

The logo for 'ilika' is centered on a dark blue background. The text 'ilika' is in a white, lowercase, sans-serif font. The first two 'i's have small green triangles above them. Two thin diagonal lines, one white and one green, cross the background from the bottom-left towards the top-right.

ilika



Ilika Half Year Update

Graeme Purdy, CEO

Jason Stewart, CFO

January 2023

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Graeme Purdy

Chief Executive Officer



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



Jason Stewart

Chief Financial Officer



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

Ilika is one of the few independent global experts in the design and manufacture of solid state batteries

- 
- 
- Manufacturing miniature Stereax® technology
 - Developing Goliath solid state pouch cells for consumer appliances and EVs

Why Solid State for Medtech?

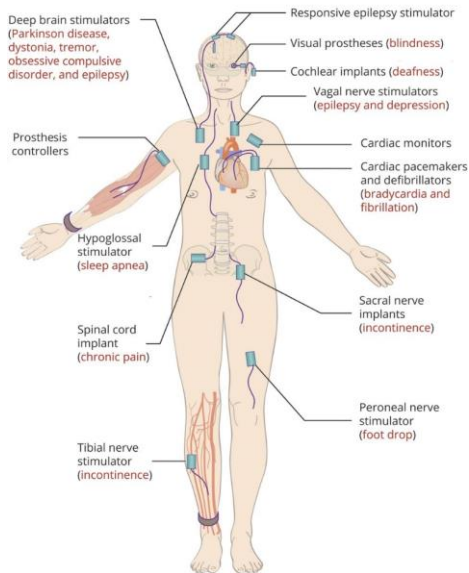
Ultra compact: occupy half the volume of Li-ion, enabling smaller designs

High power density: deliver power pulses for therapy and communication

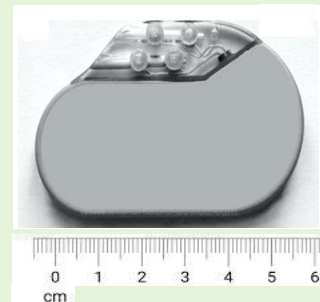
Safe: no toxic fluid leakage possible



Neurostimulators are bioelectronic devices targeting the neural circuits of organs



Implantable Neurostimulators Market
\$16bn by 2027, CAGR 11.7% [ref](#)



Mm-scale batteries enable miniaturisation in neuromodulation, implanting devices nearer the targeted organs

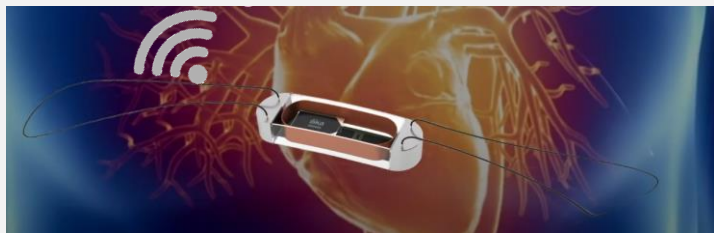


- ▲ Cardiovascular diseases are the #1 cause of death globally, taking 17.9M lives each year
- ▲ Implanted sensors can help with heart failure prevention, and stroke and arrhythmia monitoring



Sensors

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



Data wirelessly transmitted to monitor at home or medical practice

Miniature batteries enable implantation via catheter



Stereax M300



Pressure Monitoring Market
\$5.5bn by 2027, CAGR 5.5% [ref](#)

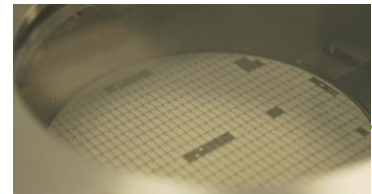
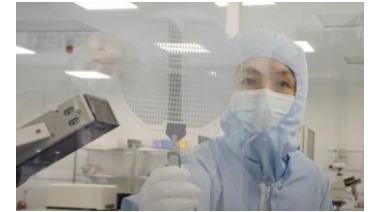
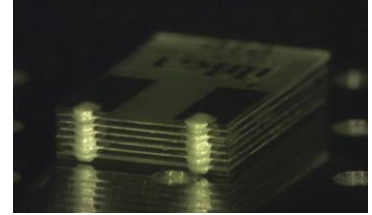
Cardiac Monitoring (ECG, loop recorders)
\$2Bn by 2028, CAGR 9.6% [ref](#)



Operational Implementation



- 1,600 m² UK fab installed on-time and on-budget in 2021
- Carrying out product qualification and process optimization to increase yield
- Alpha samples of minimum viable product (M300) currently undergoing testing
- Initial orders from 18 customers with deliveries starting Q2/2023

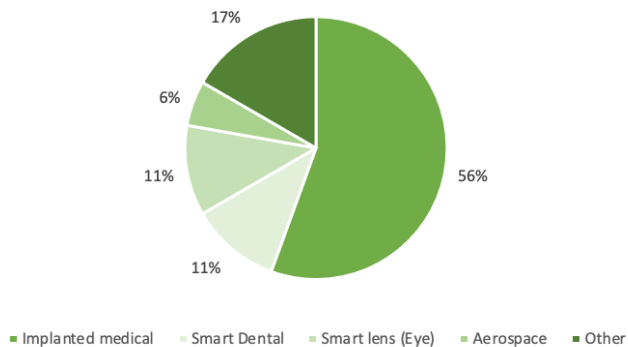


Initial commercial orders from a diverse Medtech customer base

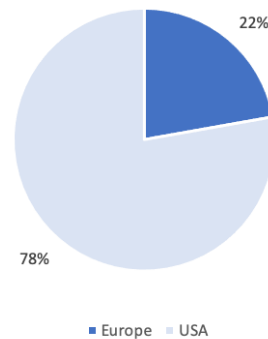
Company Name	Type of Company	Country	Intended Application Area	Sector Size & CAGR	Customer Device SAM* (devices)	Customer Device SOM *
A	Start Up	France	Cardiac/Heart Rhythm	\$7bn/7%	100K's	10K's
B	Multinational (Listed)	USA/Israel	Smart Orthodontics	\$2.5bn/19%	Millions	100K's
C	Multinational (PE Backed)	USA	Implanted Medical Devices	\$2bn/7%	100K's	10K's
D	SME	Israel	Neuromodulation / DBS	\$15bn/12%	100k's	30K
E	Start Up	USA	Implanted Medical Sensor	\$1bn/8%	Millions	100K
F	SME Contracted to Listed Multinational	USA	Smart Orthopaedics	\$8bn/6%	500K	25K
G	Start Up (FAANG owned)	USA	Smart Contact Lens	\$100M/39%	Millions	100K's
H	Start Up	USA	Smart Contact Lens	\$100M/39%	Millions	100K's
I	SME Contracted to Listed Multinational	USA	Trauma Screw Mounted Sensor	\$8bn/6%	Millions	100K's
J	Start Up	USA	Smart Dental	\$2.5bn/19%	Millions	80K
K	Government Research Centre	UK	Secure Communications	TBA	TBA	TBA
L	Start Up	USA	Implanted Cancer Sensor	\$1bn/8%	100K's	10K's
M	FAANG	USA	TBA	TBA	TBA	TBA

*Serviceable Addressable/Obtainable Market

Ilika Stereax Orders by Application



Ilika Stereax Orders by Geography



▲ Pipeline dominated by US Medtech opportunities

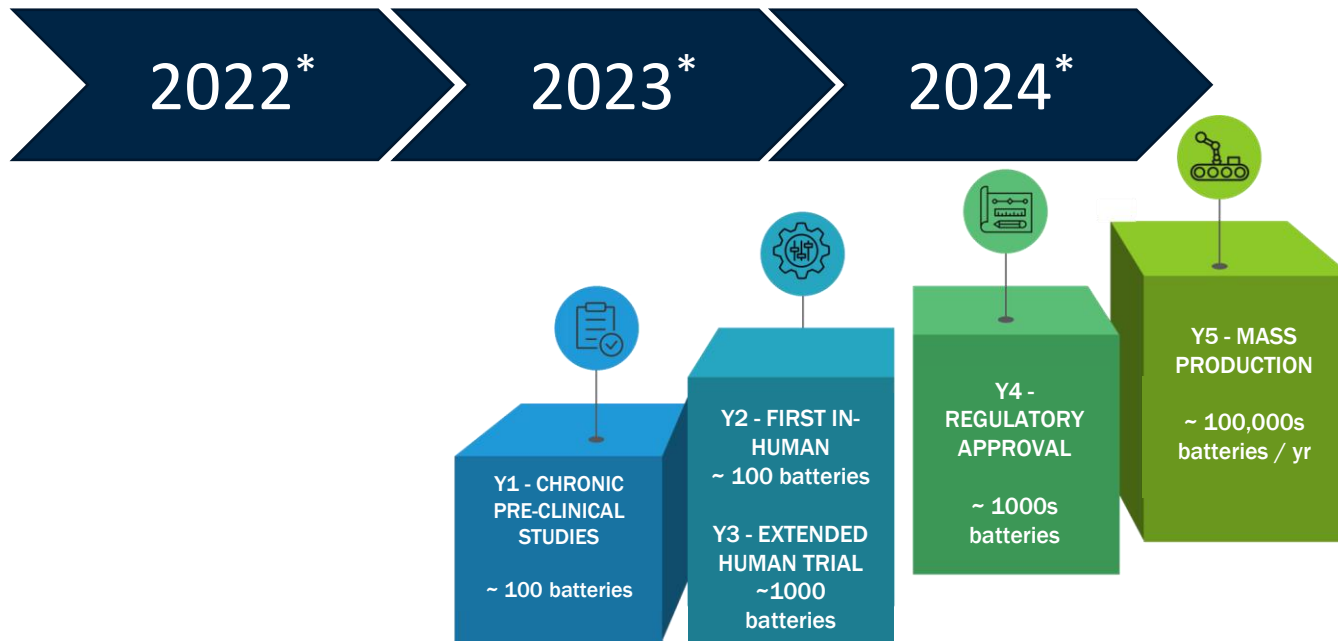
Stereax pathway to launch to support MedTech

H1: Process qualification

H2: Process optimisation
and product qualification

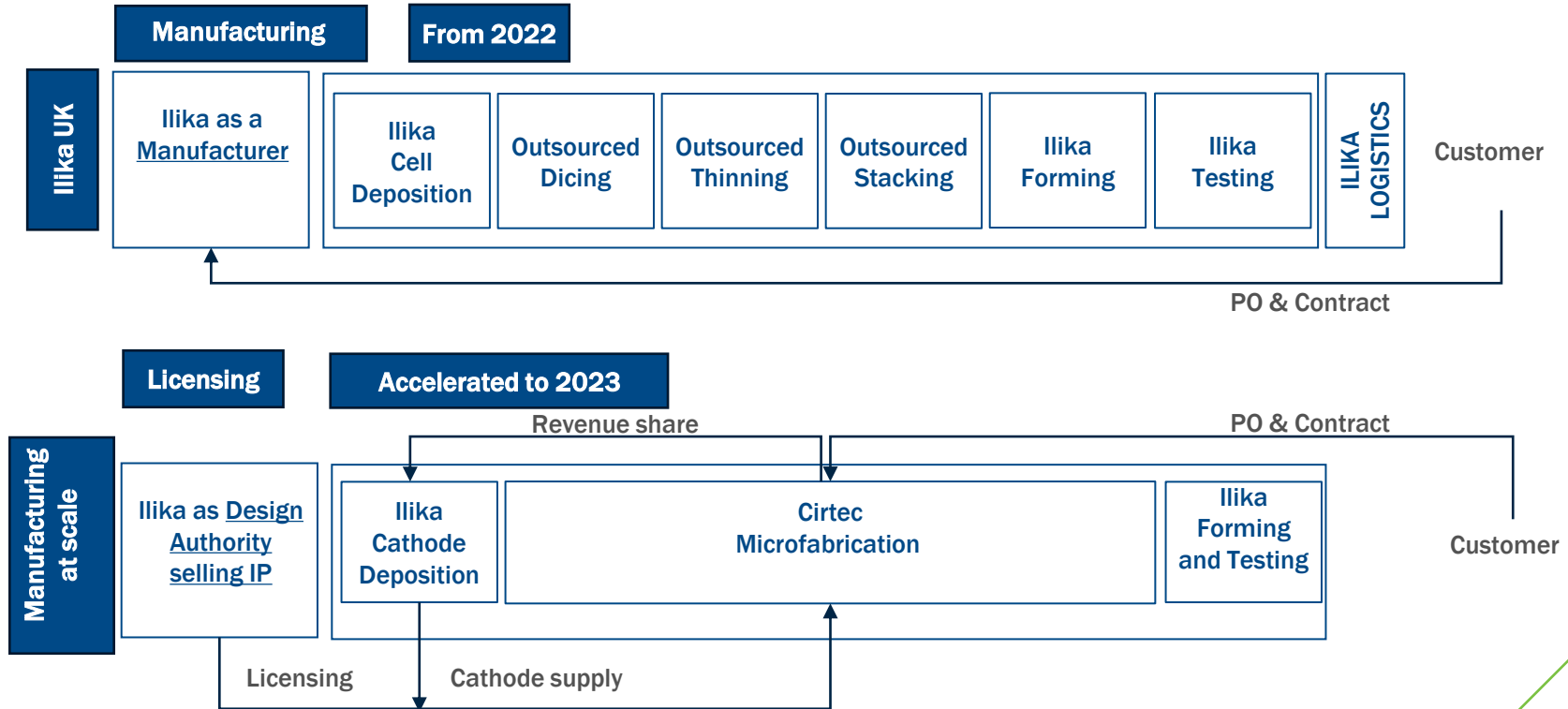
Initial product sales

Sales ramp



*Calendar year

Business Model



MOU signed with Cirtec Medical LLC



- ▲ **Cirtec Medical:** an industry-leading vertically integrated outsource partner for medical devices and components
- ▲ **Ilika:** technology development and IP licensing
- ▲ **Cirtec:** tech transfer to enable manufacturing and commercialization
- ▲ **Ilika benefits:**
 - ▲ Further validation of Stereax's capabilities
 - ▲ Manufacturing partnership with economy of scale and ability to ramp production
 - ▲ Expanded business development resources bringing additional commercial momentum
- ▲ **Next steps:** joint marketing, contract completion and tech transfer



- ▲ Launched programme for product qualification and process optimization for initial commercial release in Q2 CY23
- ▲ Secured 21 initial orders from 18 customers, mainly for medical devices in US
- ▲ Signed MOU with Cirtec Medical LLC to transfer manufacturing under license

Why Solid State for Automotive?

Ultra compact: occupies half the volume of Li-ion, enabling smaller designs

High temperature tolerance: reducing pack size and weight

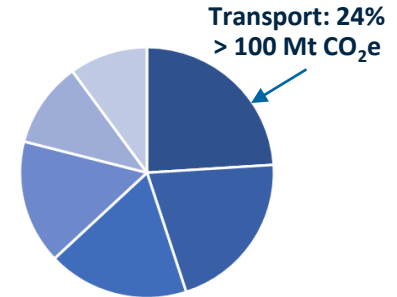
Safe: non-flammable

Environmental benefits: less energy to manufacture and easier to recycle



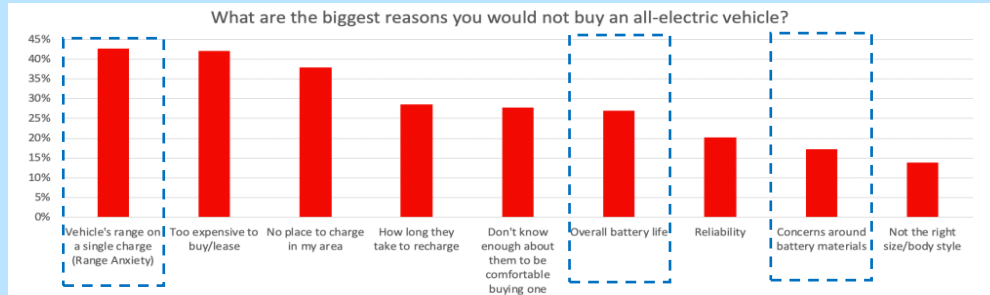


Transport is main contributor of greenhouse gas emissions in UK
(2022 BEIS report [ref](#))



■ Transport ■ Energy Supply ■ Business ■ Residential ■ Agriculture ■ Others

Electric Vehicles uptake growing but still low



[Ref](#)

Solid State Batteries can tackle:

- Range anxiety
- Battery life
- Safety concerns



100 Wh/kg achieved

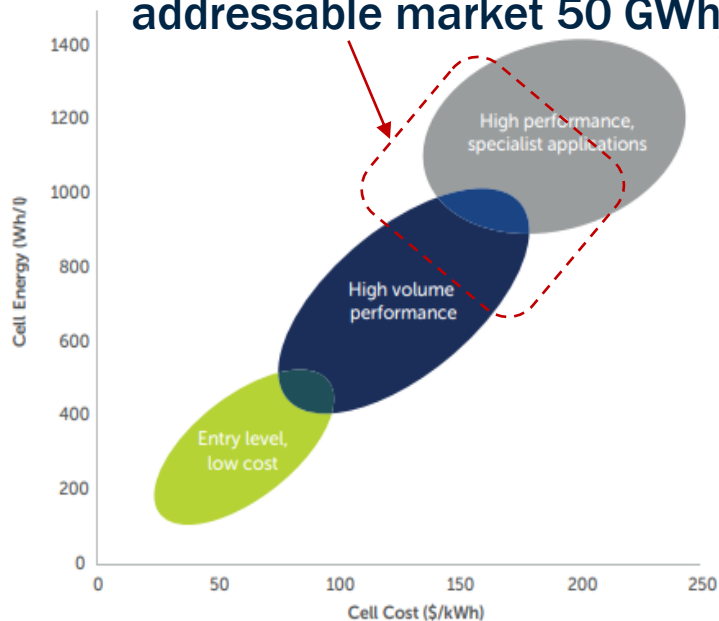
- We will be producing cells with targeted dimensions this year (30 cm x 10 cm)



- Trialing processes on production-intent equipment, including Roll-to-Roll

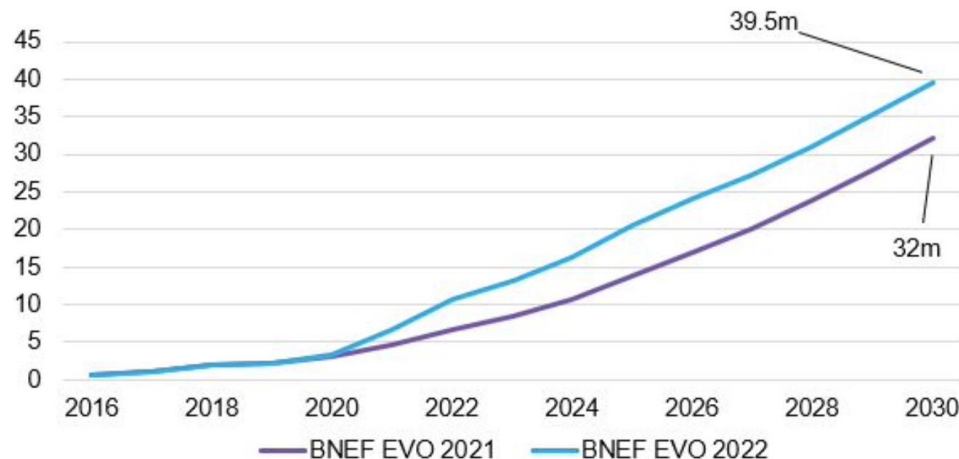


**Goliath Market Entry Point,
addressable market 50 GWh/a**

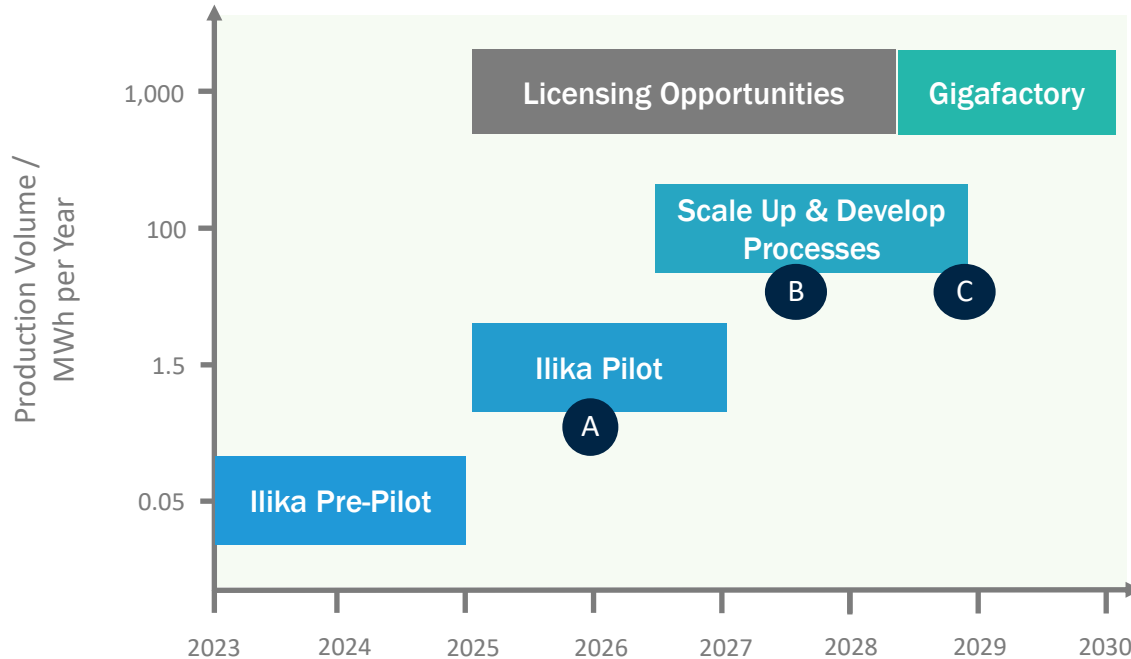


**2022 BNEF outlook projects EV sales in 2030
to be 20% higher than 2021 outlook**

Passenger EV sales, millions



Scale-up Plan & Business Model



A

A-samples allow us to enter RFQs

B

C

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

- ▲ Met with most of global automotive OEMs, across countries and sectors
- ▲ Early participation in RFQs to understand timelines and demand
- ▲ Commercial quotes to be issued by Ilika when we hit D4/P1 at the end of 2023
- ▲ Two OEMs have signed evaluation contracts in expectation of P1 (first product for customer release) being achieved
- ▲ Further partnerships and grant support being pursued.



- ▲ Increased energy density by 80% over 6 months
- ▲ Launched scale-up studies:
 - ▲ Equipment design study with COMAU
 - ▲ Economic feasibility study with UK-BIC
 - ▲ Manufacturing equipment trials
- ▲ Continued global interaction with automotive and consumer appliance OEMs

- ▲ **Turnover £0.2m (H1 2021/22: £0.2m)**
Resulted from grant funding in respect of three ongoing projects.
- ▲ **EBITDA loss £4.1m (H1 2021/22: £2.7m)**
Increased operational costs associated with the Stereax manufacturing facility and the Goliath development programme
- ▲ **Cash balance £18.6m (H1 2021/22: £27.7m)**
In line with expectations.

Deliver initial batch of Stereax® M300 samples H1 CY23

Progress Cirtec relationship through joint marketing, contract completion and technology transfer

Mature Goliath technology with partners through defined technical milestones

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

Questions





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