

Mobile system for filling salt silo

This is a translation – for the original challenge description, contacts and submission got to:

[Mobile Vorrichtung für Befüllung von Salzsilo - IÖB Innovationsplattform \(ioeb-innovationsplattform.at\)](https://ioeb-innovationsplattform.at)



An initiative of

 Federal Ministry
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Climate Action, Environment,
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Innovation and Technology

In cooperation with

BBG BUNDES
BESCHAFFUNG

Challenge Sponsor

ASFINAG | Autobahnen- und Schnellstraßen-Finanzierungs-Aktiengesellschaft



Point of Departure

In order to prevent traffic on highways and expressways from coming to a standstill in winter, two things are essential: the mechanical clearing of snow and the use of salt (sodium chloride) as a de-icing agent. The amount of salt used by winter road clearance services varies. On average, ASFINAG grinds about 80,000 tons of salt annually. A blog article by Georg Steyrer, Head of Operational Maintenance in the Eastern Region and juror of this Open Innovation Challenge, provides insight into the use of salt: <https://blog.asfinag.at/auf-der-autobahn/salz-auf-unseren-autobahnen>

ASFINAG stores salt for winter road maintenance in around 200 silos and 25 warehouses. Some of the silos are in ASFINAG's freeway maintenance depots, some along the route. Salt is delivered by [silo trucks](#) that are not owned by ASFINAG. Such a special vehicle blows about 25 tons of salt in one hour into the silo via a riser pipe at a height of about 25 meters. The smallest silos would thus be filled to capacity in one hour. The bulk of the silos can hold between 350 and 680 tons of road salt. Filling therefore takes place in stages - as a rule, a silo is never completely empty.

This method of filling reaches its limits, especially at times of high consumption. Silo trucks are in short supply at these times. If a lot is consumed, the silos also have to be re-filled quickly due to the winter conditions.

Main Question

How can a mobile system for filling salt silos be designed and built to reduce the dependence on silo trucks for winter maintenance in a timely manner?

Desired situation

ASFINAG wants to break away from its dependence on silo trucks. A new type of mobile system for transporting the salt to the silo is to supplement the use of the special silo trucks at peak times. Key challenges and functional cornerstones that must be met:

- Handling of the road salt must continue to be done in a way that keeps it dry and clean.
- The conditions at the silos are designed for delivery by silo trucks. Therefore, even with a newly designed system, filling can only be done through the injection pipe fixed to the silo at person height (A-coupling 4 inch diameter).
- Unloading into this filling equipment must be done directly from vehicle delivering the salt (push floor or dump truck).

- One to two people should be sufficient to deliver, set up and operate the equipment at the silo.
- The speed of filling the silo should be competitive with the current standard, if possible. That is, an entire truckload of salt should be unloaded after one to two hours at the latest. Otherwise, longer filling times could easily lead to congestion of the delivering vehicles, since it is impossible to optimize the delivery times to avoid congestion.
- The new type of system would not be used for months - e.g., over the summer. The machine must therefore be robust and undemanding in terms of maintenance so that it can move to the next silo at any time in the fall to do its job there.

The **submission deadline** is: **July 19th, 2022**

Preliminary consideration of the process and the construction

The salt arrives at the silo by means of an easier available semi-trailer. The new type of system is mounted on a standardized roll-off container / roll-off superstructure and is brought to the site by a hook truck. Its heart is a compressor that blows the salt into the silo. It is driven by means of a cardan shaft via a tractor or Unimog or with an installed aggregate/engine.

Call for proposals

With this open innovation challenge, those responsible at ASFINAG (see jury) are addressing companies or consortia that can contribute both a concrete perspective for the development and the construction of at least one pilot system. At the same time, manufacturers or distributors of key components are invited to submit and publicize them.

The subsequent design of a mobile system can either be based on ASFINAG's own preliminary considerations of sequence and components or can be done in other ways while adhering to the functional cornerstones. Innovative and better ideas are welcome and will be treated confidentially.

To provide the jury with a basis for selecting interviewees at the Innovation Dialogue, please submit companies online first:

- A description of their solution approach ("idea") or the key component you could bring to the table.
- A description of your own services and those of cooperation partners; if possible, the description should be illustrated by descriptions of similar projects/systems.
- A first rough estimate of the costs for the development and construction of a pilot system.
- A rough schedule for the realization up to delivery. Important: The public part of the submission must consist at least of the company profile (with reference projects) and a summary of the main aspects; the concrete approach can also be provided confidentially as a pdf via the

moderator to protect the idea from imitation. The jury commits itself to confidentiality and protects genuine ideas of the submitters with unique selling proposition from exploitation by third parties.

Benefits of the Challenge and further course of the project

The sponsor receives an overview of solutions to be considered and potential partners with the online submissions to the Challenge. The jury of internal experts then invites those companies to an innovation dialogue whose solutions stand out particularly positively in terms of the evaluation criteria. During the innovation dialogue, understanding can be sharpened, and ideas can be specified.

As a submitting company, please keep **September 27th, 2022**, free for the **Innovation Dialogue**.

For companies, this means: Participating in the Challenge puts you on the radar of the public purchaser. Your submission remains visible as your business card for other interested parties even after the Challenge is over. You put yourself in position for further public sector purchasing projects. If you are among the winners and are invited to the final innovation dialogue, you can present your solution at a market meeting. You will exchange ideas directly with the project managers.

This creates sensitivity and understanding on the part of the public client for suitable innovations and aspects that may have been neglected so far. This is important so that the public client can take innovative approaches into account in the possible purchasing project after the market investigation according to the Federal Procurement Act and initiate an implementation in line with the market.

Depending on the results, the further project plan provides for the following:

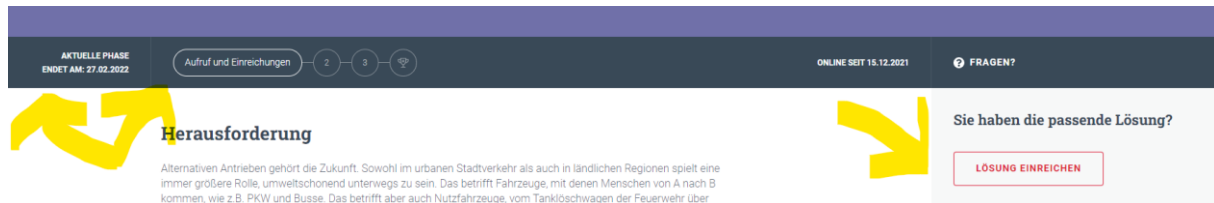
If the market discussions suggest that implementation makes sense, the immediate goal is to commission a pilot mobile system through the procurement process that makes sense and is permissible, depending on the findings of the market survey. In addition, depending on the practicability of the demonstration system, each region could be equipped with approx. 1-2 mobile systems (approx. 10 in total).

Your Questions

Contact the moderator or post your question about the Challenge. Our moderators will check, research and publish your question together with the answer. This way, all potential participants are certain to receive the same information.

How to submit a solution/idea

Check the submission deadline (phase "Aufruf und Einreichungen"); click on the button "Lösung einreichen" on the top right side of the page.



- **Beschreibung**
Post a meaningful description (make references to the description of the challenge and evaluation criteria on the right side of the challenge page)
- **Mehrwert**
Highlight the benefits of your solution.
- **Titelbild**
Upload a picture to be displayed on the landing page of the challenge.
- **Kooperationspartner**
If you are handing in a joint contribution with other companies, this is where you make sure they are represented with logos and names.
- **Dateien & Infos**
If necessary in addition to the descriptions above: add pdf-files (e.g. existing product brochures). But: Keep your contribution manageable for the jury.
- **Vertrauliche Infos**
If necessary, place a confidential information for the jury, the sponsor and moderator (e.g. indication of approximate price range). All other parts of the contribution will be public.

Please be aware of the fact, that a challenge is market research / market engagement prior to a possible procurement. The challenge will not decide upon a contract award nor will it lead to any unfair advantage in a tender. Please balance your time and effort.

Contact Information

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