Low Carbon Thermal Energy Roadmap Update

The headline from our low-carbon thermal energy roadmap is that electrification holds the potential to be the most stable zero-emission energy source—but only if facilities can procure 100% green electricity. In most textile and apparel sourcing regions, this is not yet feasible from an availability and price perspective. Moreover, some existing textile machinery is not yet compatible with electrical power, requiring further innovation from machinery manufacturers. The scaled deployment of electrification is still some years away: Given green electricity availability, current policies, grid conditions, utility structures, and technological readiness, widespread electrification is unlikely to become a low-emission, cost-effective option until between 2030 and 2035 - or even later in some regions.

Our upcoming low-carbon thermal roadmap, the follow-up to our August 2024 report, will address the critical questions of **when**, **where**, and **how** to implement this transition. As we strive to deliver the most comprehensive analysis of how to address the low-carbon thermal energy transition in the textile and apparel sector, we have pushed the report's release to February 2025. Aii will also publish its strategy, which is aligned with the roadmap, to support the sector in this transition.

Despite this timeline, electrification should not be overlooked. It is a long-term goal that requires short-term action. Green electricity procurement needs to be scaled. Simultaneously, electrification technologies should be piloted to develop case studies ready for scaled deployment.

We invite suppliers considering electrification for a process or a partial facility to apply for grant funding to support pioneering projects. This application will open November 19th and close January 6th. Requirements for the application can be found here.

Grant Problem Statement

- Electrification pilots are essential to ensure technical innovation, process compatibility, and cost reductions. Pilots should be pursued where facilities have sufficient access to green energy (green tariffs, onsite generation,

PPA's, etc.) for the partial electrification of processes and units. In these instances, the key barriers are risk and cost to the supplier.

- Aii is looking to support such pilot projects with grant funding to gather replicable sectoral learnings.
- Aii hopes to create sufficient case studies demonstrating technical feasibility, cost competitiveness, and CO_2 emissions reductions so that when the time is right for widespread electrification, there are examples to follow.

We know suppliers have already identified such projects. We want to facilitate the pilots, tests, and trials suppliers wish to undertake by reducing the financial risk with grant funding.

Grant Purpose

These grants will support trial electrification technologies (heat pumps, thermal storage) and/or process innovations (making processing machinery compatible with electrification technologies or solutions that result in dramatic thermal energy need reduction improving the business case for electrification) to enable future scaled deployment of electrification.

Aii's grant funding should be used for projects that would otherwise not take place because they are too risky/expensive for suppliers to take on themselves.

Suggested Project Scope:

- Case studies for successful heat pump or thermal storage deployment.
- Innovations at the process/machinery level to enable compatibility with electrification technologies such as heat pumps.
- Innovations at the process/machinery level to enable dramatic thermal energy need reduction, demonstrating how electrification can be more feasible over time as thermal energy needs reduce.

Project Requirements

- Suppliers must be prepared to share data, outcomes, and learnings from the project with Aii for dissemination to the sector.

- The project must be replicable across other facilities. While the risk of undertaking a pilot may be high, the solution should be close to or at commercialization, such that once the learnings are disseminated they can be replicated by comparable suppliers. (The solution's scalability refers to the technology itself, not the enabling conditions, which we know will take time to be realized. For example, we recognize that ultimately replication will also depend on a facility's energy mix.)
- The applicant is not responsible for scalability but should present a project scope such that other suppliers can follow the learnings and implement the technology when the conditions are right for them to do so.
- All projects must deliver CO_2 savings. Applications must come with projected savings data aligned to Aii's Ready Reckoner Solution Impact Evaluator.

Application Requirements

- The application must clearly explain the current obstacle to the solution's scaled deployment, how these challenges are surmountable through grant funding, and how the grant project will enable replicability. It must also demonstrate the project's OPEX and CAPEX are feasible after the grant funding period. Note: This may not be the case in every context, and the timeline for such feasibility may vary due to energy prices and other market dynamics. We also recognize that brands will have a role to play in financing such future projects. Nonetheless, the application should present a strong business case for the solution post-grant project.
- The source of green energy must be clearly stated and explained in conjunction with the reduction potential.
- The application window is from the opening date of November 19th until the closing date of January 17th.
- Shortlisted applicants will be invited to pitch in February. We aim to make a final decision by March.

Eligibility Criteria

- We prioritize projects occurring in wet processing facilities in Bangladesh, China, India, Indonesia, Pakistan, South Korea, Turkey, Region of Taiwan, or Vietnam.

- We will also consider applications in other geographies where technologies or green energy are more available. In these instances, it must be clear how the listed geographies will benefit from project learnings.
- Suppliers must be willing to share data and work alongside Aii to meet our grant program management guidelines (monitoring & reporting, quarterly check-ins, and deliverable-based milestones to disburse funding beyond the initial payment).
- Suppliers may apply in partnership with technology manufacturers, solution providers, and/or brands.

Evaluation Criteria

- **Effectiveness** – What are the % energy/tCO_2e savings the solution is estimated to deliver relative to a typical industrial baseline? (Baselines are provided in the appendix to the Ready Reckoner. The Ready Reckoner combines the Reach and Effectiveness and auto-calculates the Maximum Potential Savings (MPS) of tCO2e for the solution.)
- **Reach** – How much of the industry can the solution be applied to? (e.g., All wet processing? Acrylic knitwear manufacture only?)
- **Scale** – What is a realistic estimate for the roll-out/scale-up of the solution in terms of the % MPS that can be achieved over a realistic timescale (e.g. will it be rolled out to 1%, 5%, 10%, or 30% of the MPS by the end of the project funding)?
- Proposals requesting grant funding at a lower percentage of overall project cost and projects bringing co-funding from brands/technology suppliers will be given preference in decision-making.

Funding

- Grant funds range from $50,000-$250,000 per year, for up to five years.
- Funding is dispensed in installments according to project milestones, with 20% provided upfront.
- In order to support multiple projects, co-financing from the supplier or affiliated brands is required. We can only partially support CAPEX/OPEX of projects due to the limited funds available for this round of grants.