SOLARIMPULSE FOUNDATION

SUBMISSION BY THE SOLAR IMPULSE FOUNDATION TO THE BELÉM MISSION TO 1.5°C

The Solar Impulse Foundation - an accredited UNFCCC observer organisation and contributing partner of Mission Efficiency, submitted under the Plans to Accelerate Solutions of the COP Action Agenda - welcomes the opportunity to contribute to the Belém Mission to 1.5. Our contribution draws on a decade of independently validating clean and profitable solutions across energy, industry, buildings, transport, waste, and water - assessing each against environmental impact, technical feasibility, and economic profitability. Our portfolio covers the full breadth of what NDC implementation requires: renewable energy, energy efficiency, electrification, clean mobility, and industrial decarbonisation.

On Question 1(a) - Priority solutions and innovations with the highest impact potential

Given that only a limited number of solutions can realistically be scaled through mechanisms such as the Global Implementation Accelerator, prioritisation should follow clear criteria: speed of deployment, applicability across the widest possible range of NDCs and NAPs, cash-positive economics that do not depend on public subsidy, and potential for cascading effects across sectors. Resource efficiency - and energy efficiency specifically - meets each of these criteria more consistently than any other lever available today.

Policies

The single highest-impact policy shift available is reframing energy efficiency in NDCs and national energy strategies as an instrument of energy security and industrial competitiveness, not solely a climate obligation. This requires no new technology and no new financial commitment - only a change in framing - yet it broadens political ownership beyond climate ministries and unlocks financing from actors who do not currently see efficiency as within their mandate.

Technologies

Rather than focusing on individual technologies, priority should be given to commercially mature solutions that optimise existing assets and deliver rapid, cost-effective emissions reductions.

These include:

- digital energy management and optimisation systems, including AI-enabled solutions;
- industrial waste heat recovery and thermal energy storage;
- advanced building energy management and control systems;
- high-efficiency motors, drives and pumping systems;
- industrial process optimisation technologies.

These technologies share common characteristics: they are commercially proven, rapidly deployable, require limited additional infrastructure, and typically generate positive financial returns through reduced energy consumption.

Investments

Two financing innovations have demonstrated particular capacity to accelerate deployment.

- Performance-based financing, including Energy-as-a-Service and other servitisation models, removes the upfront investment barrier by linking repayment to verified operational savings rather than asset ownership.
- Public guarantee schemes mobilise private capital by reducing portfolio risk for financial institutions, lowering financing costs and expanding access to long-term investment for households, SMEs and municipalities.

Both are proven, replicable, and applicable in any market, including where public budgets are most constrained.

On Question 1(b) - Finance, technology, capacity-building, and institutional opportunities

SMEs sit at the heart of the deployment challenge - and the deployment opportunity. They represent over 90% of businesses globally, operate across every sector, and account for a significant share of industrial and commercial energy consumption. Many of the most innovative clean energy solutions in our portfolio originate from SMEs. Yet SMEs remain structurally excluded from climate finance - both as solution providers seeking growth capital and as adopters facing upfront investment barriers.

Two complementary mechanisms offer immediate opportunities for scale:

Performance-based financing - commonly referred to as servitisation or Energy-as-a-Service - removes the upfront capital barrier by tying payment to verified energy savings rather than requiring asset purchase. The client pays from operational savings generated by the solution, with no capital expenditure required. A documented example: a leading aerospace manufacturer in the UK signed a ten-year performance-based lighting agreement covering 14 buildings and 3,300 employees, with zero upfront investment and cash-positive savings from year one.

Public guarantee schemes address the risk perception barrier that prevents institutional capital from flowing to energy efficiency at scale. Under these schemes, a public institution covers a predefined share of potential losses on a portfolio of energy efficiency loans, lowering the cost of capital for financial intermediaries and enabling them to extend affordable long-term financing to households, SMEs, and municipalities. The EIB-European Commission Private Finance for Energy Efficiency instrument - now scaled under InvestEU - applies this principle by covering up to 80% of losses on defaulted loans. The European Energy Efficiency Fund has used the same model to finance more than 20 projects across Europe - including a city-wide lighting retrofit covering over 42,000 streetlight points and 30 municipal buildings, financed through a €19.5 million facility repaid entirely from verified savings with no upfront capital required from the municipality.

The Solar Impulse Foundation has committed to these principles directly: as a partner of the EIB Group Energy Efficiency for SMEs Initiative - registered under Mission Efficiency in the Plans to Accelerate Solutions of the COP Action Agenda - we are actively supporting the deployment of both mechanisms to channel €17.5 billion to 350,000 SMEs across Europe by 2027.

On Question 1(c) - Most significant barriers

The Foundation's experience indicates that four structural barriers consistently prevent profitable clean technologies from being deployed at scale:

- **High upfront capital requirements** constrain public authorities - limited by annual budget cycles and procurement frameworks - as well as industrial actors who prioritise capital for core operations, and households and SMEs who face investment requirements that generate strong returns but require financing they cannot access.
- **Project fragmentation**, as energy efficiency projects are typically small, heterogeneous, and sector-specific - making the fixed costs of financial structuring and due diligence disproportionate relative to project size, and deterring mainstream financial institutions from engaging at scale. This barrier is particularly acute for SMEs, whose individual projects rarely meet minimum ticket sizes for institutional investors.
- **Performance risk perception**, as energy efficiency delivers "avoided consumption" rather than a directly metered output. For investors, this creates an information asymmetry: savings are real and verifiable, but the revenue stream is invisible in conventional accounting frameworks, raising risk premiums and limiting access to capital.
- **Project preparation gaps**, as many viable projects never reach financial maturity due to the cost and complexity of pre-investment work - technical audits, feasibility studies, legal and financial structuring that municipalities and SMEs cannot finance independently.

Each of these barriers is already addressed by existing policy and financial instruments. The principal challenge is therefore not developing new mechanisms, but scaling proven ones - particularly in developing countries where their application remains limited.

On Question 2 - Strengthening international cooperation

International cooperation should prioritise the replication of implementation mechanisms that have already demonstrated success.

First, multilateral development banks and the operating entities of the Financial Mechanism should support the wider deployment of **blended finance structures combining public anchor capital, portfolio guarantee schemes and technical assistance.** These design principles have been successfully demonstrated in Europe and can be adapted to developing country contexts where financing gaps are greatest and SMEs remain underserved.

Second, international cooperation should consistently position **energy efficiency as an economic competitiveness, industrial productivity and energy security strategy, in addition to its climate benefits.** This broader framing expands political ownership, attracts investment beyond traditional climate finance, and strengthens implementation of NDCs by aligning climate objectives with wider national development priorities.

The Belém Mission presents an opportunity to shift the global conversation from identifying new climate solutions to accelerating the deployment of those that are already proven. Focusing international cooperation on scalable technologies, innovative financing mechanisms and implementation-oriented policy frameworks can deliver immediate, measurable progress towards achieving NDCs, strengthening resilience and keeping the 1.5°C goal within reach.