



PGS 12 Dutch Guideline for ammonia terminals: applicable worldwide?

Antea Group

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AEA, 13-15 November 2023

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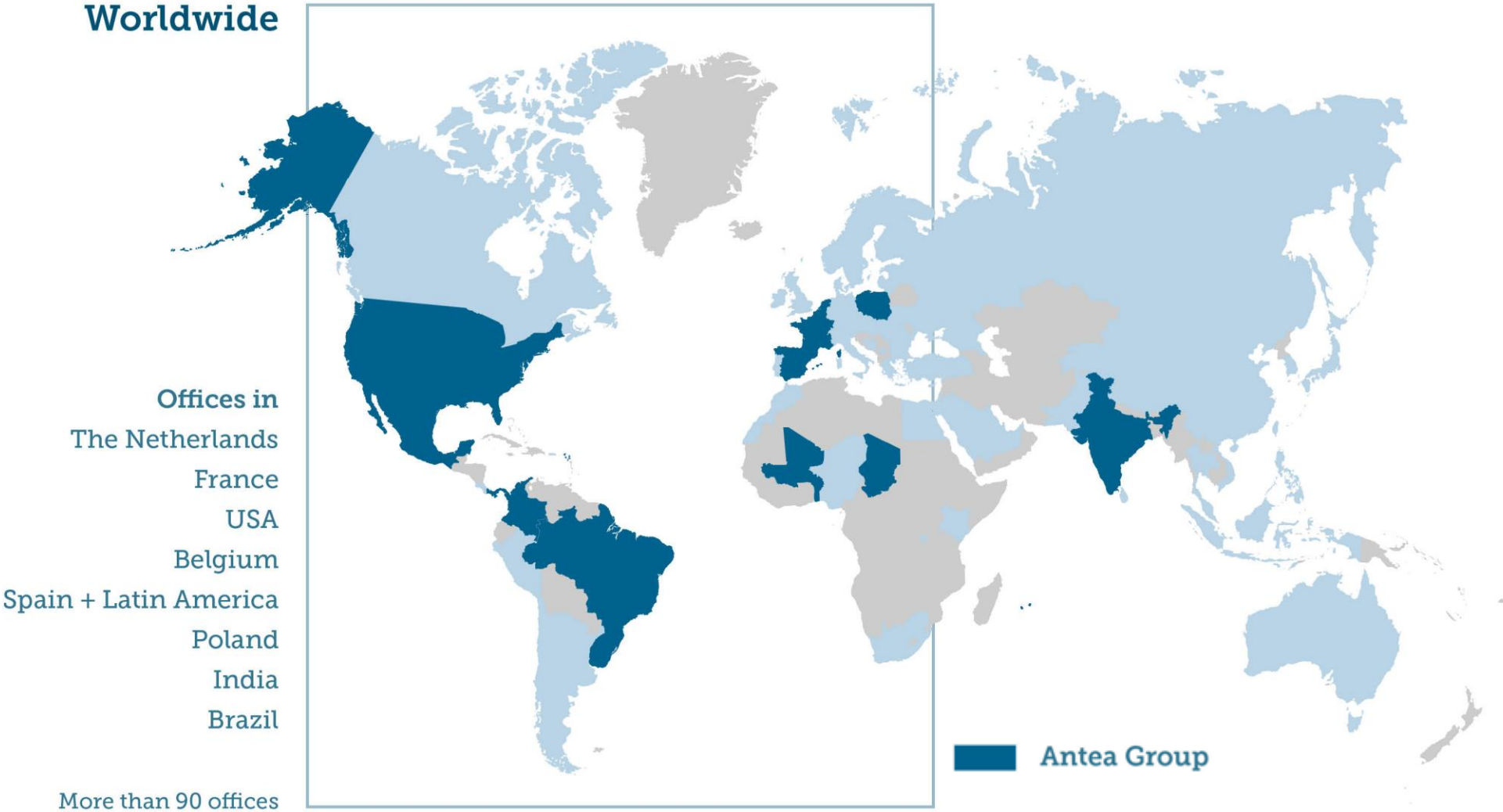


- Strategic consultant Environment, Safety & Health
- Safety (storage, transport, urban areas)
- Compliance
 - including Flora, Fauna, NOX, Noise, Soil, Water, etc
- Clients
 - Industrial companies (international)
 - National & local government
 - Infrastructure managers (esp. rail)
 - Safety authorities



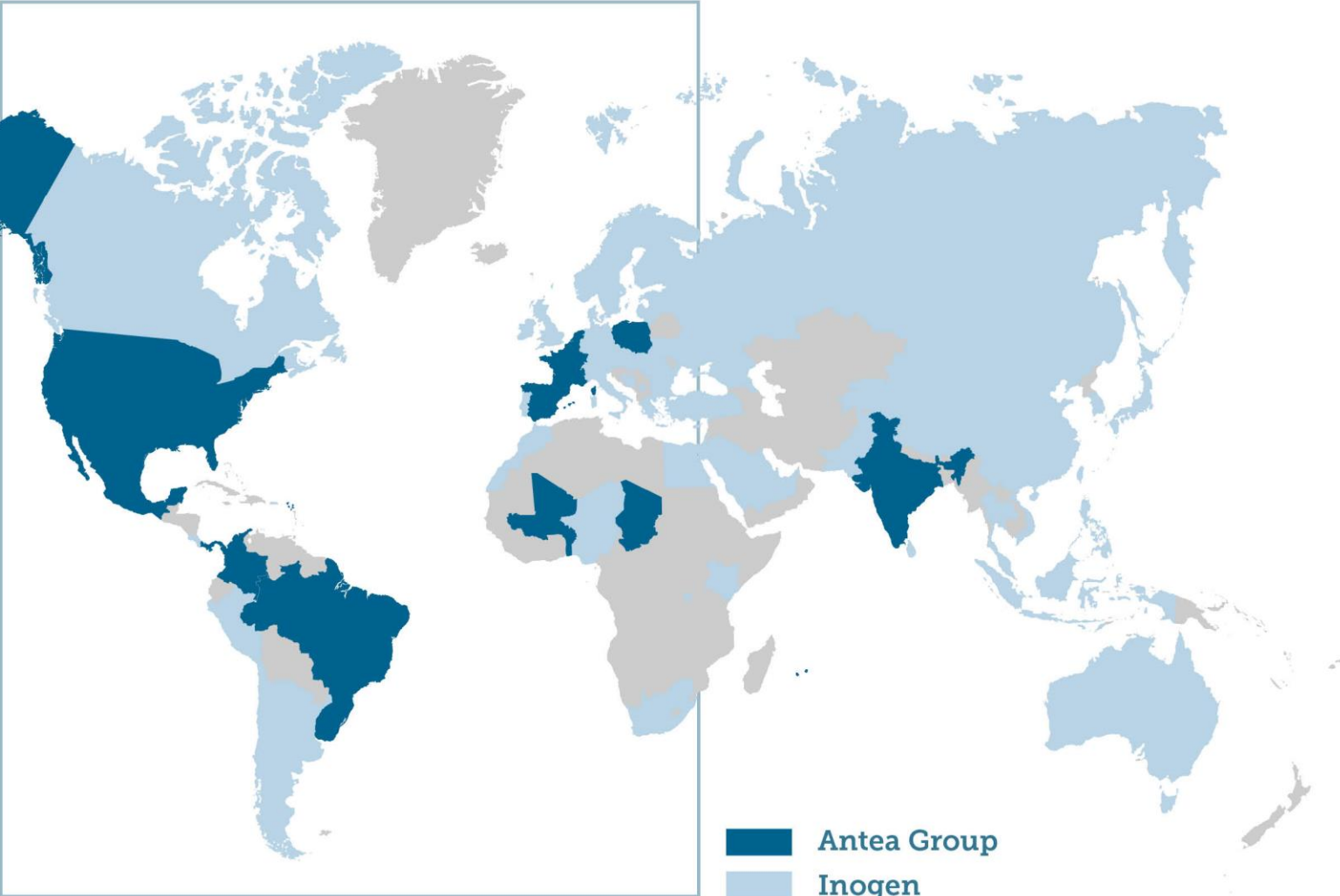
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Worldwide



Per Januari 2024: new office in the UK!

Worldwide



Thanks to our partnership with the Inogen Alliance of environmental consultancies, Antea Group's operations span almost the entire globe.



Presentation



- NH_3 as a green energy carrier to go carbon free:
Very good idea!
- Safety is a necessity to make it work
- Hence: PGS12 guideline:
 - Best available techniques according to Dutch authorities
 - Actualisation done with help of Ammonia & Energy Industry
- In presentation:
 - Implementation possibilities worldwide: topics
 - How to manage your surroundings

PGS12 Guideline



- Purpose
 - To describe the state of the art of process safety, occupational safety, environmental safety and emergency response for storage and loading of ammonia
- How?
 - By including current legislation and regulations, and referring to the guidelines accepted by the (international) trade associations.
- Scope
 - The storage, loading and unloading of ammonia;
 - Storage under pressure in both cylinders and spheres as well as in cooled atmospheric tanks with no lower limit or upper limit for the volume of storage ammonia is set

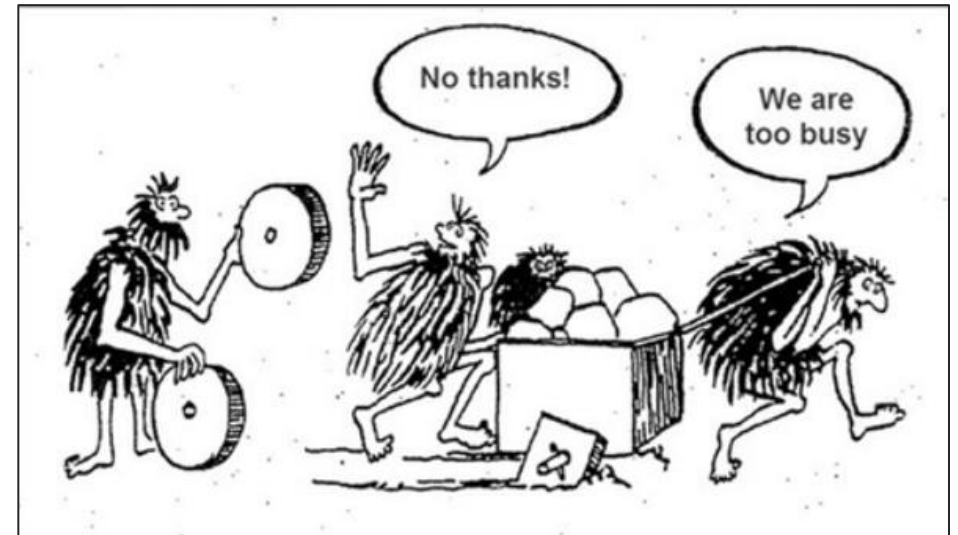
PGS12 Actualisation

- Focus on prevention!
- Why? we can not manage a major incident where ammonia escapes in large volumes
- Incident recovery: only small LoC's



PGS12: suitable for global implementation?

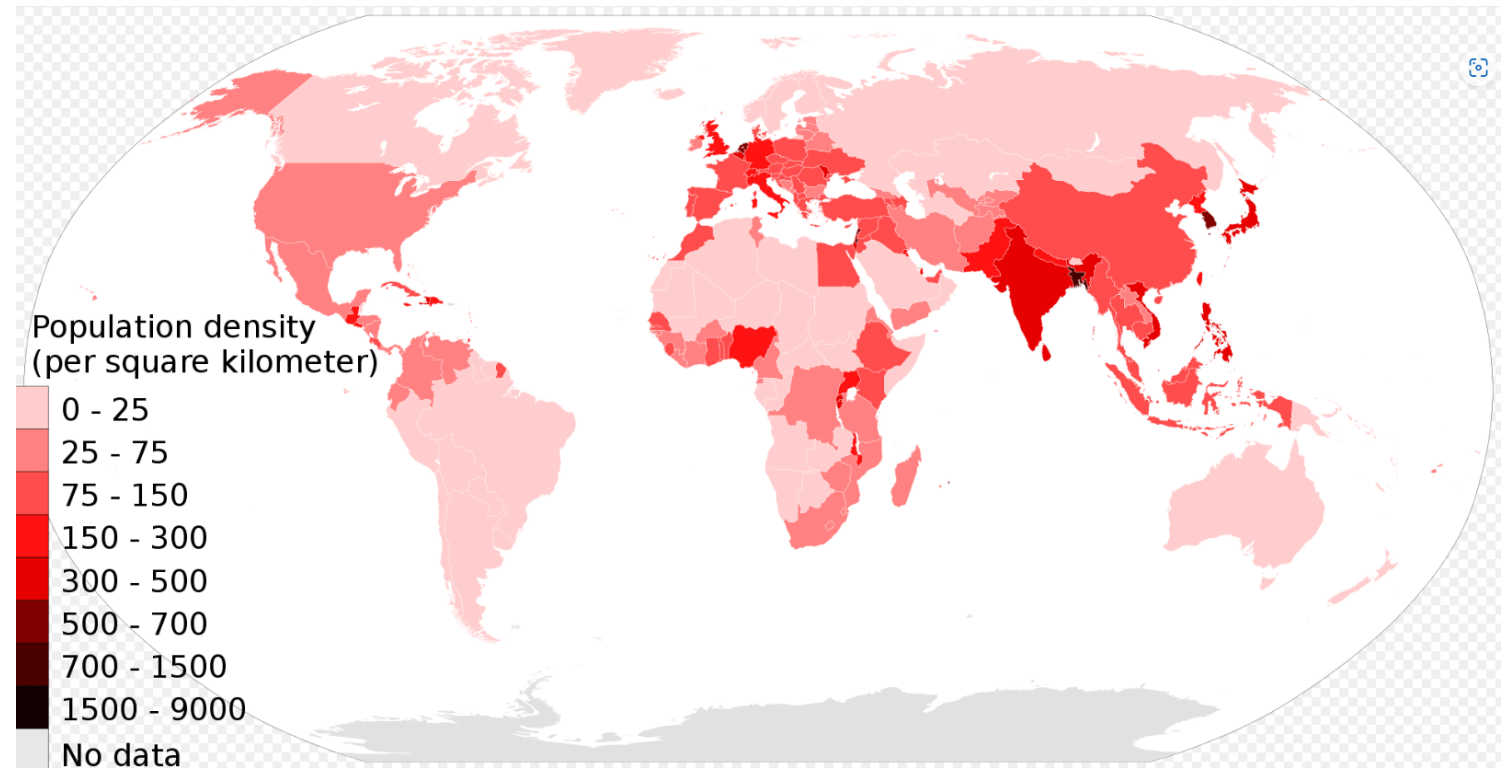
- Best to use the same safety standard worldwide
 - Use of knowledge,
 - Sharing experiences,
 - Sharing incident reports and solutions



PGS12: suitable for global implementation?

Global use but with local deviations

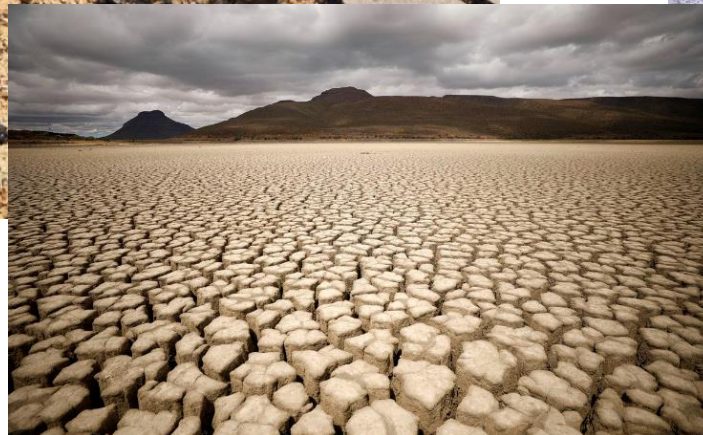
- Available space



PGS12: suitable for global implementation?

Global use but local deviations

- Seismologic
- Climate
- Temperature
- Humidity



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PGS12: suitable for global implementation?



Global use but local deviations

- Consideration of Risk only for humans or also flora/fauna?
- Cultural differences:
 - Risk based, compliance based, other?
 - Liability based or sharing experiences

In addition to implement global standard



- Knowledge gap between companies and civilians
- Presentation of plans and projects versus fears
- Need to fill this knowledge gap to enlarge use of NH_3
- So: implement global safety standard and inform your neighbours

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Training to solve this knowledge gap

- Partnership of Antea Group, H2K and AEA/NH3 event Europe
- For governments, safety authorities, companies, ...
- Check our website (scan QR) for information about course and actualised PGS12
- [Ammoniak Expertisecentrum van Antea Group](#)
- Start courses will be announced on our site, LinkedIn, etc



Safety doesn't end outside premises



Serbia, dec 2022
(->speed, too high velocity train)



Did houses offer enough safety?



East Palestine, feb 2023
(caused by hotbox train)

Thank you for your attention,
If you have more questions...

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