

RELOOP

Automated circular manufacture and
refurbishment of appliances

Bebello, SMART Call 10 draft





ORGANISATION PROFILE

Organisation: Bebello is a baby-feeding technology SME based in Edinburgh UK. Its mission is to take the pollution out of parenthood by offering best-in-category feeding products, accessed at lower-cost than buying new.

Products and traction: We have 3 products in market; the flagship Bebello Baby Bottle Washer, Steriliser & Dryer, and supporting Detergent and Descaler consumables. Over 2,000 Washer units have been sold in the UK & Ireland, with over 250 units in continuous rental. We also offer a buyback scheme, where we refurbish and sell units as pre-loved.

Personnel and R&D expertise: Founder Andrew Carr and CPO Thibault bring decades of experience in creating market disrupting products, across startups, scale-ups and multinationals such as SharkNinja and Elvie (a leading UK parenthood product scaleup). Lead Engineer David Kelly adds experience from Dyson, Morphy Richards, Hoover, Brompton and patent drafting & filing.

Technical capability: User-centred physical product design, electronics, connected-product architecture, programme management, user testing & product validation, IP strategy & protection.

Automated product manufacture and industrial scale automated refurbishment is to be undertaken by our partner, Loop Manufacturing who are based in Vendee, France.

We plan to bring in specialists skillsets in Industrial Design, Electronic Engineering and IoT Software development during the product development.

PROPOSAL INTRODUCTION (I)

Vision & motivation:

Approx. 6.85m baby feeding products are imported into the EU & UK every year from the far east. They're designed for short lifespans, none are likely to last longer than 3 years before disposal.

If we're going to **disrupt** this take-make-waste linear economy at scale - we need to do two things:

- 1) Design products that are **better** than our linear economy competitors, in order to win in market.
- 2) Manufacture and refurbish **on an industrial scale** in the EU. We need automated smart factories, because there is not enough labour available to do this work manually and affordably.

Why baby products? They're rental-perfect: Very high need products, but used for a relatively short space of time. It's our best chance of creating a mass-market consumer appliance that educates people that access over ownership, delivers better products, at lower cost.

Vision: We aim to deliver a suite of incredible baby feeding products that are the best-option for new parents and work perfectly in a rental environment. This means robust, reliable, cleanable connected-devices that allow predictive maintenance. This allows the devices to select when they need to be sent for automated refurbishment. The connected element provides security for lease-finance organisations to provide access to funding for rental providers to add Bebello products to their rental fleets.

Content:

- 1) We will take products from TRL3 to TRL8 during the product development of rental devices, including the development of IoT backend & integration with rental partner systems.
- 2) Development of automated manufacture & refurbishment system with Loop Manufacturing, including adaptable fixtures and automated test stations. Assisted and automated disassembly of products. Diagnostics and grading of returned units. Persistent component and asset histories linking usage data to maintenance, requalification and redeployment.

SMART alignment: Sustainable Manufacturing Towards a Circular Economy. Intelligent & Adaptive Manufacturing Systems. Design safe, sustainable and digital products. New Business Models.

PROPOSAL INTRODUCTION (II)

Expected outcome:

- + Delivery of user-validated Washer, Breast Pump & Formula Maker. (TRL 3 thru TRL8)
- + Installation of a demonstration re-manufacturing cell, with Bebello products delivered through a pilot manufacturing trial.
- + Traceable test results and lifecycle records will support decisions on repair and redeployment.
- + Fully compliant Product Passports & reusable packaging.

Validation:

- + Product BOMs enable linear-economy beating ROI, to make this a scalable investible proposal.
- + Automated manufacturing cost and refurbishment can be executed in-line with business plan needs.
- + User validated products, and technical validation of products against all standards requirements.
- + Accelerated life testing to highlight likely failure modes, and assess manufacturing cell ability to refurbish.

Impacts: Bebello will commercialise appliances through rental partners, initially in the UK, Germany, France, Netherlands, Sweden and Ireland (our 'EU6' markets). Loop will develop its Circul-Industrialization as a Service offer for other manufacturers. Expected benefits include lower lifetime costs, less material demand and skilled UK and French jobs.

Schedule: Proposed 24 months, October 2027 to September 2029, subject to national funding. Months 1–6: architecture and baselines. Months 7–15: cell and data integration. Months 16–24: return-loop trials and industrial validation.

PARTNERS

Current consortium basis: Bebello and Loop Manufacturing have developed the outline proposal.

Bebello, United Kingdom: Proposed coordinator. User and commercial requirements, product interfaces, lifecycle data requirements, rental trials and exploitation of product IP.

Loop Manufacturing, France: Proposed industrial partner. Reversible cell design, fixtures, assembly and disassembly processes, automated testing and refurbishment validation. Intended operator for first manufacture and subsequent refurbishment.

Supporting specialists: Proposed: RODD for industrial design, Illysky for electronics and Happy Porch for software/IoT.

Partner search: An industrial automation or robotics company with machine vision, adaptable handling, robot training & automated-test expertise. Product Passport support. Resuable packaging design.

CONTACT INFO

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