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Flash project

Safety in the transport of ammonia by pipeline (STAP)

Information file for applicants

Submission deadline proposals
26/09/2025 @ 17h00

INTRODUCTION

This document provides specific information for research teams interested in submitting a research proposal in response to a Flash project call in the frame of the "Science4Policy (S4P) programme".

FLASH PROJECTS

FLASH projects are short-term projects with a maximum duration of 12 months. The Flash projects are designed to deliver a rapid response to a pressing policy demand for which scientific evidence is requested from the academic community. A call for a Flash project is issued by BELSPO whenever requested by a Federal public administration and its Minister in charge.

Flash projects are not intended to produce new knowledge but use sound existing knowledge to generate scientific grounded evidence for policy action.

CONTENT OF THE STUDY

Objective of the project:

1. Background

Hydrogen produced in a decarbonised way is currently the most often cited compound for its role as a sustainable fuel in applications where electrification is difficult or even impossible: high-temperature heating, chemical reduction processes to replace coke a.e., long-distance transport by boat, etc.

As hydrogen is very difficult to liquefy given its very low boiling point (-253°C), hydrogen is much more difficult to transport in very large quantities than natural gas or liquid hydrocarbons. This is

why it is proposed to use “intermediary” compounds to transport it in the liquid phase by boat but also by pipeline: these compounds are called “hydrogen carriers”.

The main “hydrogen carrier” already well known is ammonia. This easily liquefiable gas (liquid at -33°C or under a pressure of 8 bar) can be produced from sustainable hydrogen. After transport, it can be converted back into hydrogen, releasing only nitrogen gas (N2), which is a harmless gas because it makes up 78% of our atmosphere.

However, ammonia is toxic.

To authorise new ammonia transport pipelines on the Belgian territory, it is necessary to complete the relevant regulations.

Belgian legislation on safety in the transport by pipeline consists of a Royal Decree of 19 March 2017 and 4 technical codes approved by Ministerial Decree. This Royal Decree impose to the applicant for authorisation for transport by pipelines to carry out a risk analysis beforehand. To do this, one of the 4 technical codes mentioned above entitled “Risk Analysis” describes:

- how this risk analysis should be carried out,
- which parameters, scenarios and starting hypotheses should be used,
- what are the acceptable levels of risk.

For more information: https://economie.fgov.be/en/themes/energy/sources-and-carriers-energy/natural-gas/transport-gaseous-products

This technical code applies to all flammable gases, such as natural gas, but excludes those that are also toxic, such as ammonia. The “toxicity” dimension does therefore not appear in the risk analysis as described in the already existing technical code.

The scientific support consists of proposing a risk analysis method adapted to the transport of toxic products by pipeline. It will also involve specifying the starting hypotheses, the scenarios, the parameters to be used and the acceptable levels of risk, based on the existing scientific literature on the subject and adapting the parameters to the reality of the densely populated Belgian territory. It will also involve ensuring that the levels of risk deemed acceptable for toxic products are consistent with the levels imposed for flammable products.

2. **Research domain:** Safety in the transport by pipeline - industrial risks
3. **Keywords (5 maximum):** safety, pipelines, toxic, industrial risks
4. **Specific research questions**

The proposal will address the following research questions:

1) Which risk analysis methods are imposed at regional level within the framework of environmental permits for the storage of toxic products (and if they exist at regional level, which methods are recommended within the framework of environmental legislation for the transport of such products by pipeline)? Which methods are imposed in neighbouring countries for the risk analyse for the transport of toxic products by pipeline?

2) What would be the most appropriate method to impose at federal level for the analysis of the risks associated with the transport of toxic products by pipeline?

3) To what extent is it possible, on the one hand, to combine a high level of safety with administrative simplification and, on the other, to use the same hypotheses and scenarios as those proposed in the technical code for flammable products?

4) What levels of risk would then be acceptable and compatible with those accepted for flammable products?

5. **Duration and schedule:** The project will last a **maximum of 9 months**. As this is a maximum deadline, this deadline and all the intermediate deadlines may be shortened at the discretion of the Principal Investigator. Deadline for Deliverable 1: **3 months after the start** of the project (in line with the maximum deadline, see above). Deadline for Deliverable 2: 1st version **6 months after the start** of the project - final version after at least one consultation meeting: **9 months after the start of the project**). Deadline for Deliverable 3: **to be organised** according to the various agendas.

6. **Deliverables**

Deliverable 1: report on the legal requirements for risk analysis at regional level for the storage of toxic products and in neighbouring countries for the transport of these products by pipeline

- Comparison of risk analysis methods imposed by regional environmental legislation for the storage of toxic products (and possibly for their transport by pipeline). Overview of the methods imposed in neighbouring countries for the risk analyse for the transport of toxic products by pipeline (is such obligation exists).

Deliverable 2: proposal for a new technical code “Risk Analysis” for the transport of toxic products by pipeline

- Inspired by the already existing code for flammable products, this draft new code will be the subject of consultation between the administration and the project grant awarded research team.

- It will then be submitted for consultation with various bodies (in particular the DG Quality and Safety of the FPS Economy) and with the sector (in particular the Belgian Federation of Pipeline Transporters - FETRAPI), then approved by ministerial decree and published in the Belgian Official Journal.

Deliverable 3: Presentation of the draft technical code to the sector/stakeholders to be organised according to the various agendas

7. **Impact, KPIs and objectives**

KPI 1: Acceptance of the draft new technical code by the administration, subject to any changes.

Note: The presentation to the stakeholders may have to take place, based on a gentlemen's agreement, after the 9-month period planned for the completion of the work in question.

The following KPIs are no longer the responsibility of the project grant awarded research team:

KPI 2: Agreement of the parties concerned (sector, DG Quality and Safety, etc.).

KPI 3: Approval by the Minister and publication in the Belgian Official Journal.

BUDGET

The budget allocated to a project is depending on its duration in months. This one **shall not exceed 9 months**. A maximum amount of 10.000€/month can be allocated for a Flash project.

The eligible costs are:

- Personnel costs: Staff costs include the (full) costs relating to staff recruited under employment contracts and to non-salaried staff (lump sum payment per Person/Month);
- Specific operating costs: This includes the cost of goods and services directly related to the implementation of the project and of which the list is included in the proposal.
- Indirect costs: Lump sum to cover the general operating costs set at 15% of personnel and specific operating costs.

APPLICATION

Flash proposals must be written in English and signed electronically. Proposals (in pdf format) should be sent to flash@belspo.be by mentioning the Flash proposal acronym in the subject line of the e-mail. Applicants are required to meet the conditions set forth in this information documents and to comply with the scope of the call for the Flash project. The template of the application form can be accessed via the BELSPO website, Documents for promoters | S4Policy | P4Science & S4Policy (belspo.be).

The closing date for this Call is **26/09/2025 at 5.00 p.m**.

EVALUATION AND SELECTION

The Flash proposals are evaluated and recommended for funding by a panel of independent foreign experts under the supervision of BELSPO, within 4 weeks after the submission deadline. The evaluation criteria are the adequacy of the budget and human resources, the skill(s) of the scientific team(s) and the methodological approach.

The evaluation form template can be consulted on the website: Documents for promoters | S4Policy | P4Science & S4Policy (belspo.be)

The final decision is taken by the Chairman of the Board of Directors of BELSPO upon the advice of the Inspector of finances, within the available budget.

CONTACT AND QUESTIONS

For any further questions about this call for Flash proposals, please get in touch with the Belspo Flash team via e-mail: flash@belspo.be.