

Nordiske krav for begrensnig av utlekking av metaller til drikkevann

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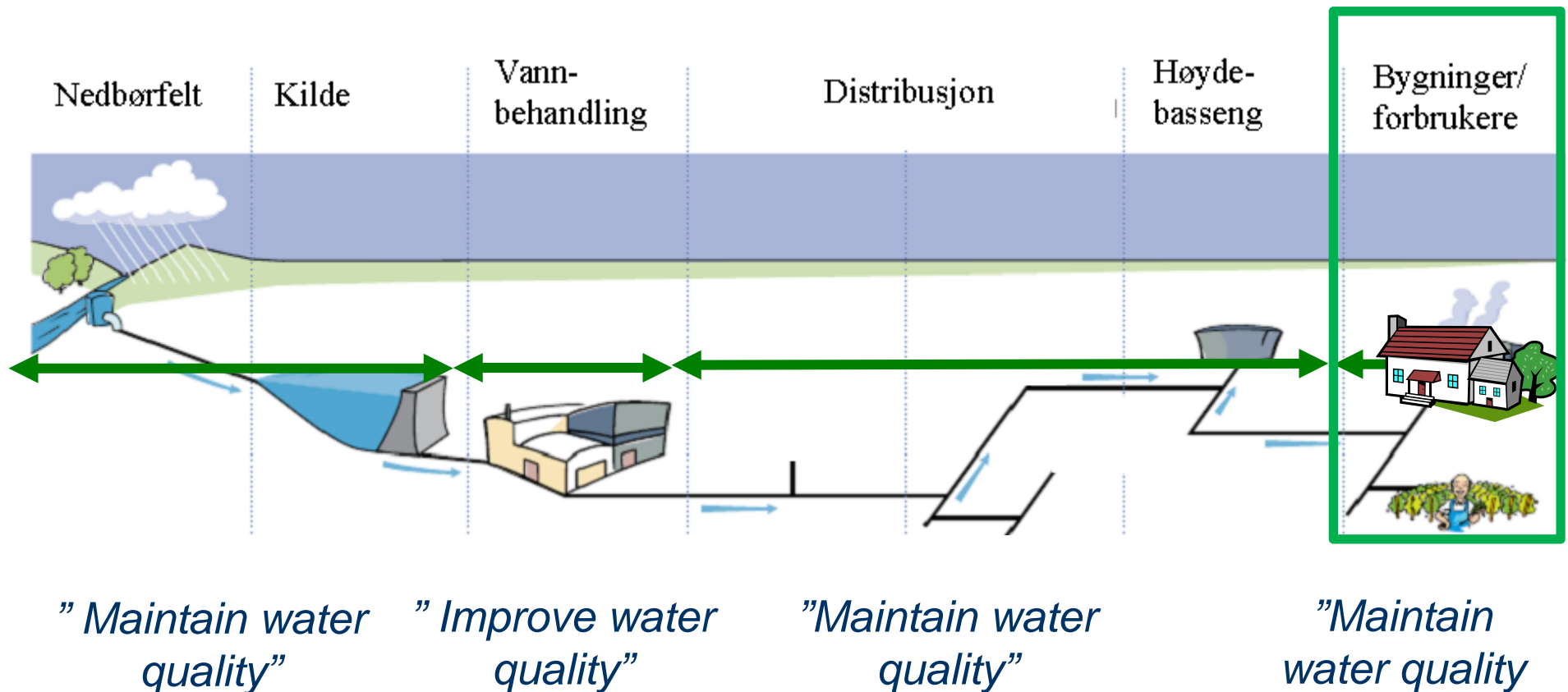
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- Health effects

- Criteria in Nordic countries today

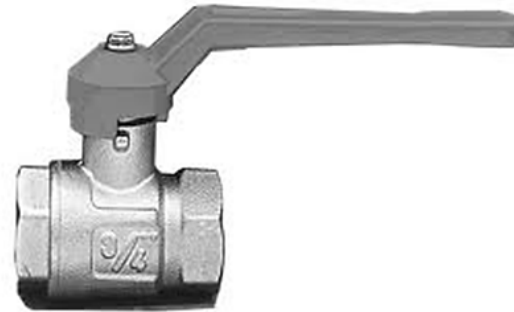
- Short introduction of MaiD

Material components impact on water quality in water supply



Metallic materials

- Stainless steel
- Copper
- Brass

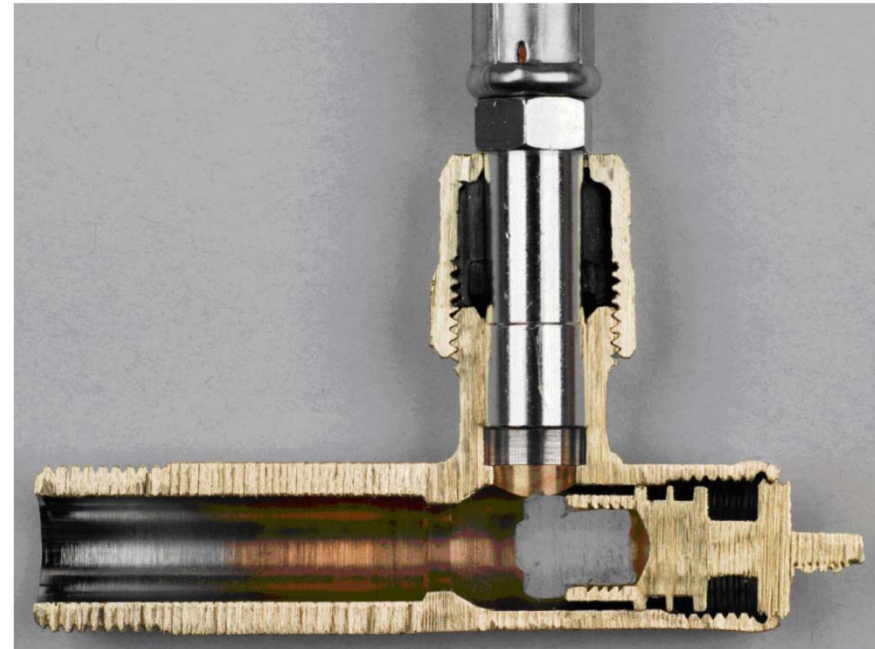


**Metal leaching control today in Nordic countries:
Pb, Cd and Ni**

Why Pb, Cd and Ni?

- Cd due to the risk for contaminant in the alloy
- Pb as a "lubricant" in the processing of brass
- Ni due to the chrome/nickel plating

Ni on inner product surface



From: AHG5 N368: Objective B: Determination of the amount of nickel released from the surface of chrome plated products made of copper alloys

General health effects

Impact on health	Pb	Cd	Ni
Toxic	Yes	Yes	Yes
Accumulated in body	Yes	Yes	Yes
Carcinogenic	-	Yes	Yes
Impact on nervous system, kidneys and blood formation.	Yes	Kidneys	Heart
Sensitive against child and infants	Some connection	-	-
Impact on reproduction	-	Yes	-
Damage on skeleton	-	Yes	-
Impact on heart	-	-	Yes

WHO drinking water guideline values for Pb, Ni and Cd

	WHO drinking water guideline values ($\mu\text{g/L}$)		
	Pb	Ni	Cd
WHO 1958	100	Not published	Not published
WHO 1984	50	Not published	5
WHO 1993	10	20	3
WHO 2006	10	70	3
WHO today	10	70	3

Criteria and limit values for the product

Basic Requirements (BR) defined in Construction Products Regulation (CPR)

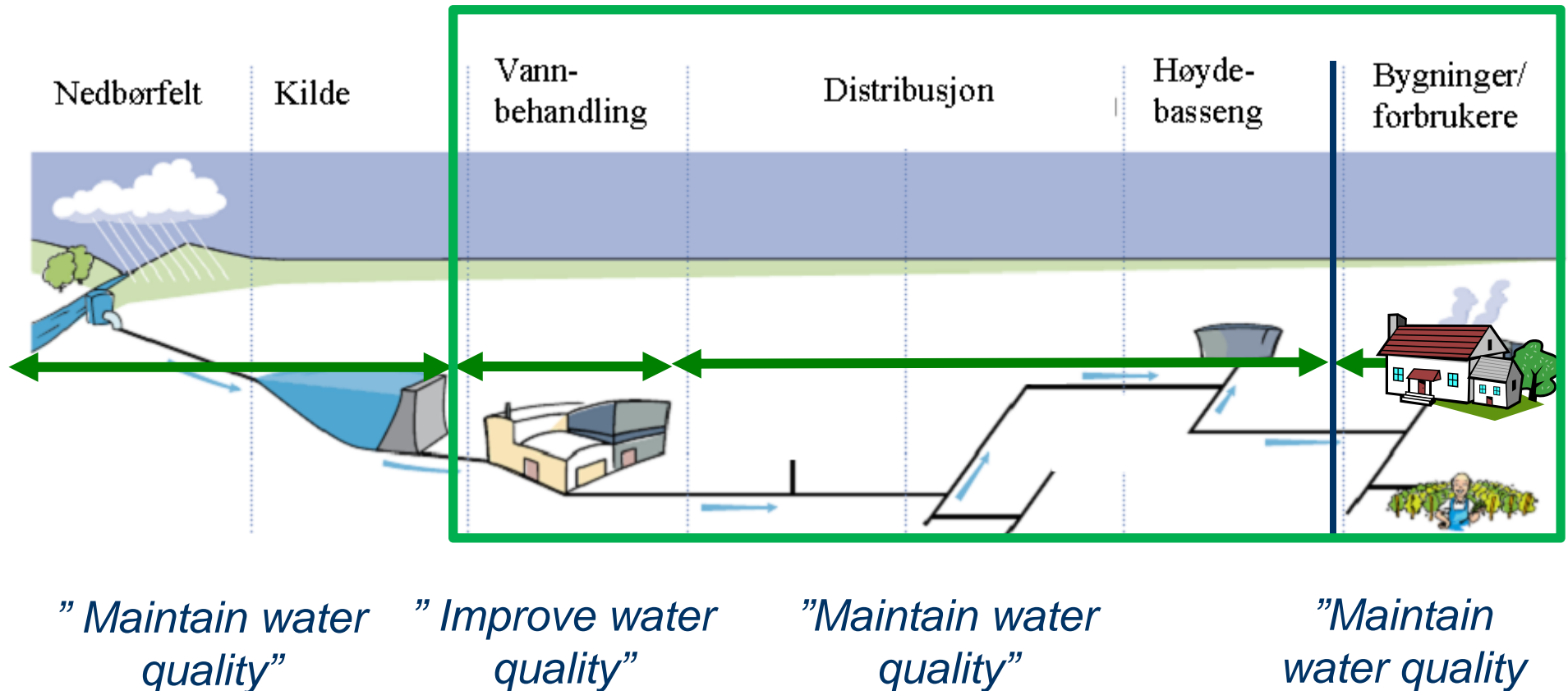
- BR 1 Mechanical resistance and stability
- BR 2 Safety in case of fire
- BR 3 Hygiene, health and the environment**
- BR 4 Safety in use
- BR 5 Protection against noise
- BR 6 Energy economy and heat retention
- BR 7 Sustainable use of natural resources



Building regulation in Norway

- **Byggteknisk forskrift (TEK)** skal sikre at byggverk oppfyller tekniske krav til sikkerhet, miljø, helse og energi. Kravene angir minimumsnivå som det ferdige byggverket skal oppfylle. Kravene er gitt som funksjonskrav og i noen tilfeller som ytelseskrav. Funksjonskravet for byggevarer i kontakt med drikkevann, er at de ikke skal avgi stoffer som kan forringe kvaliteten på drikkevannet eller medføre helsefare.
- **Forskrift om dokumentasjon av byggevarer (DOK)** inneholder regler for dokumentasjon og omsetning av produkter til byggverk. Byggevarer som er i samsvar med DOK, skal fritt kunne omsettes i hele EØS-området, men for at varene skal kunne brukes lovlig i byggverk i Norge, må de også være i samsvar med TEK. Det er viktig å understreke at DOK stiller samme dokumentasjonskrav til produkter både med og uten CE-merking, fordi det er de grunnleggende kravene til byggverk i byggevareforordningen (implementert i TEK) som ligger til grunn for dokumentasjonskravet.

Regulation in Norway: scope



Regulation in Norway: important aspects

- Verken TEK eller DOK angir maks tillatt utlekking av helsefarlige stoffer fra byggevarer, man må forholde seg til grenseverdiene i drikkevannsforskriften.
- Veiledningen til TEK gir eksempler på hvordan produkter dokumenteres tilfredsstillende, og ett av eksemplene er de nordiske produktregler for sanitær tappearmatur (NKB 4).
- NKB angir ytelseskrav til produkter (maks utlekkingsmengde av Pb og Cd) sammen med verifikasjonsmetoden (utlekkingsstest) for at ikke produktene skal medføre helsefare (funksjonskrav).
- Veiledningen i TEK10 gir ingen andre eksempler for produkter benyttet utomhus i stikkledning og hovedledning selv om TEK10 omfatter dette også.

Criteria for marketing and use in Nordic countries – sanitary tapware (only for Pb and Ni)

Item	Norway	Sweden	Denmark	Finland
General requirement in building regulation	Yes	Yes	Yes	Yes
Approval mandatory	No	No	Yes	No
Limit value in legislation Pb Ni	No No	No No	5 µg (NKB) ¹ 80 µg (NKB) 20 µg (EN 16058)	20 µg (NKB)
Limit value in the guideline to legislation	No	5 µg (NKB) ² 5 µg/L (EN 15664) Valid for Pb	No	No
Limit value in the standard test referred to the guideline to legislation	Refer to NKB 20 µg	No	No	No

¹Valid from 01.04.2016. 20 µg is used in the meantime

²Valid from 01.06.2016. 20 µg is used in the meantime

Material and product innovation through knowledge based standardization in drinking water sector (MaiD)



norden

Nordic Innovation

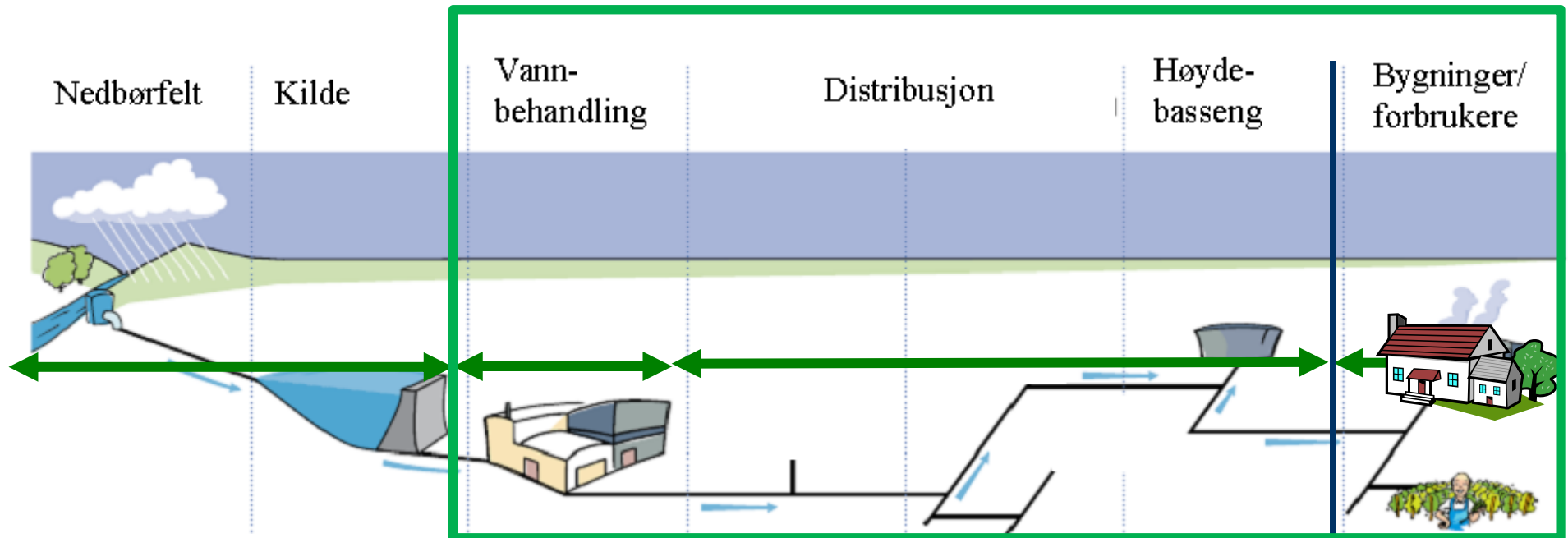
Goal

The overall objective is to increase the innovation in the drinking water sector by identifying rational, practical and safe standards and guidelines for placing materials and products on the Nordic market.

Purpose is therefore to

- Evaluate the current Nordic approval, acceptance practice and related standards
- Identify possible Nordic requirements regarding water quality that needs to be addressed
- Evaluate the applicability of the 4MS acceptance procedure and related standards
- Evaluate the laboratory capacity in the Nordic countries
- Recommend the key components that should be included in for Nordic common acceptance scheme in order to safeguard drinking water, material quality and the level playing field

MaiD: scope



"Maintain water quality"

"Improve water quality"

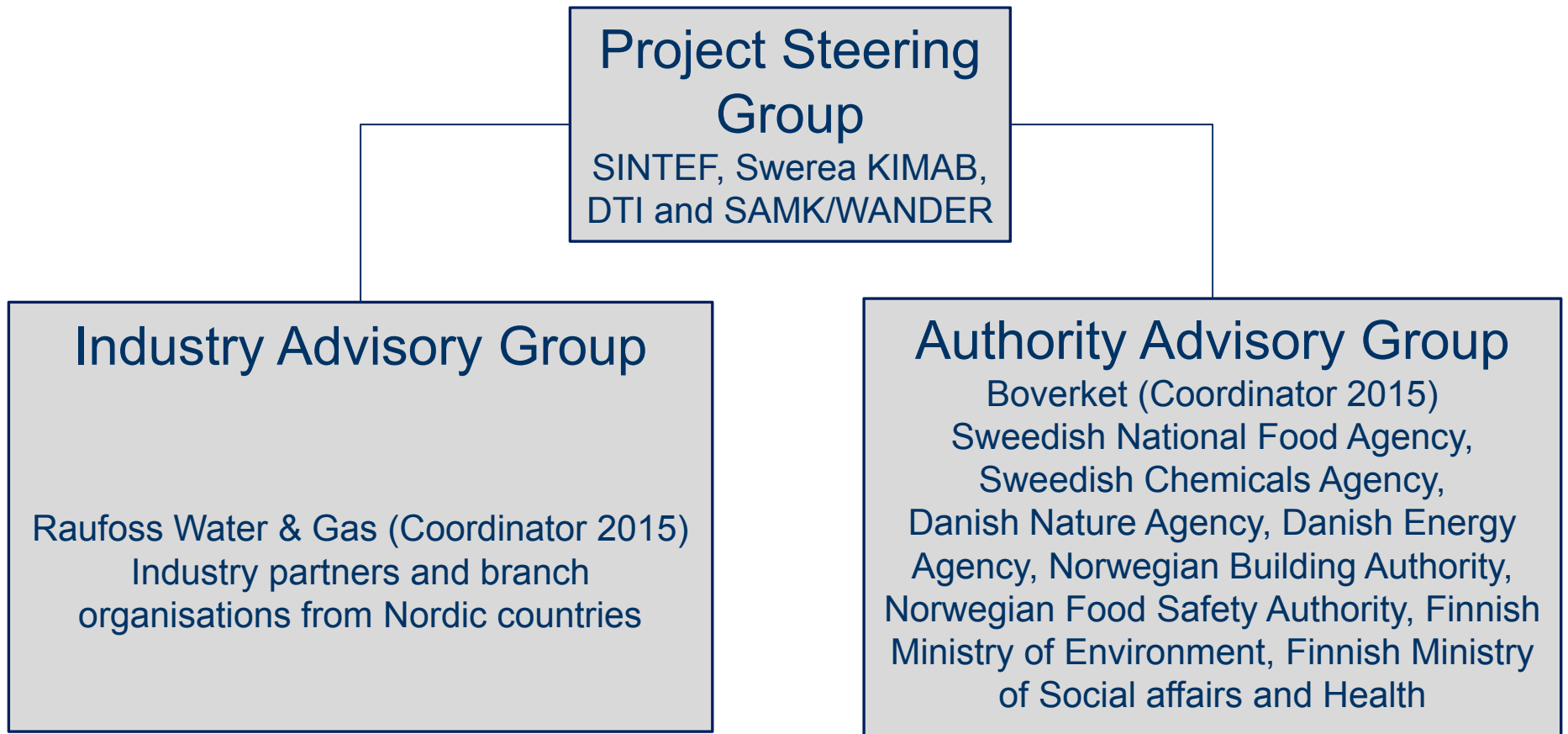
"Maintain water quality"

"Maintain water quality"

Project information

- May 2014 to May 2017
- Financed by Nordic Innovation, Industry and in-kind contribution from all partners
- Managed by a Project Steering Group (SINTEF, Swerea KIMAB, DTI and SAMK/Wander)
- SINTEF is the project coordinator
- Industry and authorities are project partners organised in respective groups.

Project structure



Summary

- Nordic product rules are still used.
- Leaching of Pb, Cd and Ni is "regulated" and basis for product performance criteria is the WHO guideline values.
- The criteria for compliance to the building rules are somewhat different in Nordic countries
- Nordic Innovation project MaiD has gathered all stakeholders to take part in the identifications of key components in an improved more uniform system.