Norwegian People's Aid

Partnership for Low Cost, Scalable and Environmentally-Friendly Disposal of Personal Protective Equipment (PPE) in Mine Action

Reference Number: ITT–DMAD-2302

1. Background

Norwegian People's Aid (NPA) is a politically independent membership-based organization working in Norway and in more than 30 countries around the world. Founded in 1939 as the Norwegian labour movement's humanitarian solidarity organization, NPA aims to improve people's living conditions and to create a democratic, just and safe society. NPA's international work covers two core areas: Mine Action and Disarmament and Development and Humanitarian Cooperation. NPA has a dedicated Department for Mine Action and Disarmament (DMAD) that works in six focus areas: Mine Action, Advocacy, Conflict Preparedness and Protection, Risk Education, Arms Management and Destruction, and Environment. NPA aims to reduce and prevent harm to civilians from the impacts of explosive weapons and ammunition. NPA covers the full life-cycle of weapons and ammunitions, with interventions to protect civilians before, during and after conflict.

NPA takes a proactive stance to innovation, and has developed tools, methods and equipment that have been adopted by the entire mine action sector. Examples include the use of mine detection dogs, drones, tablets, development of new personal protective equipment, use of solar power, and new methodologies like land release and conflict preparedness and protection safety education. Besides leading innovative initiatives in the sector, NPA promotes gender equality and the participation of woman in mine action and disarmament activities. NPA is also a leading actor in the mine action sector on promoting and adopting more sustainable environmental practices, such as monitoring and reducing its carbon emissions, recycling of waste in its country programmes, and environmental remediation of explosives and other chemical waste.

NPA's work to protect civilians from explosive weapons is primarily focused on the removal of landmines, cluster munition, and other explosive remnants of war. In order to do this with mitigated risk to its staff, NPA and other International Non-Governmental Organizations (INGOs) and commercial companies rely on different items of Personal Protective Equipment (PPE).

NPA receives funding from Innovation Norway to explore the development of "Next Generation Personal Protective Equipment" used in humanitarian mine action activities. Studies conducted by NPA identified that PPE currently used in the humanitarian sector was not gender inclusive towards women; providing less ergonomics and protection for female wearers. This was further compounded by the fact that PPE has a limited service life, and there are currently no environmentally sustainable disposal methods of unserviceable PPE in many of the countries that NPA has operations. As organisations in the mine action sector deploy thousands of staff wearing PPE on a daily basis, NPA hopes to contribute to the overall reduction of the sector's environmental footprint caused by the use and eventual disposal of PPE.

2. Purpose of the partnership

2.1 Project Needs

The purpose of this partnership is to develop and deploy environmentally friendly systems for the disposal or recycling of mine action PPE. As specified in International Mine Action Standards (IMAS) 10.30 (https://www.mineactionstandards.org/fileadmin/MAS/documents/standards/IMAS-10-30-Ed2-Am4.pdf), PPE in a humanitarian mine action context is comprised of:

- Blast resistant full-face visor typically made of at least 5mm of polycarbonate. Alternatively, other composite materials and designs may be used if it provides the same level of protection and coverage.
- Blast resistant aramid aprons that provide coverage for the full-frontal torso and groin. The aprons used in combination with visors must provide coverage for the neck.

Through extensive research and operational experience, NPA has identified the following.

- Polycarbonate visors have very limited operational lifespans. Rapid deterioration of polycarbonate visors due to sunlight compromises its protective capability. The weight of full-face polycarbonate visors also causes discomfort after prolonged use. Within a mine action operational environment, polycarbonate significantly deteriorates in as little as 68 working days (i.e. 8 hours a day in the sun). IMAS Technical Note 10.10/02 recommends annual replacement of polycarbonate visors.
- Moisture from sweat and humidity as well as friction from routine activities in an operational environment cause aramid aprons to deteriorate protective capacity over time. The recommended operational lifespan of aramid PPE is typically 5 years.
- NPA's internal study showed that of the 887 aprons counted in a survey, 30% were unserviceable and kept in permanent storage. Likewise, of 1016 visors (polycarbonate and composite) 42% were unserviceable and kept in permanent storage. This equates to over a tonne of solid plastic waste. With the mine action sector using and replacing tens of thousands of PPE visors and aprons per year, this could potentially be up to several dozen tonnes of PPE produced by the sector annually. Both polycarbonate/composite visors and aramid aprons are polymer materials derived from petrochemical feedstocks. Plastic/microplastic pollution is of global concern, and it has significant environmental impact.
- As petrochemical polymers, polycarbonate and aramids do not naturally bio-degrade in landfills. In the case of polycarbonate, particulate shedding has been linked with bisphenol (BPA) and other leachate contaminants found in significant quantities in water supplies. Prolonged BPA exposure has been linked with endocrine disorders in humans.
- Polycarbonate material is not as easily recyclable as other plastics such as polyethylene. Polycarbonate is typically recycled through thermal and chemical processes that break down and reconstitute the material. Likewise, aramid recycling requires mechanical, thermal and/or chemical breakdown processes. These processes are capital-intensive and are not typically found in developing countries where NPA has its mine action operations.

2.2 Project goals

Therefore, the primary objectives of this project are:

1. **Development and testing of environmentally-friendly, low carbon footprint recycling or disposal systems for polycarbonate visors that are transportable and/or able to be locally manufactured and operated with limited technical resources.**
2. **Development and testing of environmentally-friendly, low carbon footprint recycling or disposal systems for aramid aprons that are transportable and/or able to be locally manufactured and operated with limited technical resources.**
3. **The carbon footprint of the newly developed recycling/disposal must be lower than transporting waste products to third-party countries or local open-pit burning.**

In addition, the secondary objectives are:

4. Creating a "circular economy" for by-products or feedstocks created as a result of recycling or disposing of aramid and polycarbonate waste.
5. Locally applying the systems developed for recycling/disposal of aramid and polycarbonate waste for other plastic waste found in NPA programmes.

NPA (i.e. the client) and the partner organisation (vendor) will jointly develop disposal/recycling solutions and conduct a prototype trial in one of NPA's country programmes.

Once design, prototyping and testing are completed, the systems will be rolled out in additional NPA country programmes. Depending on operational needs, additional systems may be ordered by NPA outside the scope of this project. Upon mutual agreement with NPA, the partner organisation may also further unilaterally market and sell to third party customers the products developed as a result of this project.

3. Implementation

3.1 Overview

The successful applicant must demonstrate their ability to meet the primary objectives of the project with additional preference given to applicants who can also demonstrate their ability to meet the project's secondary objectives.

Note: The applicant should not submit any prospective designs in their response to this RFP. The system designs will be developed and tested with NPA over the course of this project.

The overall value of the project is 1,800,000 Norwegian Krone (1.8 Million NOK). This is divided into 2 phases/tranches:

- Phase 1 – Design and Testing: NPA will release to the successful applicant the first tranche of funding to conduct design, development and laboratory testing. Through joint design and development, the applicant shall manufacture prototypes and perform laboratory testing as necessary. Thereafter, a field test of one prototype will be conducted by NPA (at NPA's expense) with input from the successful applicant.
- Phase 2 – Rollout: After successful design and testing of the prototypes; the remaining funds will be dedicated towards the rollout of additional units to be deployed in NPA country programmes. The final quantities of the end products will be negotiated between NPA and the successful applicant upon the conclusion of Phase 1.

3.2. Key Capabilities

The successful applicant must demonstrate the following key capabilities:

1. Understanding of the technical challenges involved in the recycling and disposal of polycarbonate and aramid materials.
2. Ability to design and build polymer recycling and disposal solutions in developing countries.
3. Ability to train low-skill workers in the building and maintenance of recycling/disposal systems.
4. Ability to design low-cost, scalable technologies for resource poor, austere environments. This especially pertains to the applicant's ability to develop and implement technologies and systems in developing countries that reduce environmental impact and carbon footprint.
5. Environmentally sustainable manufacturing practices and corporate/organisational practices and policies. This may be inclusive of, but not limited to the reduction of carbon footprint, waste reduction, use of renewable energy sources and the environmentally-safe disposal of manufacturing waste and by-products.

3.3 Timeframe

The expected timeframe of the entire project is 9 months, extendable by an additional 3 months upon mutual agreement of NPA and the donor Innovation Norway. It is estimated that Phase 1 of the project may take up to 6 months, with the remaining period committed to Phase 2.

An ***illustrative*** workplan of Phase 1 shall be provided by the successful applicant. The final workplan will be mutually agreed upon with NPA with contract signing.

3.4 Team

The successful applicant must propose a project team comprised of a project manager, key personnel and the levels of effort for each of the key personnel. A short profile of each key personnel shall be provided.

3.5. Budget

The successful applicant's total budget shall not exceed 1.8 million Norwegian Krone (NOK).

A detailed illustrative budget shall be provided for **Phase 1 only.**

The amount remaining in surplus shall be committed towards Phase 2. No budgetary details need to be provided for Phase 2. Budgetary details of Phase 2 will be mutually decided with NPA during the course of the project.

3.6 Key Outputs

The project is expected to jointly produce the following key outputs within specified timeframes:

1. Designs and prototypes of low-cost, scalable and locally manufacturable polycarbonate and aramid recycling/disposal solutions
2. Successful field testing of a prototype in one NPA country programme.
3. Rollout of the products in additional NPA country programmes.

4. Proposal Requirements

4.1 Criteria for Selection

A successful applicant will demonstrate its ability to fulfil key deliverables within agreed timelines. NPA will score the bids with the following criteria (not listed in order of priority):

Criteria	**Weight**
1. Knowledge of the technical challenges of the project	20%
2. Responsiveness to Key Capabilities (outlined above in Section 3.1)	40%
3. Ability to deliver key outputs within project timeline	20%
4. Project Team	10%
5. Price	10%

NPA will select the applicant that overall presents the most relevant bid for NPA

4.2 Bidding Documentation

As a minimum, a bid needs to include the following.

Proposal Narrative – Not exceeding 20 pages, excluding annexes.

1. Knowledge of technical challenges of the project

- Proven results in working in developing countries on environmental-related projects.

- Experience training low-skill base workers in developing countries.
- Ability to meet project primary objectives outlined in Section 2.2. Applicants are encouraged to provide case studies that highlight past performance demonstrating this ability.

2. Responsiveness to Key Capabilities

- The successful applicant must demonstrate, with narrative examples, ***all*** key capabilities outlined in Section 3.2.
- Applicants are encouraged to provide other documentation such as pictures and case studies to highlight its key capabilities.
- Priority is given to suppliers certified by an environmental management system, such as Eco-Lighthouse, ISO 14001 or EMAS.
- Priority is given to suppliers of packaged products that are members of Grønt Punkt (Green Dot) or equivalent.

3. Ability to deliver key outputs within timeline

- Ability to produce designs and prototypes within the Phase 1 timeline.
- Reference to/examples of previous tasks of high-quality products delivered within agreed timelines.
- Illustrative workplan (may be included in the narrative or in an annex).

4. Project Team

- Key personnel assigned to the project, their roles within the project and short professional biographies. Weight will be given to project teams that demonstrate experience working with the humanitarian sector and ability to take client/user feedback.
- Key personnel CVs may be provided in an annex but is not a requirement.

Budget and Budget Narrative (Price)

- Applicants must provide a spreadsheet budget and accompanying narrative budget notes.
- An illustrative budget for Phase 1 budget detailing the levels of effort by applicant personnel, research and development costs, laboratory testing costs and anticipated prototype production costs. Field testing costs should not be included, as they will be conducted by NPA.
- The amount remaining after Phase 1 shall be dedicated as a surplus "lump sum" towards Phase 2. It is not necessary for applicants to provide budgetary details for Phase 2.
- The overall budget shall not exceed 1.8 million NOK.
- The budget shall be submitted in Excel format while the accompanying budget notes may be submitted in Word or PDF format.
- Applicants should use their own budget templates. The information should be presented clearly and concisely.

- ***Applicants will be assessed based on the cost-competitiveness of its Phase 1 budget and the size of the surplus remaining for Phase 2***. The remaining surplus allocated for Phase 2 will be for the additional deployment of the final products.
- Applicants may provide a budget in a currency other than NOK. If a budget is provided in a currency other than NOK, the applicant must clearly state the exchange rate used when the budget was developed, the date of the exchange rate and provide a citation/source of the rate used (e.g. xe.com or other sources).

The bid must also include the following mandatory document, as annex:

- Written acceptance of "NPA Ethical guidelines for procurement, marketing and investment" as per attachment.

4.3 Selection Process

The Deadline for applications is 15th February 2023. The bid will be considered valid for 30 days. Bids will be opened only after the 15th February 2023. The bids will be confidential and NPA will keep all information from bidders confidential.

NPA retains the right to contact bidders first for follow-up and clarification after the bids have been opened. ***NPA retains the right to reject some or all of the bids received.***