

Alu Circles

Innovation Procurement for
valorisation of aluminium based
sludges from drinking water
plants

12 december 2018



The challenge

RESIDUALS FROM DRINKING WATER TREATMENT: ALUMINUM SLUDGE

- Alum based flocculants are generally applied in drinking water treatment
- Residual sludge (mainly aluminium hydroxide) typically amounts to 20 – 40 ton (dry matter), or 60 – >100 ton (as is) for each Mm³ of treated water
- Present alum sludge volumes generated in Europe amount to >>1 Mton (as is) per annum
- Costs for disposal or treatment are increasing, typically 20 – >80 €/ton (as is)



TURNING WASTE INTO RESOURCES, RECYCLING, 'UPCYCLING': WHAT ARE THE OPTIONS?

- Present routes are still restricted
- Interesting options are on the horizon
- EU policy focuses on an innovative, circular approach

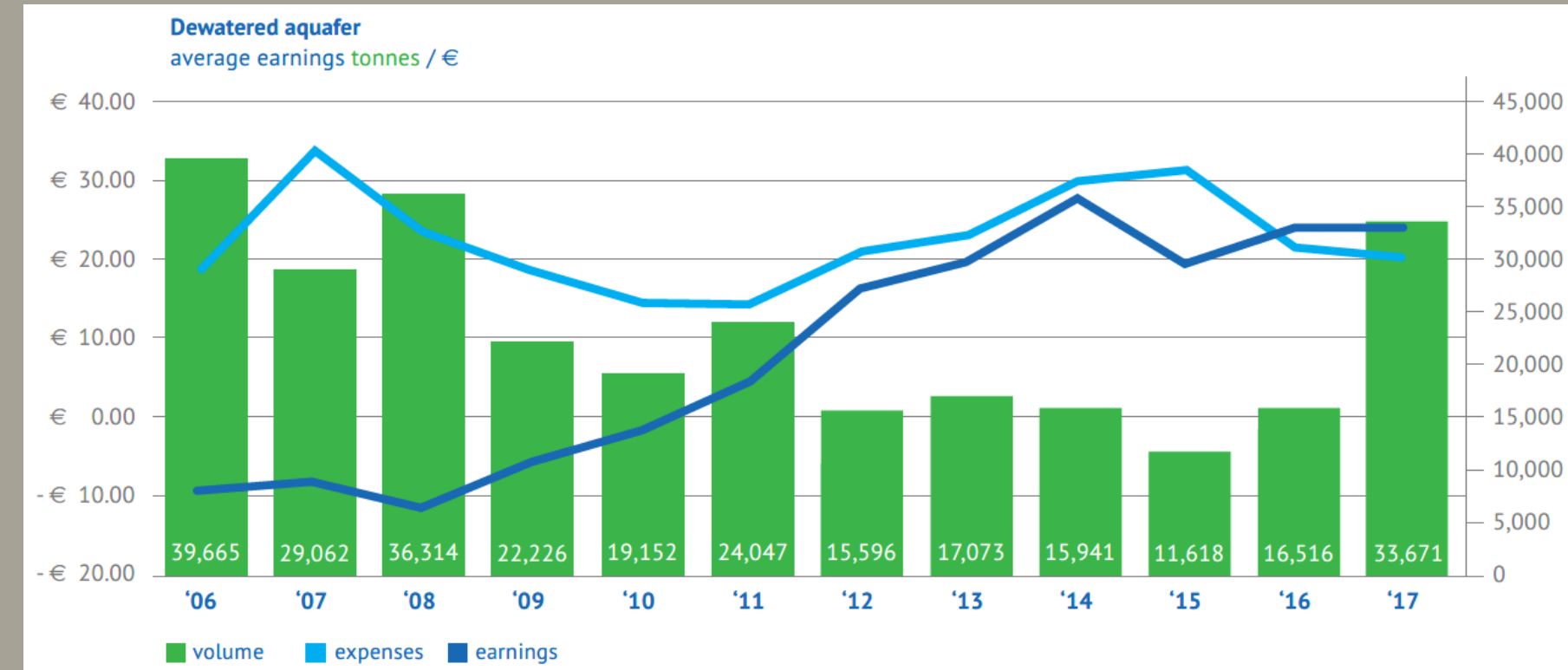
Key factor, joining forces

UPCYCLING OF DRINKING WATER RESIDUALS: REFERENCES

- Upcycling of lime pellets and iron based sludges has already proved very succesful
- A myriad of beneficial applications has been developed over the past decades

JOINING FORCES

- Sharing the procurement power of European water suppliers
- Teaming up with leading players in the field
- Challenging the market for innovative solutions
- Using EU tools dedicated to innovation procurement



Innovation procurement

PRE-COMMERCIAL PROCUREMENT (PCP)

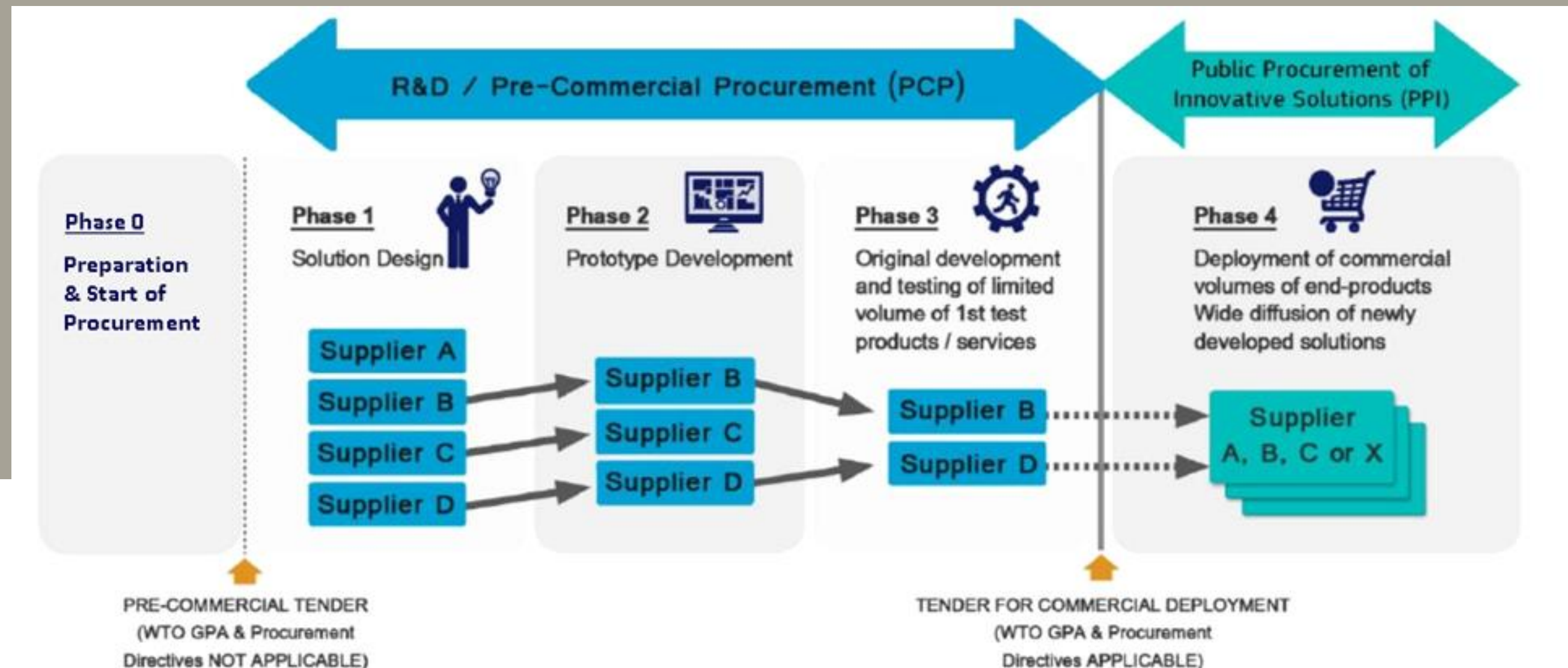
- Staged approach according to *eafip* principles, from solution design up to deployment in practice
- Core Team: AquaMinerals, NL (lead), De Watergroep, BE (plus 1 – 3 other interested water suppliers)
- Procurement Consortium (PC): 20 – 30 water suppliers in Europe or abroad
- Active participation of technology providers

STARTING Q1 2019

- Working title: *Alu Circles*



PCP Alu Circles



Alu Circles, innovation procurement

WHAT IS THE ANTICIPATED OUTCOME?

- Economically feasible options of recycling/upcycling alumn sludges
- Substantial cost savings, ultimately aiming for residuals management at zero cost
- Active contribution to sustainable operations, building a circular economy

ONCE THE ALU CIRCLES CONSORTIUM WILL BE COMPLETE

- Firming up contractual documents (Letter of Intent, Nond-disclosure Agreement, Consortium Agreement)
- Tender to invite technology providers offering their innovative solution
- Selection of options by the Core Team, advised by a team of international experts
- Start of Phase 1, Solution design
- After Phase 1, further selection and go/no-go decision by the Core Team
- If the outcome of Phase 1 is positive, start of Phase 2, etc.

About the initiators

CORE TEAM

- AquaMinerals (www.aquaminerals.com) will be lead procurer in the Core Team
- De Watergroep (www.dewatergroep.be) will be member of the Core Team

SUPPORT TEAM

- Allied Waters (www.alliedwaters.com) and Corvers Procurement Services (www.corvers.nl; www.vtrek.eu) take care of the organization, legal and economic support and communication

