EIC ACCELERATOR

Step 2 - Full Application (Business Plan)

Solid-State Flow Battery for Long-Duration Grid Storage

(SOLIDFLOW)

Applicant company: SolidFlow Energy (Germany)

Field	Value
Call identifier	HORIZON-EIC-2026-ACCELERATOR-01
Type of action	EIC Accelerator Step 2
Duration (months)	24
Grant requested (EUR)	2,500,000
Equity/investment requested (EUR)	12,000,000

1. Company

1.1 Description

SolidFlow Energy is a German deep-tech scale-up SME headquartered in Germany, developing and commercialising a next-generation solid-state redox-flow battery system purpose-built for long-duration energy storage (LDES) applications of 8 to 24 hours. Founded by an interdisciplinary team of electrochemists, materials scientists, and energy-sector engineers, the company combines proprietary solid electrolyte membrane technology with a modular, containerised battery architecture designed for utility-scale deployment. SolidFlow Energy has progressed its core technology through successive TRL stages, validated key performance parameters at prototype scale, and secured letters of intent from European utility partners confirming commercial interest. The company operates under a structured IP portfolio and has attracted early-stage investment to reach its current TRL 6 position. Its organisational structure includes a core R&D and engineering team, a business development function targeting European utilities and renewable independent power producers (IPPs), and an advisory board comprising senior figures from the European energy storage and grid infrastructure sectors.

1.2 Maturity and track record

SolidFlow Energy has achieved TRL 6, having demonstrated a full-scale prototype of its solid-state flow battery stack and balance-of-plant in a relevant grid-adjacent environment. Key milestones to date include: synthesis and scale-up of the proprietary solid electrolyte membrane at batch scale; assembly and testing of a 100 kWh demonstration unit delivering greater than 70 cycles with stable performance; electrochemical characterisation confirming energy density of approximately 60 Wh/L, representing approximately double the volumetric energy density of commercial vanadium redox-flow batteries (VRFBs); and completion of preliminary safety testing confirming non-flammability under abuse conditions. The company has secured letters of intent from two European utility operators and one renewable IPP, collectively representing a potential first-commercial-order pipeline of EUR 18 million. Prior funding includes national R&D grants and a seed equity round, providing the financial foundation to sustain operations through the current project period.

1.3 Why now

The convergence of three structural forces makes the SOLIDFLOW project critically timely. First, the EU's REPowerEU plan and the Net Zero Industry Act have created regulatory and procurement momentum for LDES at an unprecedented scale, with grid operators now tendering for storage capacity with 8-to-24-hour discharge duration that neither lithium-ion nor legacy flow batteries can serve competitively at cost. Second, the European long-duration storage market is approaching an inflection point: the first large-scale LDES procurement tenders from major TSOs and DSOs in Germany, France, and the Iberian Peninsula are expected between 2026 and 2028, and the company's utility partners have indicated their intent to commit to supply agreements contingent on TRL 7-8 field demonstration. Third, competing deep-tech players are 12 to 18 months behind SolidFlow Energy in membrane technology maturity, creating a finite window to establish a defensible first-mover position in the EU market before Asian manufacturers with commodity vanadium systems consolidate market share.

2. Innovation

2.1 The innovation

The SOLIDFLOW system is a non-flammable, solid-state redox-flow battery designed to deliver 8 to 24 hours of energy storage at utility scale. Unlike conventional vanadium flow batteries that rely on highly corrosive and flammable liquid electrolytes, or lithium-ion systems limited to 2 to 4 hours of economic discharge, the SOLIDFLOW architecture replaces the liquid electrolyte membrane with a proprietary solid ceramic-polymer composite membrane. This membrane enables higher ionic conductivity, eliminates electrolyte leakage risk, and supports a wider electrochemical stability window, enabling use of higher-energy-density active materials. The result is a modular, containerised battery system with approximately double the gravimetric and volumetric energy density of vanadium flow batteries, a projected levelised cost of storage (LCOS) of below EUR 0.08/kWh at gigawatt-hour scale, non-flammability by design, and a 20-year operational life with minimal degradation. The system is designed for direct integration with renewable generation assets and grid substations, with a scalable architecture from 1 MWh to 100 MWh per installation.

2.2 Technology and TRL

The core enabling technology is SolidFlow Energy's proprietary solid electrolyte membrane, a ceramic-polymer composite manufactured via a scalable solvent-casting and sintering process. The membrane exhibits ionic conductivity of greater than 10 mS/cm at ambient temperature, electrochemical stability up to 2.5 V per cell, and mechanical flexibility sufficient for roll-to-roll manufacturing. The balance-of-plant integrates standard power electronics and a modular stack design with a cell footprint of 0.25 m2, enabling factory assembly and containerised field deployment. The current TRL is 6: a 100 kWh prototype has been assembled and tested in a relevant environment (grid-adjacent site in Germany), demonstrating round-trip efficiency of 78%, stable capacity over 70 charge-discharge cycles, and non-flammability under IEC 62619 abuse test protocols. The 24-month project will advance the system from TRL 6 to TRL 8, including commissioning of a pilot manufacturing line capable of producing 10 MWh of stack capacity per month, deployment of two field demonstration units (1 MWh each) at utility partner sites, and completion of IEC and UL certification. Target TRL at project end is 8, with commercial launch planned for month 30 post-project start.

2.3 IPR and freedom to operate

SolidFlow Energy holds a portfolio of four granted European patents and two pending PCT applications covering: (1) the ceramic-polymer composite membrane composition and manufacturing process; (2) the electrochemical cell stack architecture; (3) the thermal management subsystem; and (4) the modular containerised balance-of-plant design. A freedom-to-operate (FTO) analysis conducted by an independent IP firm in Q4 2025 confirmed no blocking third-party patents in the EU, US, or Japan for the specific membrane composition and stack architecture used in the SOLIDFLOW system. The company has implemented an IP governance policy with invention disclosure procedures and employee IP assignment agreements. Trade secrets covering the precise sintering process parameters and membrane precursor formulation provide an additional layer of protection beyond the patent portfolio. The company's IP strategy targets continued patent prosecution in key markets (EU, US, Japan, South Korea, Australia) and active monitoring of competitor patent filings.

2.4 Novelty vs state of the art

The state of the art in LDES comprises four main competing technology families: (1) vanadium redox-flow batteries (VRFBs), which use liquid vanadium electrolyte, are non-flammable but suffer from low energy density (25-35 Wh/L), high vanadium cost, and electrolyte cross-contamination over time; (2) lithium-ion batteries, which achieve high energy density but are limited to 2-4 hours economic discharge, carry thermal runaway risk, and degrade rapidly under deep daily cycling; (3) iron-air batteries, at TRL 5-6, with very low cost projections but slow charge rates and high self-discharge; and (4) compressed air and pumped hydro, which are geography-constrained. The SOLIDFLOW system differentiates from all four categories across the criteria most critical to utility customers: energy density (approximately 60 Wh/L versus 25-35 Wh/L for VRFBs), safety (non-flammable solid electrolyte versus liquid electrolyte VRFB or flammable lithium-ion), duration flexibility (fully programmable 8-24 hours versus fixed 2-4 hours for lithium-ion), scalability (modular containerised versus geography-constrained pumped hydro), and supply-chain independence (no vanadium or lithium dependency). No commercially available product combines all five of these advantages. The closest academic comparator is solid-state lithium-sulfur, which remains at TRL 3-4 and does not address the flow-battery architecture.

3. Market

3.1 Market need and size

The fundamental market need is the ability to store intermittent renewable energy for durations of 8 to 24 hours to provide firm, dispatchable power to grid operators and offtakers. As wind and solar penetration in the EU electricity mix exceeds 40% and approaches 70-80% in leading markets such as Germany and Spain, the grid requires storage assets that can absorb daytime generation surpluses and release energy during evening and overnight demand peaks. Lithium-ion batteries address 2-4 hour needs but cannot economically serve the 8-24 hour segment at the scale required. The Total Addressable Market (TAM) for LDES globally is estimated by BloombergNEF and Wood Mackenzie at USD 150-300 billion in cumulative investment by 2040. The EU TAM for LDES is estimated at EUR 30-50 billion in cumulative installed capacity investment by 2035, driven by the EU storage mandate under the revised Electricity Market Design Regulation and national grid investment programmes. The Serviceable Available Market (SAM) for SolidFlow Energy, defined as grid-connected LDES projects in the EU and UK where containerised flow-type systems are technically preferred (substations, industrial microgrids, renewable co-location), is estimated at EUR 8-12 billion by 2030. The Serviceable Obtainable Market (SOM) for the first five years of commercial operation (2027-2032), targeting three to five

EU markets (Germany, France, Spain, the Netherlands, Poland) and anchored by signed letters of intent, is estimated at EUR 150-400 million in cumulative revenues, representing a 2-4% share of SAM. This SOM is grounded in the company's existing pipeline of letters of intent, utility procurement timelines, and comparable adoption curves from first-mover LDES companies in the US and Australia. The EU LDES market is growing at a CAGR of approximately 35-40% through 2030, underpinned by the REPowerEU investment programme and national capacity market reforms.

3.2 Target customers

Primary customer segments are: (1) European transmission and distribution system operators (TSOs/DSOs) seeking grid-balancing and congestion-relief storage assets, with procurement values of EUR 10-50 million per project; (2) renewable energy IPPs co-locating storage with wind and solar farms to enable merchant or contracted firm power sales, with project values of EUR 5-20 million; and (3) energy-intensive industrial sites and microgrids requiring self-sufficiency and peak-shaving, with project values of EUR 2-10 million. Letters of intent have been signed with two European utility operators and one renewable IPP, confirming intent to proceed to commercial pilot agreements upon completion of TRL 7-8 field demonstration and CE/IEC certification. Customer willingness to pay is anchored to the LCOS savings versus alternative storage and peaker-plant procurement: at a target LCOS below EUR 0.08/kWh, the SOLIDFLOW system offers a compelling economic case versus open-cycle gas turbine peakers (LCOS EUR 0.12-0.18/kWh) and lithium-ion BESS (LCOS EUR 0.10-0.14/kWh for 4-hour systems, higher for longer durations). The sales cycle for utility-scale storage is typically 18-36 months from first engagement to financial close, which the company's existing LOI pipeline substantially compresses.

3.3 Competition

The competitive landscape for EU LDES comprises: (1) established VRFB manufacturers (Invinity Energy Systems, CellCube, Rongke Power) offering proven but low-energy-density liquid systems at EUR 400-600/kWh installed cost; (2) lithium-ion BESS integrators (BYD, CATL, Fluence) dominant in the 2-4 hour segment but not cost-competitive at 8+ hours; (3) early-stage iron-air developers (Form Energy, at TRL 5-6) with low-cost projections but not yet commercially available in Europe; and (4) pumped hydro and CAES, geography-constrained and requiring multi-year permitting. Against this landscape, SOLIDFLOW holds three structural competitive advantages: superior energy density enabling smaller site footprint and lower civil works cost; non-flammable solid electrolyte enabling permitting in urban and peri-urban sites where liquid electrolyte and lithium-ion face regulatory barriers; and a European manufacturing base providing supply-chain resilience and eligibility for EU public procurement preferences under the Net Zero Industry Act. No existing commercially available LDES product combines all three advantages.

3.4 Competitive advantage

SolidFlow Energy's sustainable competitive advantage rests on four reinforcing pillars. First, proprietary technology: the solid electrolyte membrane is protected by four granted European patents and two pending PCT applications, with a confirmed FTO position; manufacturing know-how is embedded in the team and protected as trade secrets, creating barriers to replication even by well-funded competitors. Second, first-mover advantage in the EU certified LDES market: by achieving IEC/CE certification 12-18 months ahead of nearest comparable competitors, SolidFlow Energy will set the benchmark for utility procurement specifications, making its system the reference product for EU LDES tenders. Third, customer lock-in through long-term service contracts: the service and software revenue model creates switching costs and recurring revenue streams that entrench the customer relationship beyond the initial hardware sale. Fourth, EU supply-chain positioning: the system is designed to use no vanadium, no lithium, and no cobalt, eliminating dependency on critical raw materials under geopolitical risk, a differentiator that is increasingly decisive in EU procurement decisions.

4. Commercial strategy

4.1 Business model

SolidFlow Energy operates a capital-equipment-plus-services business model with three revenue streams. Stream 1 (primary): system sales, comprising the sale of complete SOLIDFLOW battery systems (containerised units of 1-10 MWh) to utility, IPP, and industrial customers at a target price of EUR 350-450/kWh installed, declining to EUR 250-300/kWh at volume. Gross margin target on system sales is 35-45% at scale, driven by manufacturing cost reduction through pilot-line optimisation and supply-chain consolidation. Stream 2: long-

term service and maintenance agreements (10-20 year contracts) covering preventive maintenance, performance monitoring via a proprietary SCADA/BMS software platform, and electrolyte replenishment, generating recurring annual revenue equivalent to 3-5% of installed system value per year. Stream 3 (medium-term): licensing of the solid electrolyte membrane technology to non-competing geographic markets (Asia-Pacific, North America) once the EU market position is secured, providing high-margin royalty income. Unit economics at target scale: a 10 MWh system sold at EUR 400/kWh generates EUR 4 million in system revenue with a gross profit of approximately EUR 1.6 million, plus EUR 120-200k per year in recurring service revenue over a 15-year contract. Financial projections (summary): Year 1 post-commercial-launch (2028): EUR 8M revenue; Year 3 (2030): EUR 45M revenue; Year 5 (2032): EUR 120M revenue; EBITDA positive from Year 3. These projections are consistent with the LOI pipeline and publicly available LDES procurement timelines.

4.2 Go-to-market strategy

The go-to-market strategy is structured in three phases. Phase 1 (Months 1-24, project duration): complete two paid field demonstration projects with LOI utility partners, achieve IEC 62619 and CE certification, and establish the SOLIDFLOW system as the reference LDES product for EU utility procurement. Marketing activities in this phase are targeted and relationship-driven: direct engagement with procurement teams at the five largest European TSOs and DSOs, participation in key industry forums (WindEurope, Solar Power Europe, Energy Storage Summit EU), and publication of field-demonstration performance data in open-access technical reports. Phase 2 (Months 25-36, early commercial): execute first commercial contracts from the LOI pipeline, commission the pilot manufacturing line to production readiness, and establish a network of certified installation and maintenance partners in Germany, France, Spain, and the Netherlands. Pricing in this phase is premium-positioned to reflect first-mover certification advantage, with a target of 3-5 system sales generating EUR 15-30M in revenue. Phase 3 (Months 37-60, scale-up): expand into Poland, the Nordics, and the UK; launch the service contract renewal cycle for Phase 1 demonstration systems; initiate licensing discussions with Asia-Pacific partners. Key strategic partners include a Tier-1 German engineering and construction firm (EPC partner for system installation), a European power electronics manufacturer (balance-of-plant supply agreement under negotiation), and the utility LOI partners serving as launch customers and reference sites.

4.3 Scale-up plan

The manufacturing scale-up plan is the central use case for EIC funding and investment. During the 24-month project, the EUR 2.5M grant and EUR 12M equity investment will co-fund the commissioning of a pilot manufacturing line at a leased facility in Germany, targeting a monthly output of 10 MWh of assembled stack capacity by Month 18 and 20 MWh/month by Month 24. The pilot line serves two purposes: first, to validate the manufacturability of the solid electrolyte membrane and stack assembly at pre-industrial scale, driving down unit cost through process optimisation; second, to supply the two field demonstration units and the first commercial orders. Post-project (Year 3-4), the company plans to raise a Series B equity round of EUR 30-50M to fund a full gigafactory line targeting 500 MWh/year capacity, leveraging the EIC Fund equity as a cornerstone investment catalysing co-investment from strategic industrial partners and infrastructure funds. Scale-up is projected to reduce the manufacturing cost of the solid electrolyte membrane from the current EUR 120/m2 to below EUR 40/m2 by Year 5, driving LCOS to below EUR 0.08/kWh and unlocking the mass-market utility segment. Geographic expansion follows a hub-and-spoke model: the German manufacturing hub serves all EU markets in the first five years, with potential for a second manufacturing site in Southern Europe (Spain or Portugal) from Year 5 onward to serve the Iberian and North African markets.

5. Impact

5.1 Company impact

The SOLIDFLOW project will transform SolidFlow Energy from a TRL 6 deep-tech startup into a commercially operating scale-up with validated manufacturing capability, certified products, and a revenue-generating customer base. Over the five-year horizon, the company projects the creation of 80-120 highly skilled direct jobs in Germany, spanning electrochemical engineering, manufacturing operations, field services, and commercial functions. By Year 5 the company projects annual revenues of EUR 120M, EBITDA profitability, and a balance-sheet position enabling an IPO or strategic acquisition that generates significant returns for EIC Fund investors. The company will establish Germany as the global centre of excellence for solid-state flow battery manufacturing, strengthening the European deep-tech ecosystem. The SOLIDFLOW technology will enable SolidFlow Energy to become the reference European LDES supplier, displacing Asian imports and setting EU technical and safety standards for the LDES category.

5.2 Broader EU impact

The SOLIDFLOW project directly addresses three of the EU's most urgent strategic priorities. First, energy security and strategic autonomy: by commercialising a LDES technology that uses no vanadium (predominantly sourced from China and Russia), no lithium (predominantly from Australia, Chile, and China), and no cobalt, SOLIDFLOW eliminates critical raw material dependencies for a key grid infrastructure asset, directly supporting the EU Critical Raw Materials Act objectives and the Net Zero Industry Act storage targets. Second, decarbonisation: each 10 MWh SOLIDFLOW installation deployed in the EU is estimated to enable the integration of an additional 15-25 MW of intermittent renewable capacity that would otherwise be curtailed, resulting in an estimated lifecycle CO2 abatement of 8,000-15,000 tonnes per installation over 20 years. If 500 MWh of SOLIDFLOW capacity is deployed by 2030 (conservative SOM scenario), the cumulative CO2 abatement is approximately 400,000-750,000 tonnes. Third, European technological leadership: the project positions the EU as a first mover in solid-state flow battery technology, ahead of US and Chinese competitors, contributing to the EU's industrial competitiveness agenda and creating a new export-capable deep-tech industry. The project aligns with the EIC Challenge on Advanced Materials for Renewable Energy and Energy Storage Systems and the broader Horizon Europe Climate and Energy mission.

5.3 Impact indicators

Indicator	Target	Measurement
Direct jobs created at SolidFlow Energy	80 direct jobs by Year 5 post-commercial-launch	Annual headcount reported in EIC progress reports and company statutory filings
Annual revenue	EUR 120M by Year 5 (2032)	Audited annual financial statements submitted to EIC
SOLIDFLOW system capacity deployed in EU	500 MWh cumulative by end of 2030	Signed and commissioned project contracts, independently verified
CO2 emissions abated through SOLIDFLOW-enabled renewable integration	400,000 tonnes CO2-equivalent cumulative by 2032	Lifecycle assessment per ISO 14040/44, calculated per installed MWh and reported annually
Reduction in critical raw material dependency	Zero vanadium, lithium, or cobalt content in SOLIDFLOW systems; 100% EU-sourced active materials by Year 3	Supply-chain audit and material declaration per IEC 62619 and EU Battery Regulation reporting requirements
IP portfolio growth	8 granted patents (EU and international) by end of project	Patent register, annual IP audit report

6. Implementation

6.1 Work packages

WP	Title	Objective	Key activities	Duration
1	Pilot Manufacturing Line Commissioning	Design, procure, and commission a pre-industrial pilot manufacturing line for the solid electrolyte membrane and battery stack assembly at the SolidFlow Energy facility in Germany, achieving 10 MWh/month stack output capacity by Month 18.	Detailed engineering design of membrane casting and sintering line; procurement and installation of solvent-casting equipment, sintering furnaces, and stack assembly tooling; process qualification runs and yield optimisation; establishment of quality management system to ISO 9001 and IEC 62619 manufacturing requirements; training of production	Months 1-20

			technicians.	
2	Field Demonstration Unit Deployment	Manufacture, ship, install, and commission two 1 MWh SOLIDFLOW field demonstration units at utility partner sites, accumulating a minimum of 200 full charge-discharge cycles per unit and generating independently verified performance data.	Manufacturing of two 1 MWh demonstration systems using pilot-line output; logistics and on-site civil works coordination with utility partners; grid connection and commissioning; 12-month monitored operation with SCADA data logging; performance report publication; incorporation of field learnings into product design for commercial units.	Months 6-24
3	Certification and Regulatory Approvals	Obtain IEC 62619 safety certification, CE marking, and relevant national grid-connection approvals for the SOLIDFLOW system, enabling commercial sale and deployment across EU member states.	Engagement of notified body for IEC 62619 testing; preparation and submission of technical documentation for CE marking under the Machinery Regulation and Low Voltage Directive; grid-connection pre-qualification submissions to German and French TSOs; compliance review against EU Battery Regulation (2023/1542); preparation of environmental and safety documentation.	Months 4-22
4	Technology Optimisation and Scale-Up Engineering	Advance the core solid electrolyte membrane and stack design from pilot-line specification to commercial-scale specification, achieving target energy density, cycle life, and manufacturing yield consistent with commercial LCOS below EUR 0.08/kWh.	Iterative membrane formulation optimisation targeting ionic conductivity above 12 mS/cm and mechanical yield above 95% in roll-to-roll production; stack cell design refinement for 0.5 m2 commercial cell format; thermal management subsystem engineering for 10 MWh containerised unit; accelerated lifetime testing	Months 1-24

			(1,000 cycle protocol); IP documentation and patent prosecution for improvements.	
5	Commercial Preparation and Market Development	Convert the LOI pipeline into binding commercial contracts, establish the go-to-market infrastructure (sales, service partners, SCADA platform), and prepare the company for Series B fundraising.	Negotiation and execution of commercial pilot agreements with LOI utility partners; recruitment of commercial director and field service engineers; development of SCADA/BMS software platform for remote monitoring; preparation of commercial product documentation, pricing model, and service contract templates; investor roadshow preparation leveraging field demonstration performance data; EIC reporting and milestone verification.	Months 12-24

6.2 Milestones

ID	Title	Due month
M1	Pilot manufacturing line operational and first membrane batch produced at target yield	10
M2	First field demonstration unit (1 MWh) commissioned and grid-connected at utility partner site	14
M3	IEC 62619 safety certification awarded for SOLIDFLOW system	20
M4	200 full charge-discharge cycles completed on both field demonstration units with independently verified round-trip efficiency above 76%	24
M5	First binding commercial contract signed with utility customer; Series B fundraising process formally launched	24

6.3 Key risks

Risk	Mitigation
Manufacturing yield risk: solid electrolyte membrane casting and sintering at pilot-line scale may not achieve the greater-than-95% yield required for target unit economics, delaying cost reduction and commercial scale-up.	Early engagement of a specialist ceramic processing equipment supplier as a technical partner; dedicated WP4 yield optimisation programme with monthly yield KPI review; parallel development of a secondary membrane formulation as a fallback; budget contingency of EUR 150k allocated to additional process trials.
Certification timeline risk: IEC 62619 testing and CE	Notified body engaged and pre-assessment completed

marking may take longer than planned due to notified body capacity constraints or identification of additional test requirements, delaying commercial sales.	prior to project start; certification scope and test protocol agreed at Month 1; parallel submission tracks for IEC and CE pursued simultaneously; WP3 timeline includes a 3-month buffer before first planned commercial delivery.
Financing risk: failure to close the EUR 12M equity round on schedule would constrain pilot-line commissioning and field demonstration activities, jeopardising project milestones.	EIC Fund equity as anchor investor provides credibility for co-investor syndication; existing investor and strategic partner pipeline already engaged; grant tranche from EIC provides non-dilutive runway reducing equity dependency in the first 12 months; Series B fundraising initiated at Month 18 based on field demonstration performance data.
Field demonstration performance risk: the 1 MWh field units may underperform round-trip efficiency or cycle-life targets due to integration challenges at utility sites, undermining the commercial case with LOI partners.	Demonstration sites selected based on grid conditions consistent with product design parameters; grid integration engineering completed in WP2 prior to commissioning; remote SCADA monitoring enables rapid fault detection and intervention; performance guarantee thresholds negotiated at conservative levels in LOI agreements.
Competitive risk: well-funded US or Asian LDES competitors may accelerate their EU market entry and certification timelines, eroding SolidFlow Energy's first-mover advantage.	Accelerated certification and commercial pilot timelines in WP2 and WP3 are designed to establish EU market references 12-18 months ahead of nearest competitors; strong patent portfolio and FTO position limits freedom to operate for competitors using similar membrane architectures; EU supply-chain and NZIA compliance positioning provides procurement preference advantages not available to non-EU manufacturers.

7. Finance and funding request

7.1 Use of funds

The total project budget of EUR 14.5M (EUR 2.5M EIC grant plus EUR 12M EIC equity investment) is allocated across four principal categories. Personnel (EUR 3.8M, 26%): recruitment and retention of 18 FTEs over 24 months covering manufacturing engineering, electrochemistry R&D, field service, commercial development, and project management. Equipment and infrastructure (EUR 6.2M, 43%): procurement and installation of membrane casting line, sintering furnaces, stack assembly tooling, and containerised balance-of-plant for two 1 MWh demonstration units. Certification and testing (EUR 0.8M, 6%): notified body fees, independent performance testing, CE marking, and grid-connection approvals. Commercial and business development (EUR 1.2M, 8%): SCADA/BMS software development, marketing and sales infrastructure, investor roadshow preparation, and legal fees for commercial contract negotiation. Subcontracting and field operations (EUR 1.5M, 10%): EPC subcontractor costs for on-site installation and commissioning of demonstration units at utility partner sites. Overheads and contingency (EUR 1.0M, 7%): facility lease, utilities, IT, and a contingency reserve of EUR 300k (approximately 2% of total budget). The EIC grant (EUR 2.5M) covers eligible innovation activities including personnel directly engaged in R&D, equipment directly used for prototype and demonstration, and certification costs, consistent with lump-sum grant rules. The EIC equity investment (EUR 12M) funds the scale-up capital expenditure and commercial preparation activities that constitute the investment case.

7.2 Financial projections (summary)

Revenue projections are grounded in the signed LOI pipeline and publicly available utility procurement timelines. Year 1 post-commercial-launch (2027): EUR 8M revenue from first two commercial system sales (2x4 MWh at EUR 400/kWh) plus service contract initiation; gross margin 32%. Year 2 (2028): EUR 22M revenue from 5-7 system sales plus growing service base; gross margin 38%. Year 3 (2029): EUR 45M revenue; EBITDA breakeven; gross margin 42%. Year 4 (2030): EUR 80M revenue; EBITDA margin 12%; gross margin 44%. Year 5 (2031): EUR 120M revenue; EBITDA margin 18%; gross margin 46%. Key financial assumptions: average system selling price EUR 380/kWh declining to EUR 310/kWh by Year 5 through manufacturing cost reduction; service contract attach rate 80% of system sales from Year 2 onward; membrane manufacturing cost declining from EUR 120/m2 (current) to EUR 38/m2 by Year 5 through pilot-line learning curve and volume purchasing. The company will reach cash flow positivity in Year 3, funded by the EUR 12M EIC equity and a planned Series B of EUR 30-50M in Year 3-4. Sensitivity analysis indicates that a 20% reduction in average selling price or a 6-month delay in first commercial revenue reduces Year 3 EBITDA from breakeven to a loss of approximately EUR 3M,

recoverable by Year 4 under the base-case manufacturing cost trajectory.

7.3 Funding request rationale

The SOLIDFLOW project requires blended public-private finance because the capital intensity of pilot-line commissioning and utility-scale field demonstration, combined with the 18-36 month sales cycle inherent to utility procurement, creates a financing gap that private investors alone cannot bridge at this stage of technology maturity. The EUR 12M equity investment required exceeds the risk appetite of conventional Series A venture investors for a hardware deep-tech company at TRL 6, where manufacturing yield and certification outcomes remain uncertain. The EIC Fund equity, combined with the EUR 2.5M innovation grant, provides the patient capital required to advance from TRL 6 to TRL 8 and achieve the first commercial revenue that will anchor a Series B syndication. The leverage effect of EIC support is significant: the company's financial model projects that EUR 14.5M in EIC blended finance will catalyse EUR 30-50M in private Series B co-investment within 24 months of project completion, based on the investment committee indications received from two European infrastructure funds contingent on field demonstration completion and certification. Without EIC support, the company would face a binary choice between foregoing the pilot-line investment (delaying commercialisation by 3-4 years and ceding first-mover advantage to non-EU competitors) or accepting highly dilutive venture terms that would undermine founder and team retention.

7.4 Investment readiness

SolidFlow Energy has demonstrated early investor traction through a completed seed round and national R&D grant support totalling EUR 3.2M, validating the technology concept and team capability. The company maintains a clean cap table with no blocking minority provisions, standard vesting arrangements for founding team equity, and an ESOP pool of 12% (fully diluted) reserved for key employee recruitment during the scale-up phase. The board includes two independent non-executive directors with backgrounds in European energy infrastructure investment and battery manufacturing operations. An EIC Fund equity stake of up to 25% (non-voting shares) is compatible with the company's governance structure and is welcomed by the founding team as a strategic value-add investor providing access to the EIC Business Acceleration Services network, EU policy engagement, and co-investor introductions. The company's exit strategy envisions a strategic acquisition by a European energy major or grid operator (most likely acquirers identified: Siemens Energy, Engie, Iberdrola, Enel) in Year 6-8 at a projected revenue multiple of 4-6x, or alternatively an IPO on a European growth exchange in Year 7-9, consistent with comparable deep-tech energy storage company valuations observed in the 2022-2025 period.