



Ilika – Capital Markets Day
April 2024

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Independent Global Experts in Solid State Batteries (SSBs)

- **Product lines:**
 - **Stereax** miniature cells used primarily to power miniature medical devices and industrial IoT
 - **Goliath** large format cells targeting the automotive industry and cordless consumer appliances
- Developing SSBs for EV use with an oxide electrolyte and silicon anode which reduces raw material costs and increases cell life

2004

Company Founded in Southampton, U.K.

Key Statistics

62

Patents

\$280B

TAM for Automotive Batteries by 2030

£11M

Expected Cash Balance 30th April 2024



Seasoned Management Team

Board and Management Team Offers a Wealth of Diversified Experience Across Multiple Industries



Graeme Purdy
Chief Executive Officer & Co-Founder



- Founding CEO appointed in 2004
- Led two VC funding rounds and IPO
- Previously COO of Avantium BV and early career with Shell. Latterly NED with Bacanora Lithium plc.
- Chartered engineer with an MEng in Chemical Engineering from Cambridge and an MBA from INSEAD



Jason Stewart
Chief Financial Officer



- CFO since Jan 2023
- Previously Interim CFO and other senior roles at Sunseeker International Ltd since 2010; prior to which was at B&Q and Kerry Foods
- CIMA qualified accountant, with a BSc in Business from Manchester Metropolitan University



Keith Jackson
Chairman



- Former Chief Technology Officer at Rolls Royce Engines PLC and Meggitt plc
- Professor at Sheffield University's Automated Control and Systems Engineering department
- Non-Executive Chairman of Libertine FPE



Jeremy Millard
Non-Executive Director



- Founded Iridium Corporate Finance
- Non-Executive Director and Chairman of the audit committee of Cambridge Nutritional Sciences plc
- Leverages over 20 years of investment banking experience, providing corporate finance advice to science and deep technology sector clients



Monika Biddulph
Non-Executive Director



- Non-Executive Director on the board of Celebrus Technologies plc, AFC Energy Plc and Power Roll Ltd
- Senior leadership at Arm Holdings until 2018
- Wide range of experience in both the commercial and technical aspects of an international technology business
- Holds a PhD in Physics from the ETH Zurich



Louise Turner
VP of Product Development



- Holds a PhD in physical chemistry from the University of Southampton (2012)
- MBA from Qantic University (March 23)
- Previously Stereax Technical Director
- Her areas of expertise include the application of high throughput methods for the development of electrocatalysts and solid-state lithium-ion battery materials

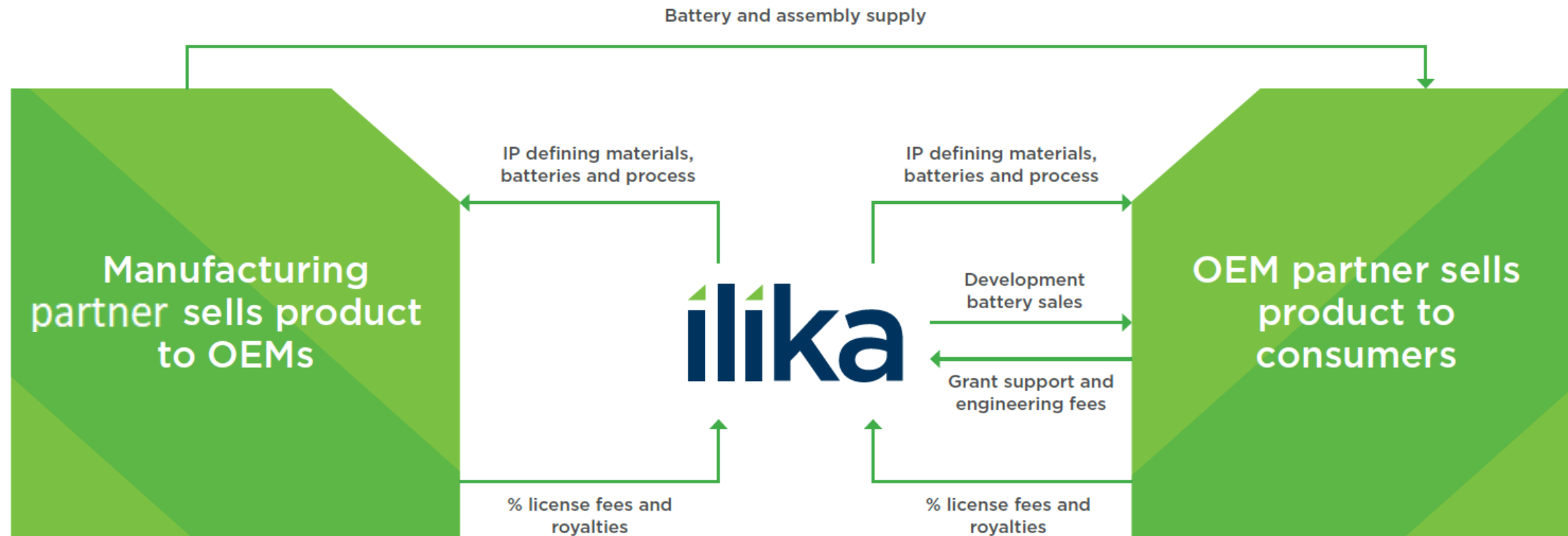


John Tinson
VP Sales & Marketing

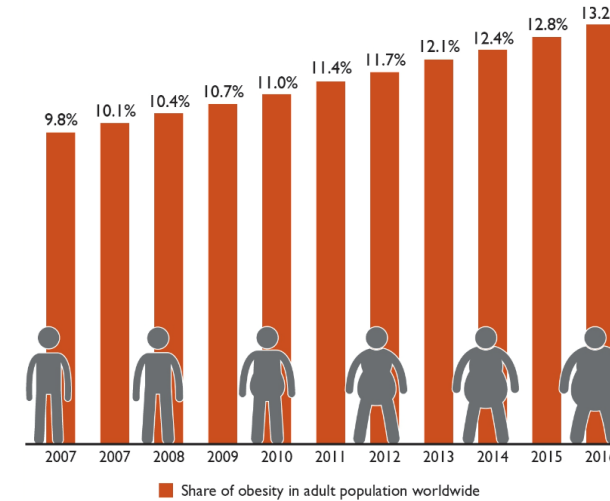


- Joined Ilika in 2019 as VP Sales & Marketing
- holds a degree in Physics from Birmingham University
- Career focused on early-stage UK technology companies in sectors such as opto-electronics, cabling solutions, industrial lasers and semiconductor design

Asset-light licensing model demonstrated on production-intent equipment



- Across the world people are living longer, but not necessarily healthier lives, creating an immense **burden on healthcare systems** and demanding new approaches to therapeutic productivity
- The use of **smart electronic Active Implantable Medical Devices (AIMD)** are at the forefront of a search for efficacy and productivity

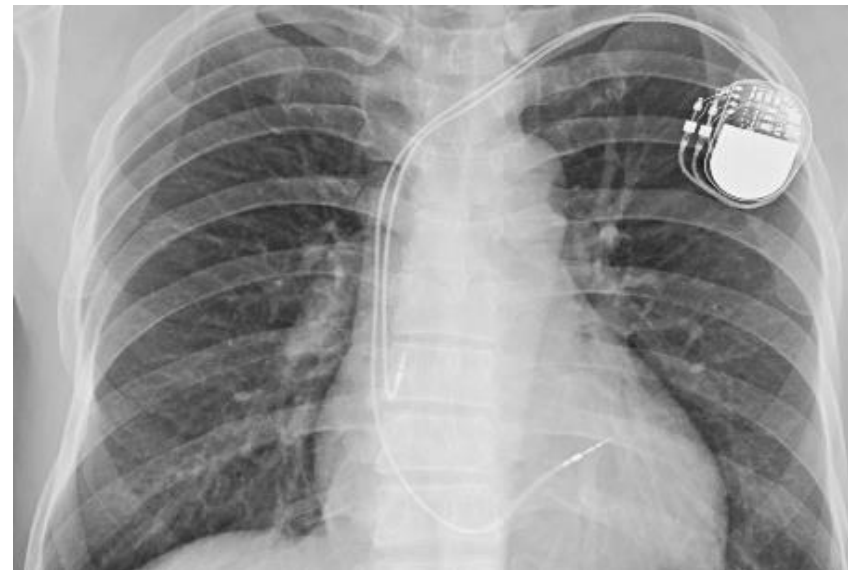


CHRONIC PAIN STATISTICS

- 20.9%** of US adults are living with chronic pain
- 8 in 10 patients** with chronic pain are affected by severe depression
- 1 in 4** people with chronic pain have been diagnosed with clinical insomnia
- 10%** of the world's population is affected by chronic pain

+HE GOOD BODY

Today the battery is largest component in AIMD



Large primary cell can only be fitted to chest or buttock space pockets in body



Small rechargeable cell, but low power (C-rate) and cycle count

Stereax Technology (smaller battery technology) is Capable of Revolutionizing the Medical Implant Industry

Increasing Rate of Implantation – A more compact AIMD enables quicker and less risky surgery (day surgery)

Locating device next to point of therapy – Today’s larger batteries can only be located in 2-3 pockets in the body

Long life in the body & user recharge at home – Fewer re-insertions for expired battery. User can charge at home (and not at the doctors as today)

Able to power Bluetooth radio – The high-power capability of Stereax easily powers a Bluetooth radio to send data outside the body to a receiver

	Medical Li-ion Batteries	Stereax Solid State Batteries	
Small Footprint			
Ultra-thin			
Fast Charge / High Discharge Power			
Safety			
High Temperature Tolerance			

Stereax: Large and Fast-growing Markets

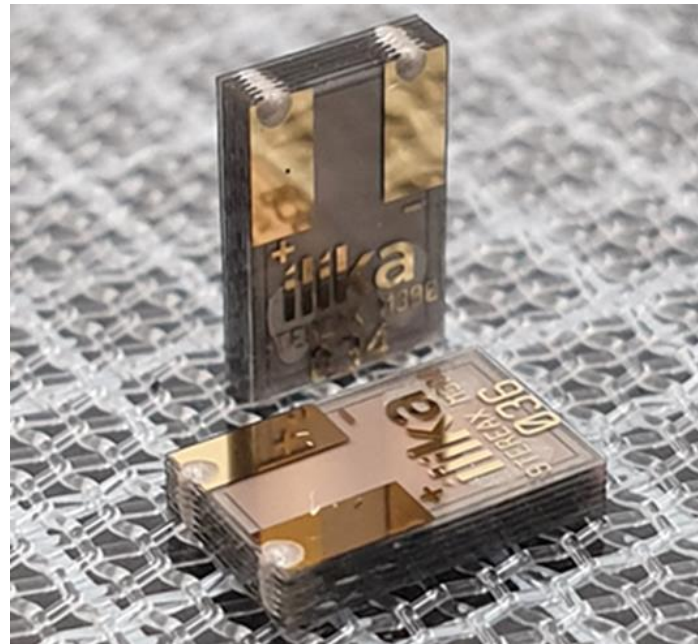
Demand for Medical Batteries is being driven by Innovation in Electroceuticals and Sensors

AIMD Market Penetration*

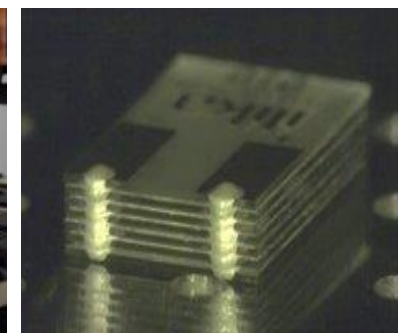
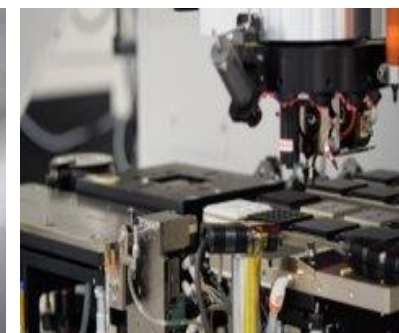
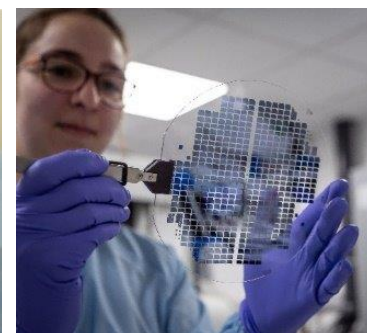
\$5.7B
18.1% CAGR

Neuromodulation	Implanted sensors	Orthopedics	Ophthalmic	Orthodontic
\$4.2 Bn (2024) CAGR: 9.5%	\$6.0 Bn (2023) CAGR: 11.1%	\$26 Bn (2023) CAGR: 4.2%	Projected: \$1.3 Bn (2030) CAGR: 29.3%	\$5.8 Bn CAGR: 24%
<ul style="list-style-type: none"> Cognitive disorders Chronic pain Stroke Psychiatric disorders 	<ul style="list-style-type: none"> Cardiovascular Oxygen pressure, temperature ... 	<ul style="list-style-type: none"> Data capture from spine / knee / hip Implants 	<ul style="list-style-type: none"> Diabetes & glaucoma monitoring 	<ul style="list-style-type: none"> Monitoring of braces pH, glucose...

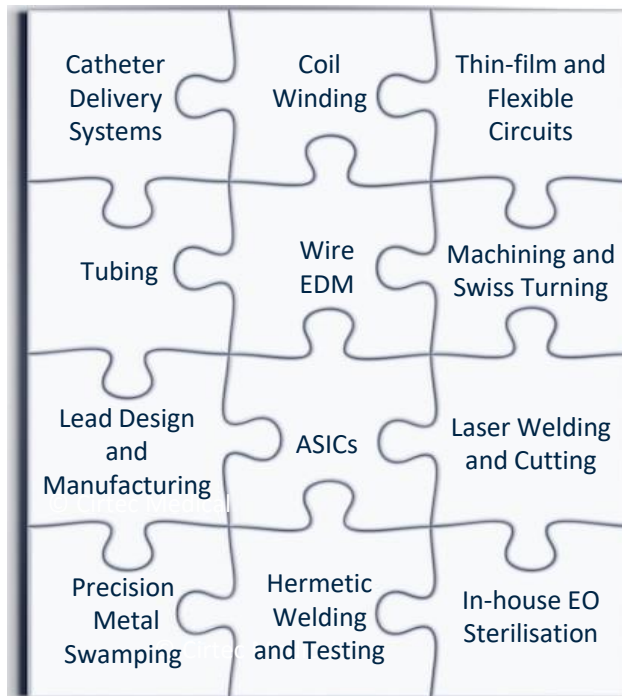
Stereax: Ilika's Unique Miniature Battery



Parameter	@ 37°C	Value
Charging		Rechargeable
Rated capacity	μAh	300
Nominal voltage	V	3 – 4
Max pulse current	mA	3 (10C)
Cycle Life (to 80% capacity)	cycles	> 1000 (50% DoD)



Cirtec Medical: an industry-leading vertically-integrated outsource partner for medical devices and components



Partnership Benefits to Ilika:

Validation of Stereax product and process

Medical Manufacturing & Scale: Cirtec hold the medical accreditations and have the size and scale to meet customer ramp expectations

Business Development: The partnership gives Ilika access to a larger sales & marketing resources

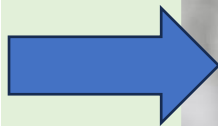
Alignment: Cirtec and Ilika have the same AIMD applications focus

Cirtec have developed a **neurostimulator technology platform**

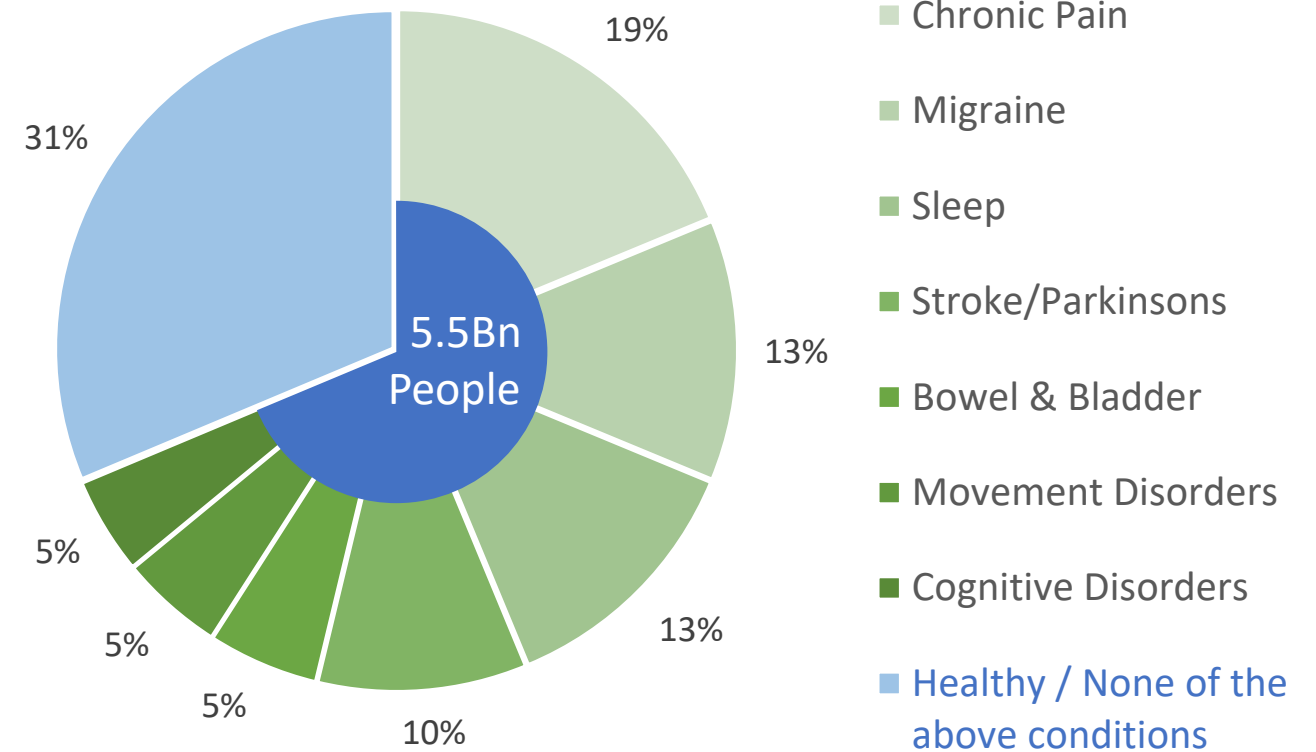
Status: key equipment sets transferred to Cirtec, commissioning proceeding

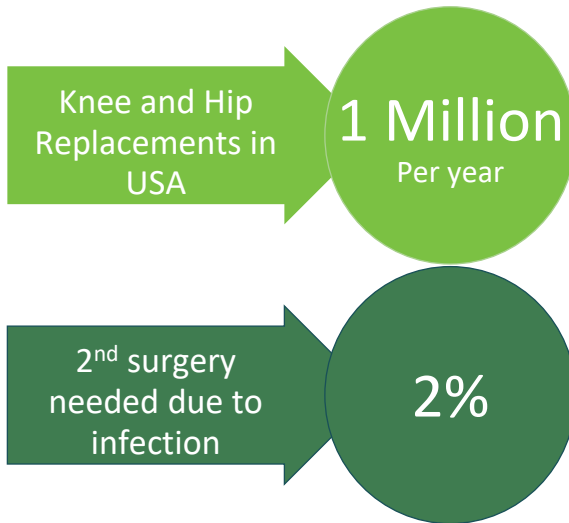


Miniaturisation enables implantation of Pulse Generator nearer targeted organ in less intrusive procedure



Worldwide Prevalence (%)





Challenge

- Only way of detection is through patient discomfort
- Real-time sensors currently too big due to battery

Solution

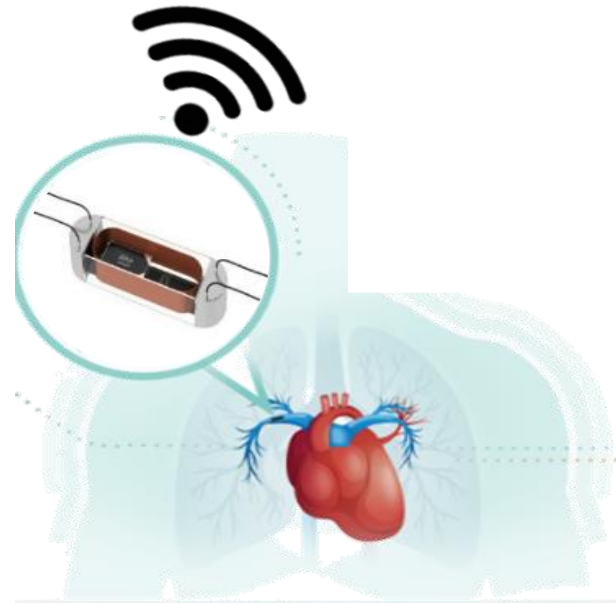
- Smart orthopaedics allow for early detection, saving insurers money
- Miniature SSB can provide long-lasting battery life



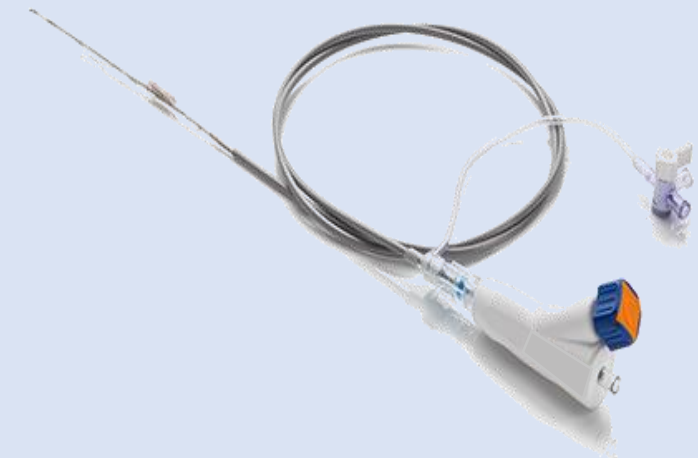
Sensing:

- Pulmonary heart pressure
- Blood pressure
- Pulse
- Blood oxygen
- Weight
- Symptoms

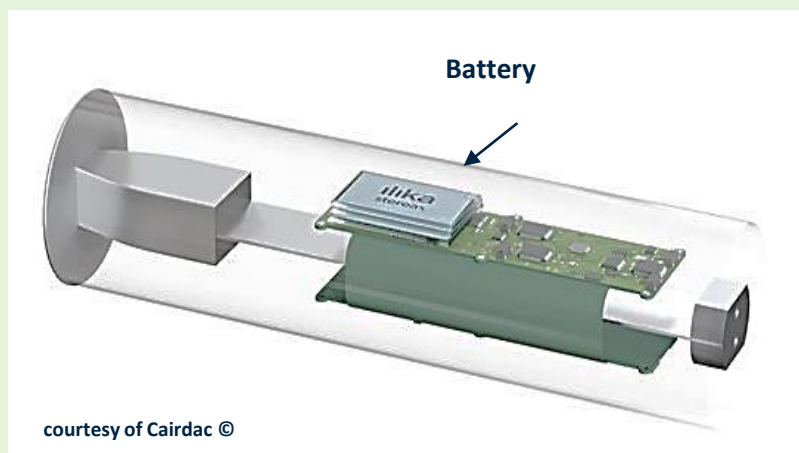
Wireless data transfer



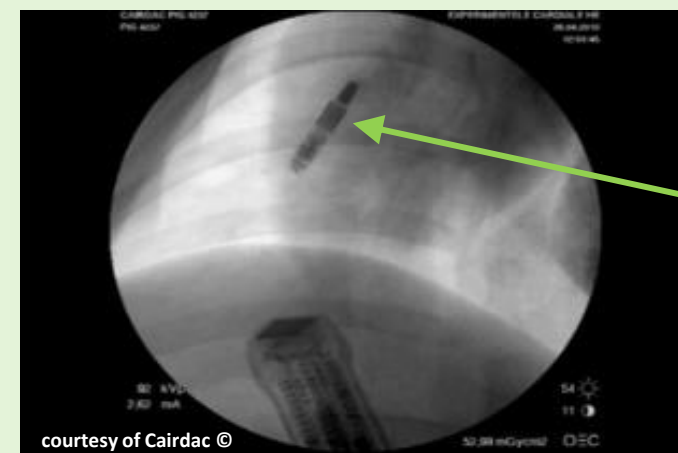
Insertion by catheter



Back-up for leadless pacemakers



courtesy of Cairdac ©



courtesy of Cairdac ©

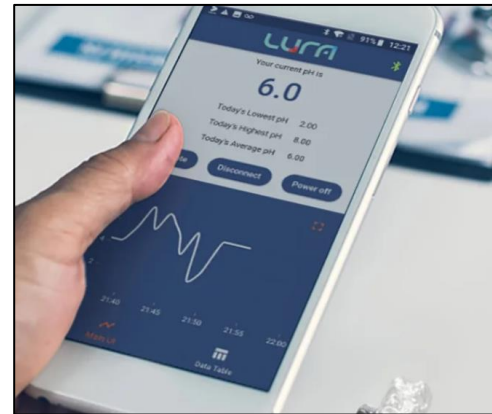


Stereax Application: Smart Orthodontics

Saliva is the new blood for health diagnostics!

From their phone, users can check vital diagnostic information and receive **real-time** health alerts with preloaded medical advice or products from their doctor to correct health imbalance

- pH (Acidity)**
Tooth Decay (Caries) | Tooth Erosion | GERD
- Glucose**
Diabetes
- Electrolytes: Sodium, Potassium**
Chronic Kidney Disease (CKD) | End Stage Renal Disease (ESRD) | Hypertension | Heart Disease
- Biologics**
Numerous Conditions

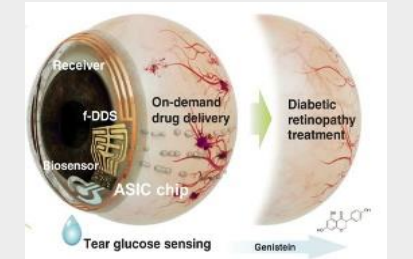


courtesy of Lura Health ©

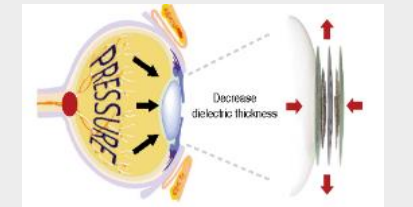


Eyelid-worn battery pack for wireless power transmission to smart contact lens

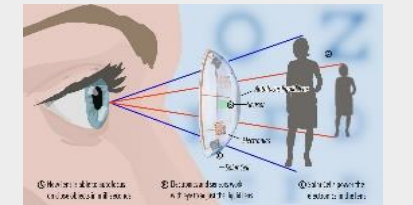
Active diabetic retinopathy for real-time monitoring of glucose level



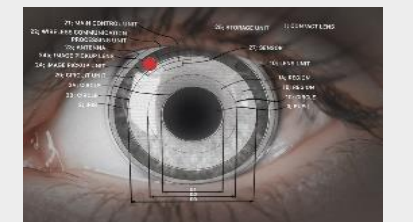
Monitoring of Intra-Ocular Pressure (OAP)



Sight Correction (presbyopia)

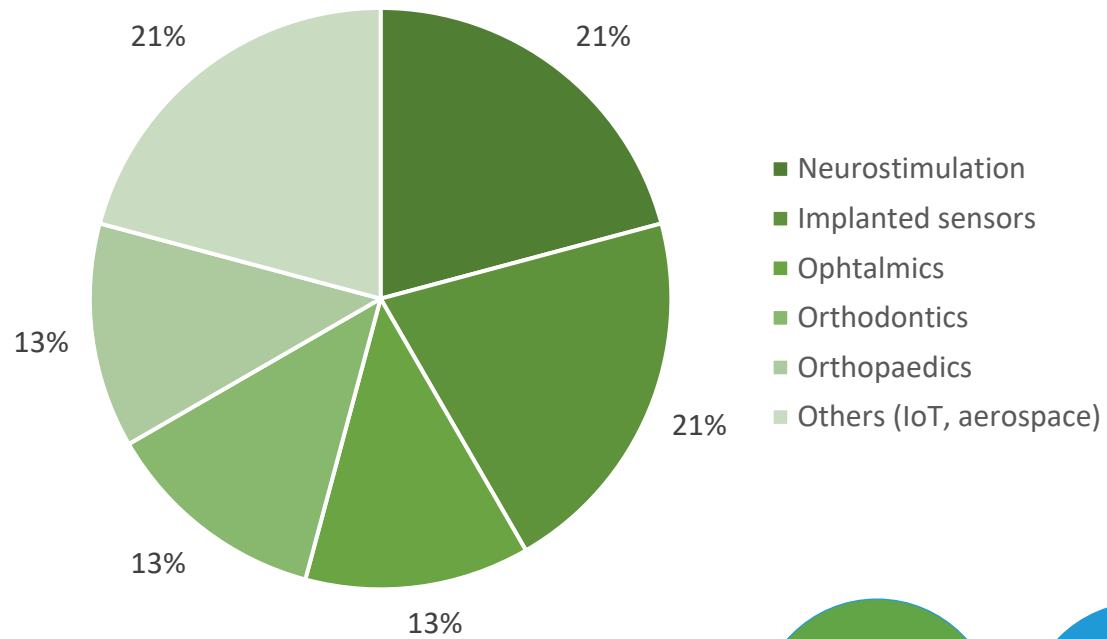


**AR/VR
(Display, eye tracking, comms)**

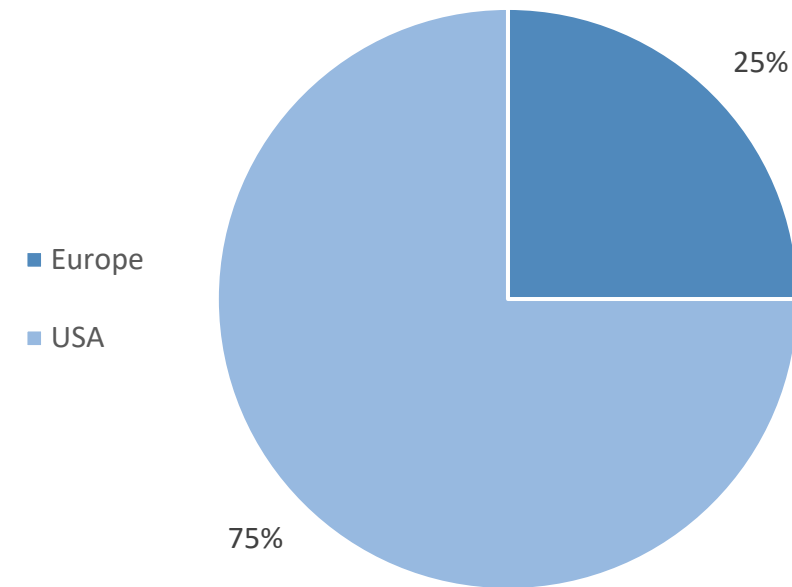


Initial commercial orders from a US-centric customer base

Stereax Orders by Application



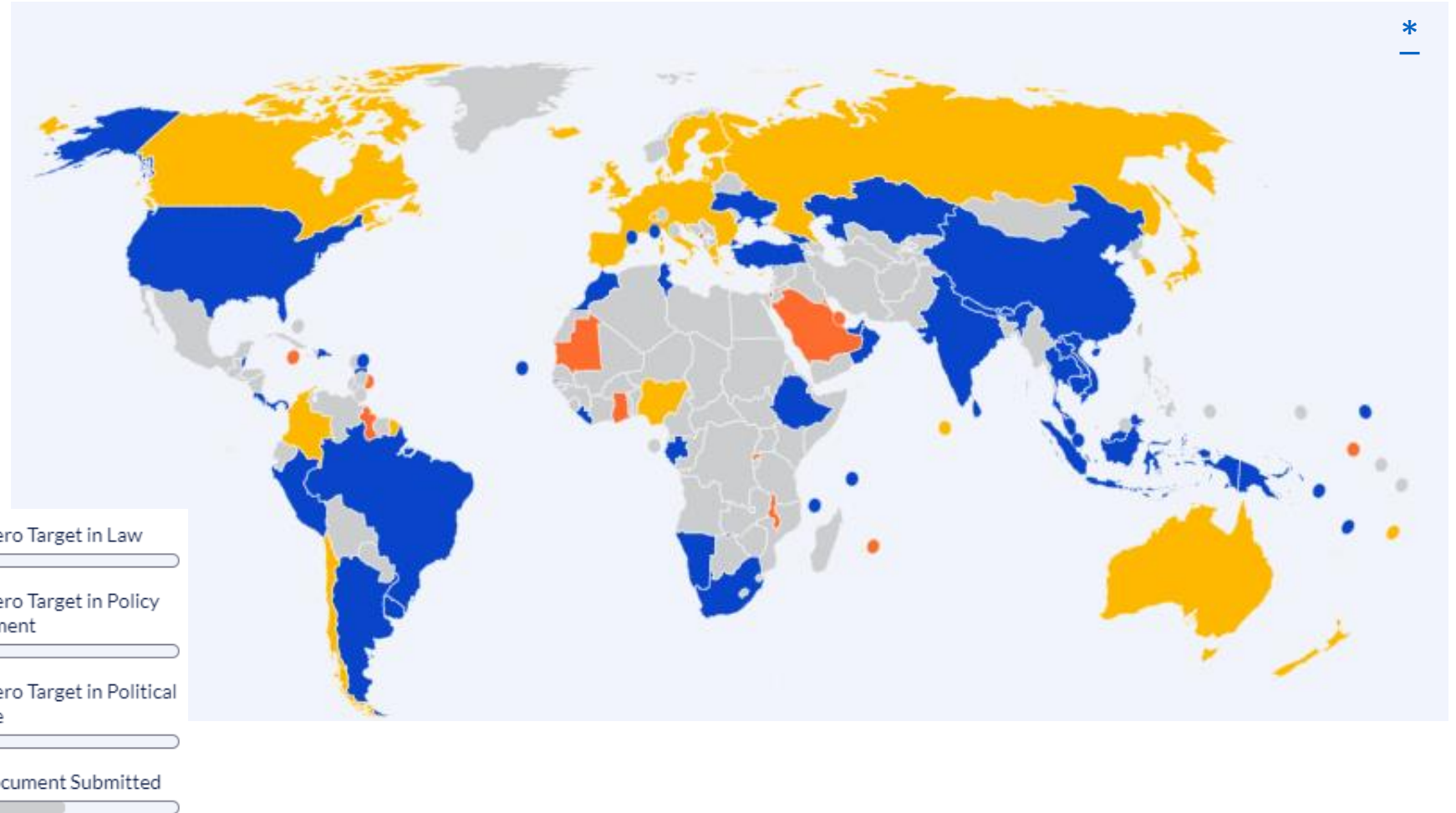
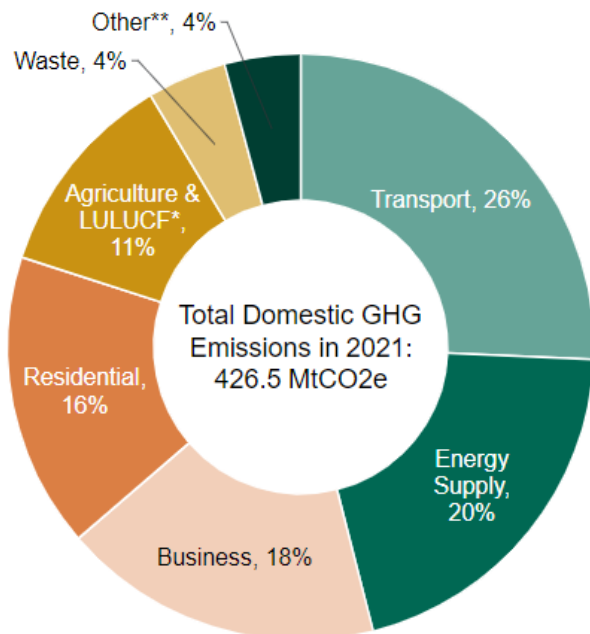
Stereax Orders by Geography



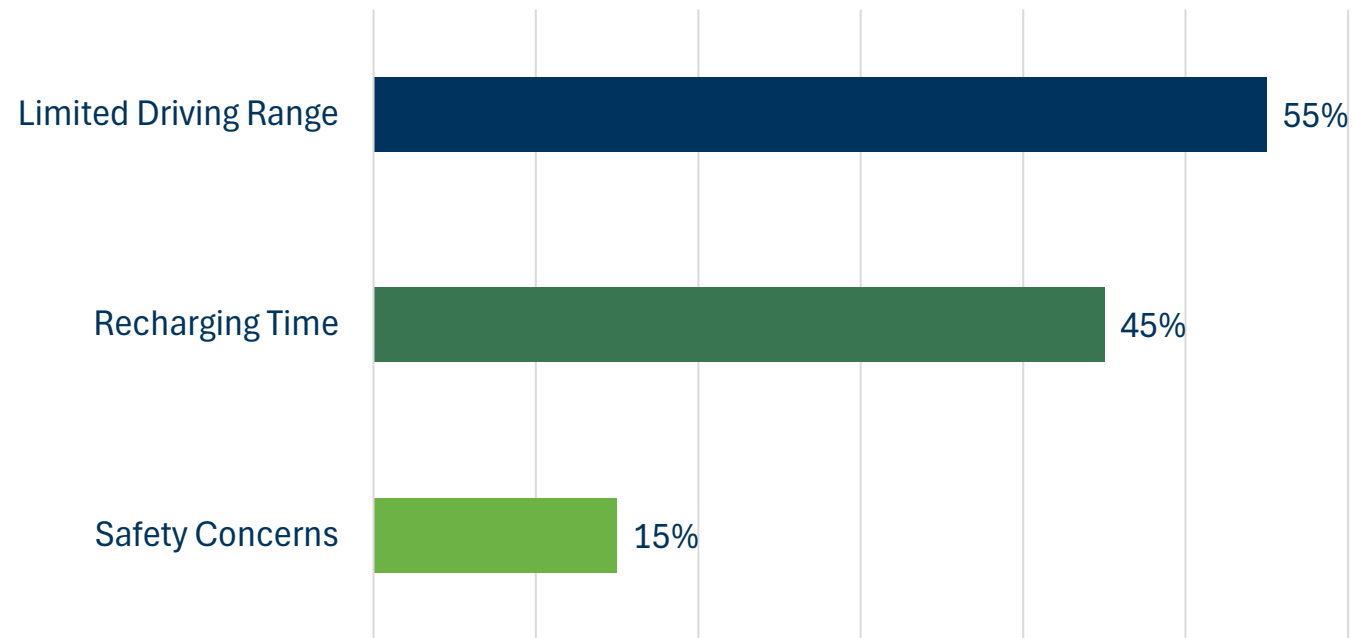
21
Companies

24
Orders

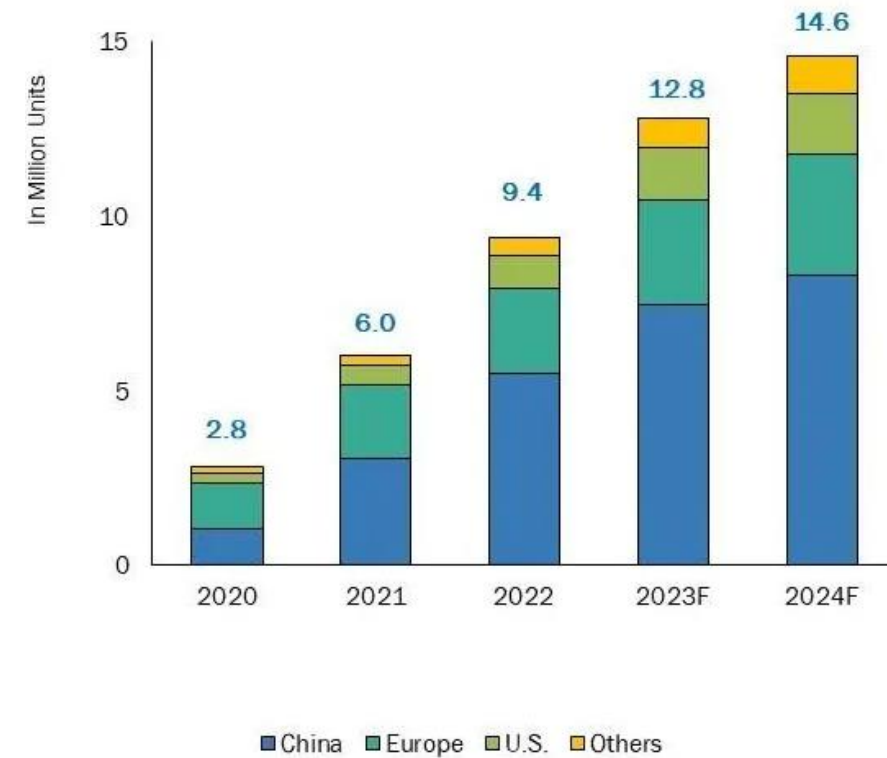
- **145 countries** announced net zero targets
- Covering ~ **90%** of global emissions *****
- Transport is the largest emitting sector *****



Reasons for not purchasing an Electric Vehicle ¹



EV sales momentum is strong ²



¹ Adapted from CVMA, 2021
² Forbes, 2024

Goliath: Ilika's Cutting Edge Solid State EV Battery



Goliath unique features will alleviate consumers anxieties



FEATURES



Non-flammable
No liquid



Competitive
performance
vs Li-ion



Can operate
to higher
temperature

BENEFITS



Lighter vehicle
High cell-to-pack ratio

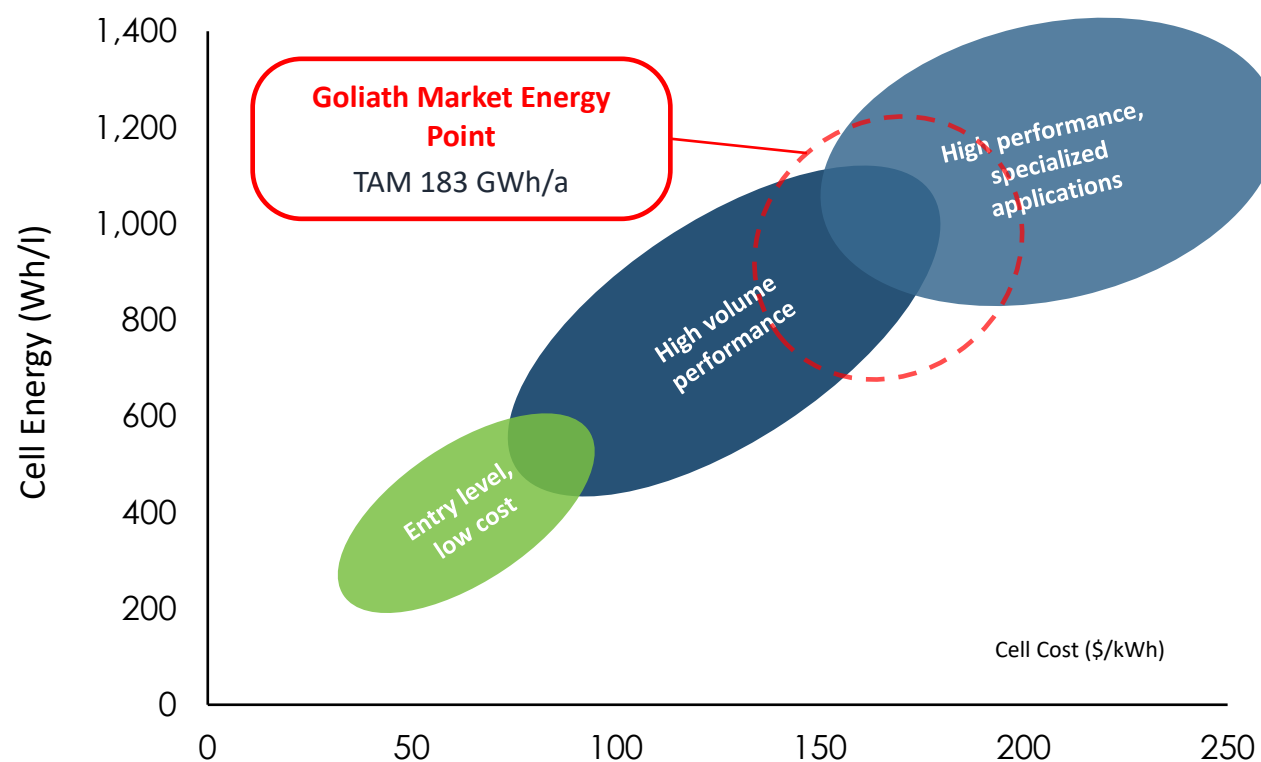


Longer range

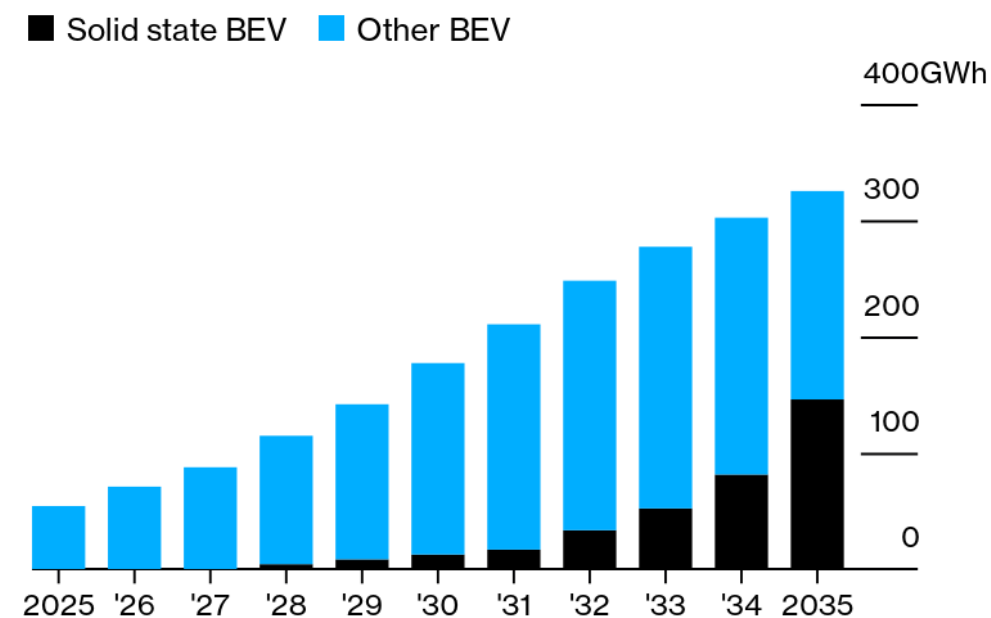


Safe in
manufacture, use
and recycling

ilika Targets Performance Market

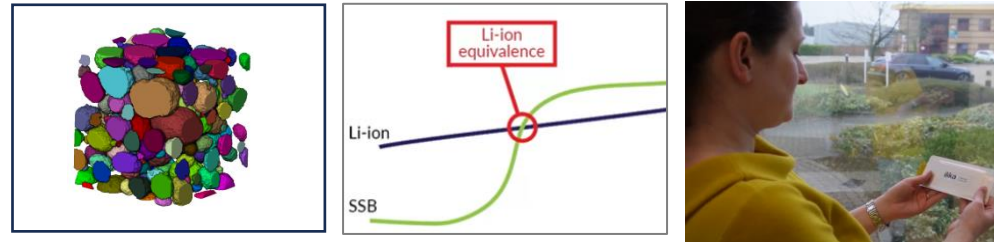


Attractive SSB Market Forecast ¹



¹ BloombergNEF, 2022

Goliath: Strong Progress to Date



£8.2m HISTORY program award

Li-ion Parity Achieved

D4 Milestone Achieved

2023

2024

2025

TECHNOLOGY

MANUFACTURING

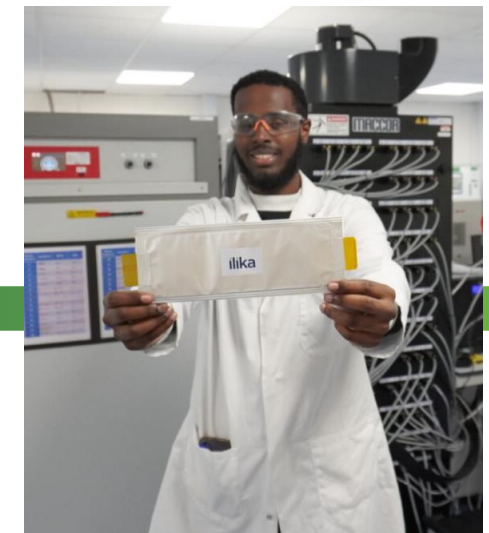
Trials at equipment vendors

R2R coating in-house

Design of Assembly Line

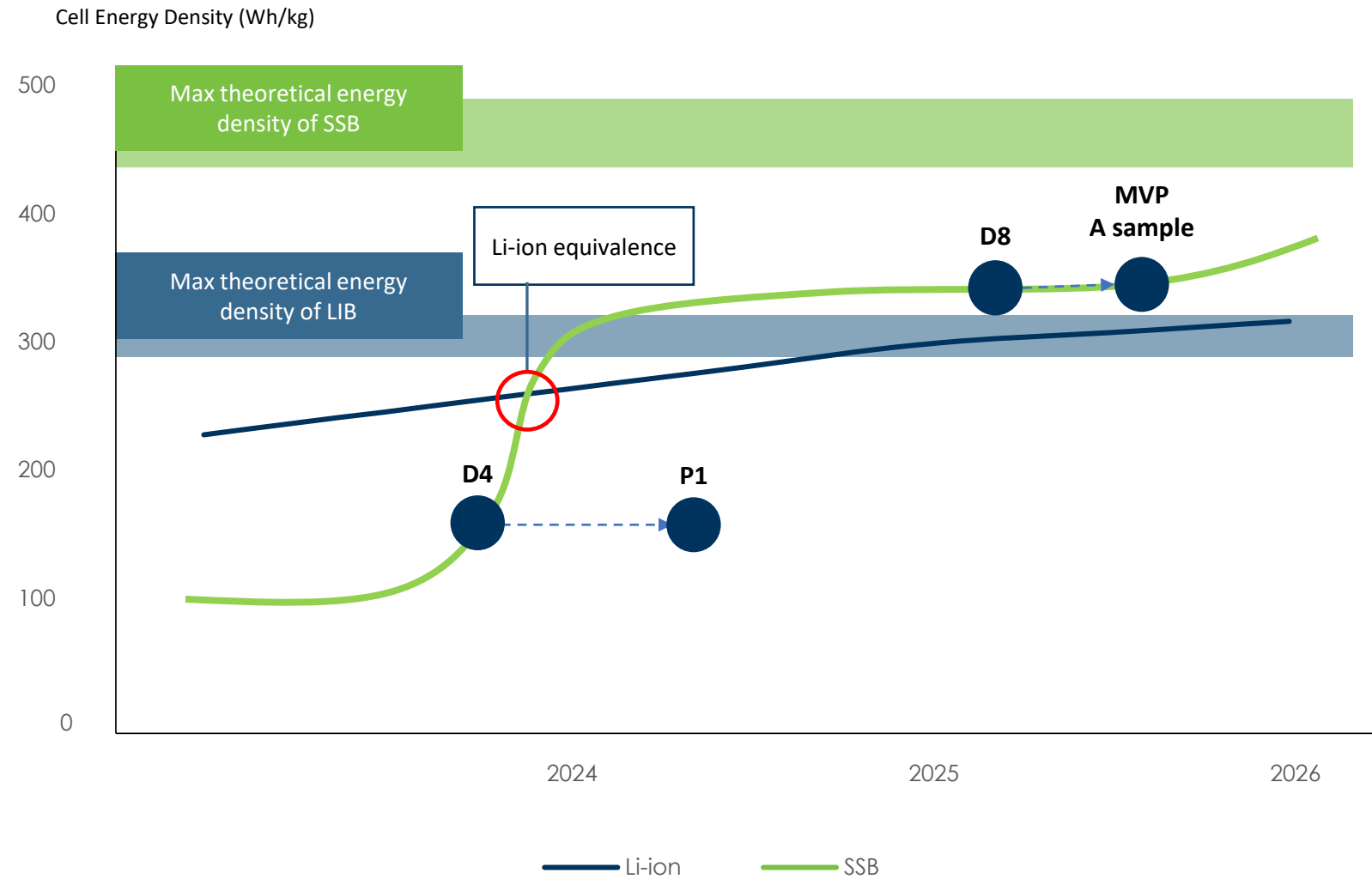


Delivery of MVP



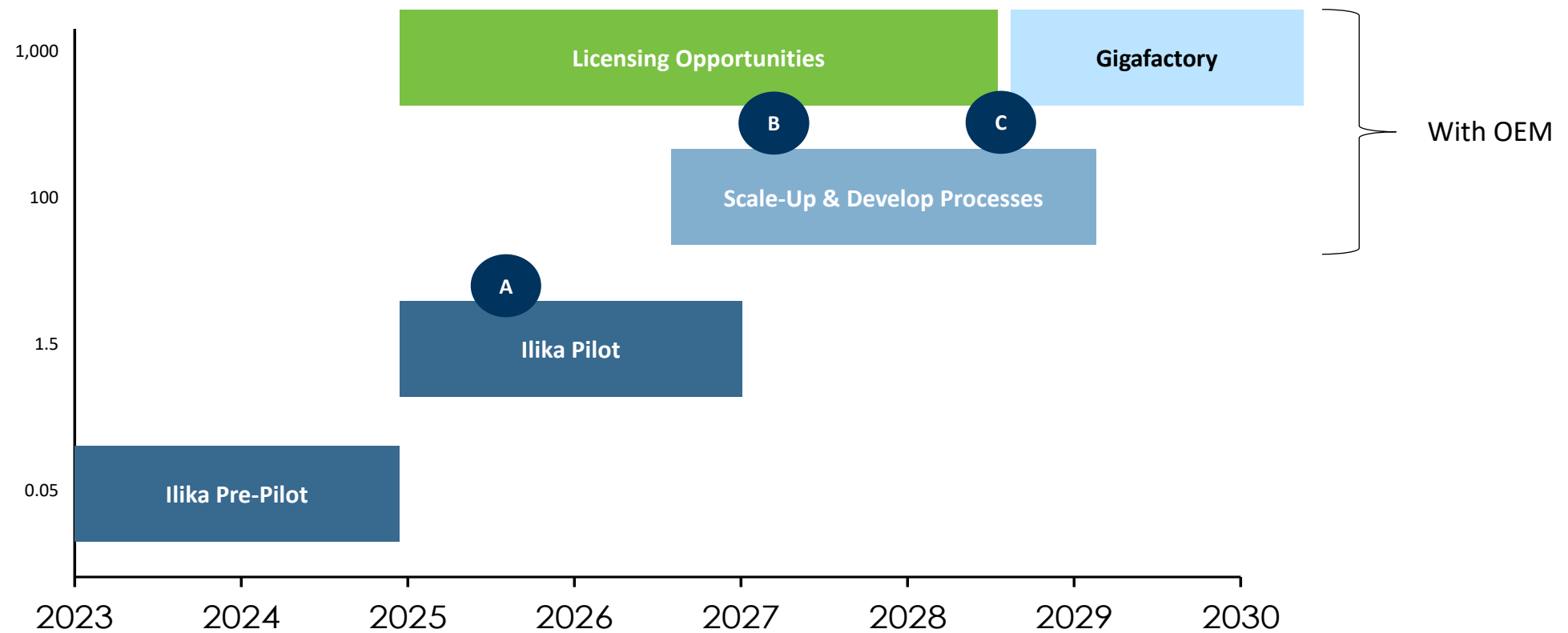
Goliath: Technology Roadmap

Solid-State Battery Energy Density



Ilika Scale-up Plan and Business Model

Production Volume / MWh per year

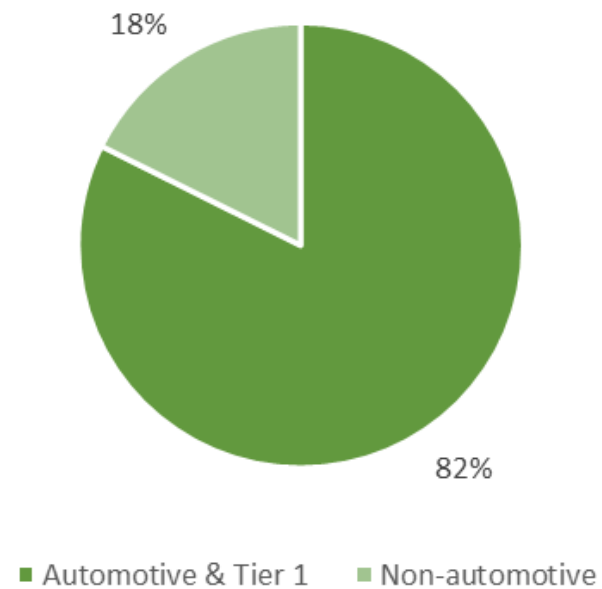


A MVP (A-samples) allow the Company to enter RFQs

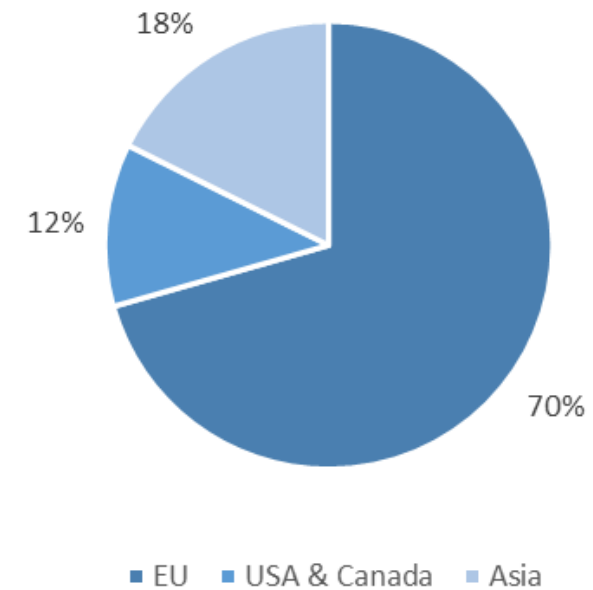
B **C** Collaborate to produce B, C samples on production-intent equipment

Strongest demand from European automotive OEMs

Goliath MTA / NDA by Application

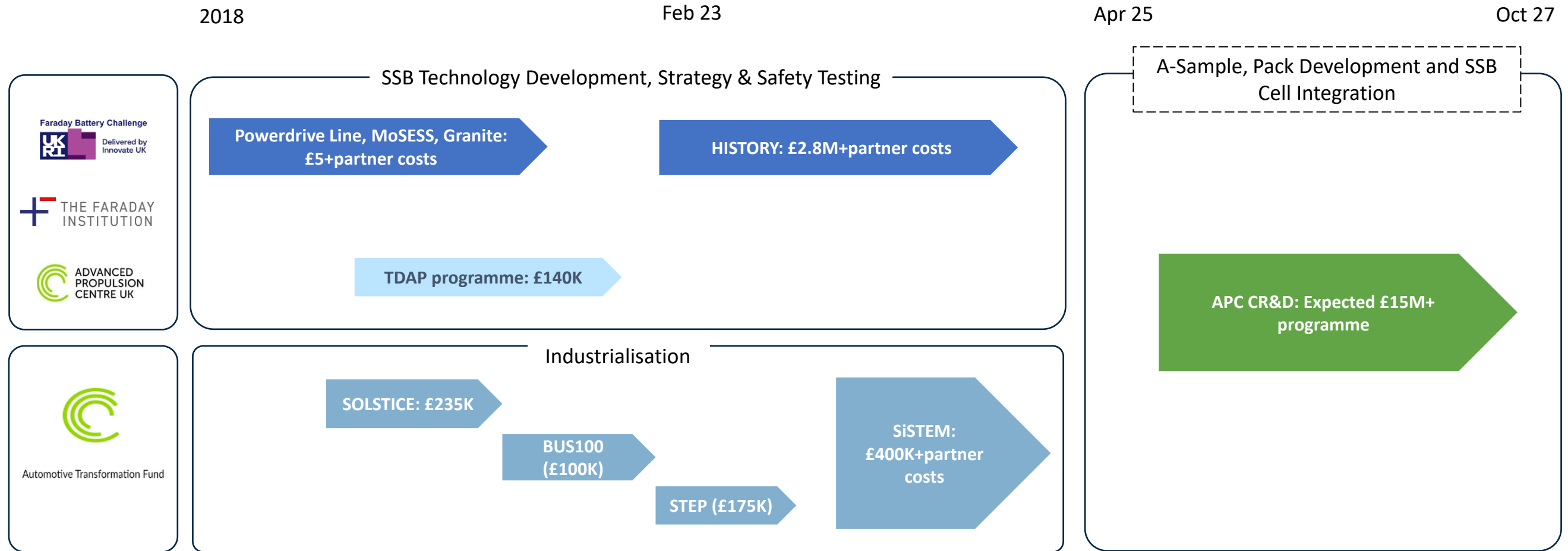


Goliath MTA / NDA by Geography



17
Companies

UK Grant funding in support of Goliath



Goliath: Partnering for Manufacturing Scale-up

Ilika is receiving support from the Automotive Transformation Fund



UK BATTERY
INDUSTRIALISATION
CENTRE



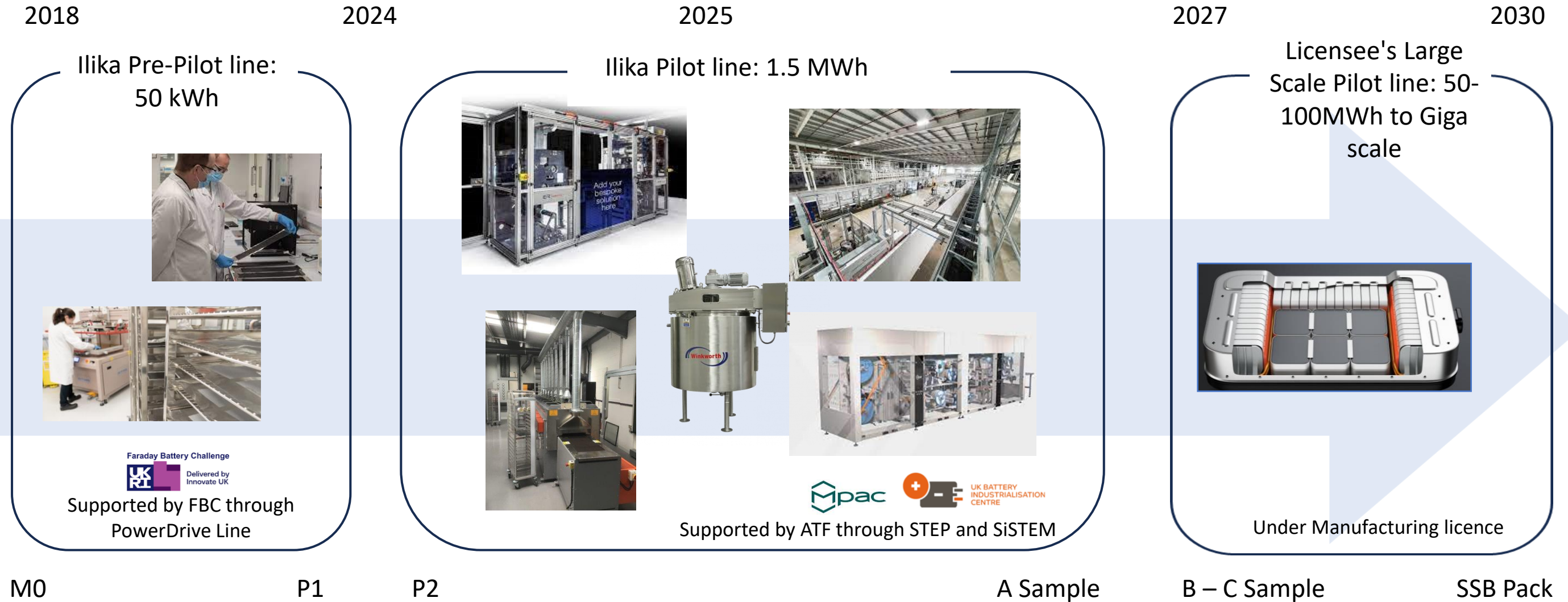
- ▲ ATF SuRV2: SiSTEM
- ▲ 17-months from Oct 2023
- ▲ Programme value £2.7m/£400k Ilika grant funding

Objectives:

- Undertake physical trials of Ilika's electrode production at UKBIC
- Design, build and commission a 1.5MWh assembly line capable of delivering A sample batteries



Goliath: Partnering for Manufacturing Scale-up



Ilika Plc, un-audited financial results for the half-year ending 31 October 2023

- ▲ **Total Income £1.3m (H1 2023: £0.2m)**
 - Substantial increase over FY23 due to HISTORY grant, supporting Goliath.
 - Income from grants of £1.3m (H1 2023: £0.2m)
 - HISTORY will continue through to the beginning of 2025, with the total project income expected to be £2.8m.
 - Expected total income for year ending April 2024 of approximately £2m

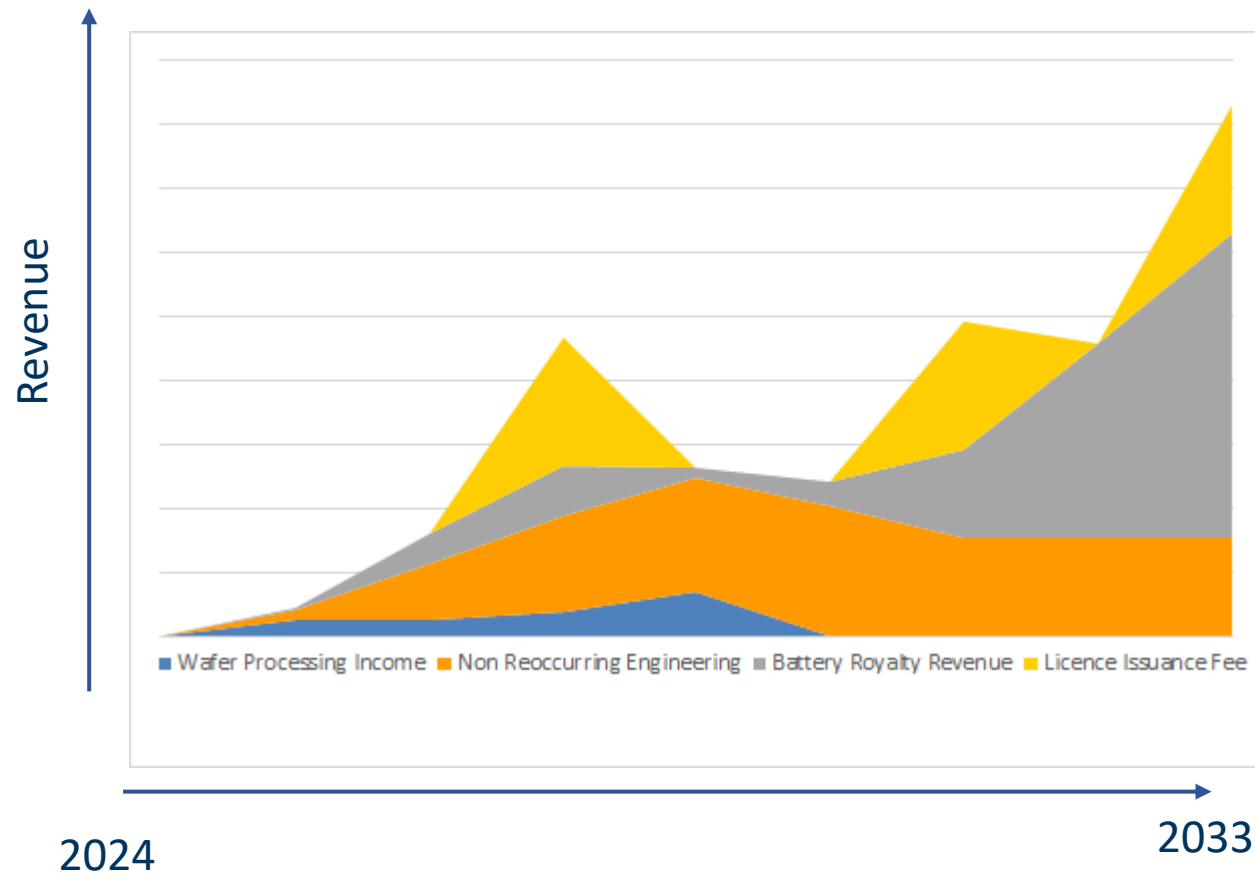
- ▲ **EBITDA loss, excluding share-based payment £1.9m (H1 2023: £4.1m loss)**
 - Improved due to higher grant income and a reduction in operating costs.
 - Operating cost reduction through Cirtec technology transfer process and normalisation of the UK inflationary environment.

- ▲ **Cash balance £13.2m (H1 2023: £18.6m)**
- ▲ **Expected cash balance for year ending April 2024 of approximately £11m**

	FY20 £m	FY21 £m	FY22 £m	FY23 £m
Grants	2.5	2.0	0.0	0.7
Revenue	0.4	0.2	0.5	0.0
Other Income			-	0.1
Total Income	2.8	2.3	0.5	0.8
EBITDA Loss*	-2.1	-2.3	-6.4	-7.0
Cash & Cash Equivalents	14.8	9.8	23.4	15.9

* EBITDA Loss excluding share based payments

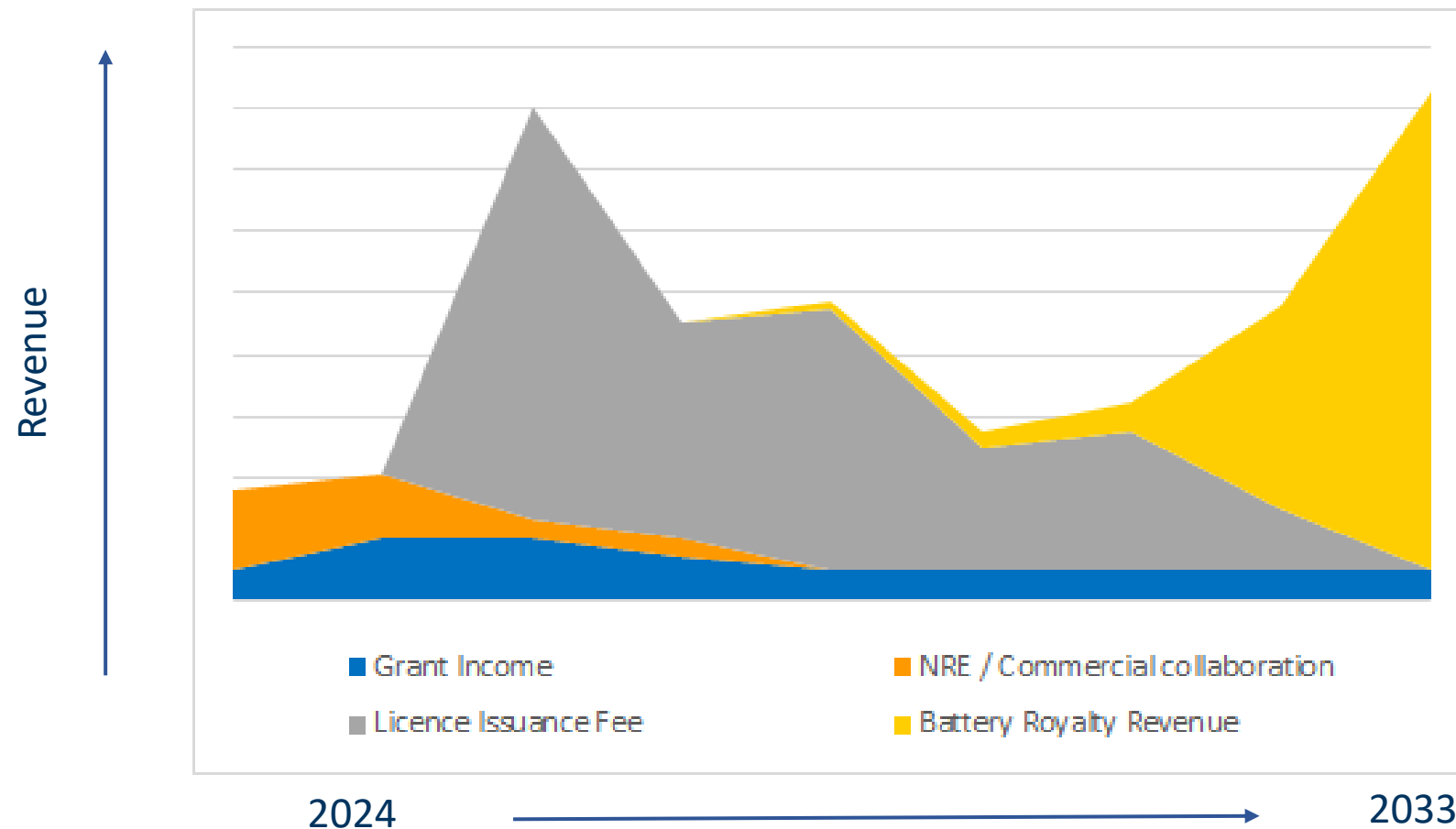
Ilika Revenue from Stereax product lines



Income growth from Stereax product will be derived from several revenue streams which build as market penetration increases

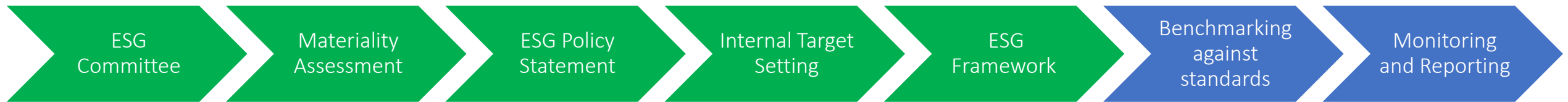
Goliath Revenue Growth Profile

Ilika Revenue from Goliath product lines



Income growth from Goliath product will be derived from several revenue streams, with grant revenue in early years being replaced with licence income before self-sustaining licence revenue as Goliath batteries are deployed on a Giga scale

ESG is of utmost importance to Ilika and is monitored at board level
 We continue to remain ahead of reporting requirements through our commitment to ESG



- Integration of most material items to business risk and opportunities registers
- ISO 14001, ISO 9001, Carbon Reduced Organisation
- Long Range Strategic Plan and ESG Framework initiated:
 - Risk and Governance
 - Ethical Supply Chain Planning
 - Environmental Commitment
 - Development and Opportunities



Scale Stereax through joint manufacturing and marketing with Cirtec

Mature Goliath technology with partners through defined technical milestones

Continue pursuing grant support and commercial revenue through partnering

Commercial opportunity continues to build for Ilika's technology across the large addressable markets providing a strong platform for future growth