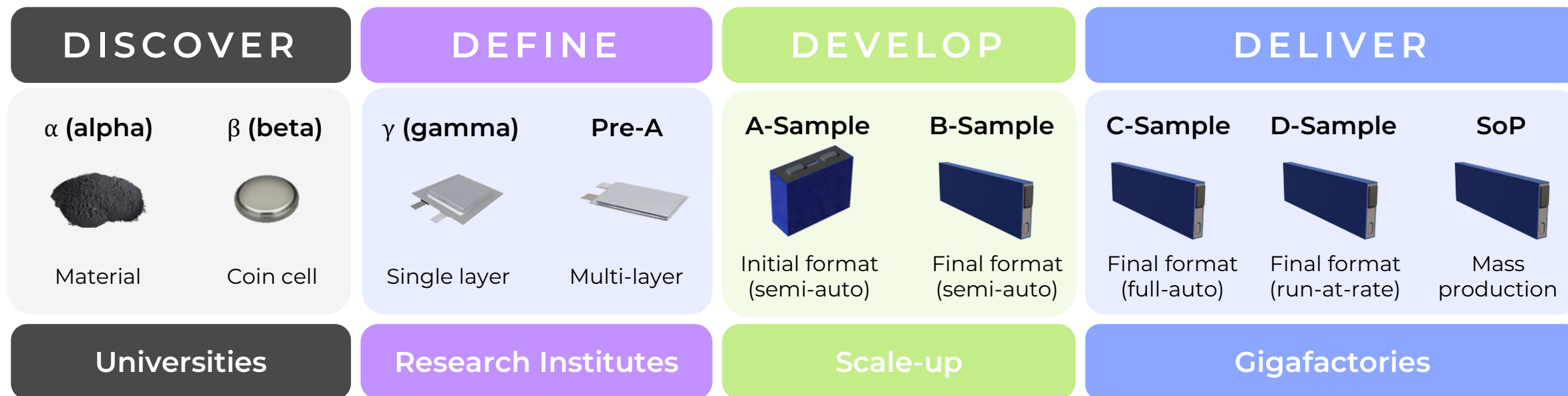
Strong connections with leading academic and research institutions



Deep-rooted industrial partnerships

Key Sustainable ESG Goals in the UK





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Champion innovation: Support the growth of a vibrant ecosystem that seeks to commercialise the UK's 'world class' research capabilities

Training today for the workforce of tomorrow: Talent shortages already exist across 'Discover' to 'Deliver', support needed for future industry workforce ramp-up

DR VALENTINA GENTILI

VICE PRESIDENT OF GLOBAL R&D AT AGRATAS

Thank You