

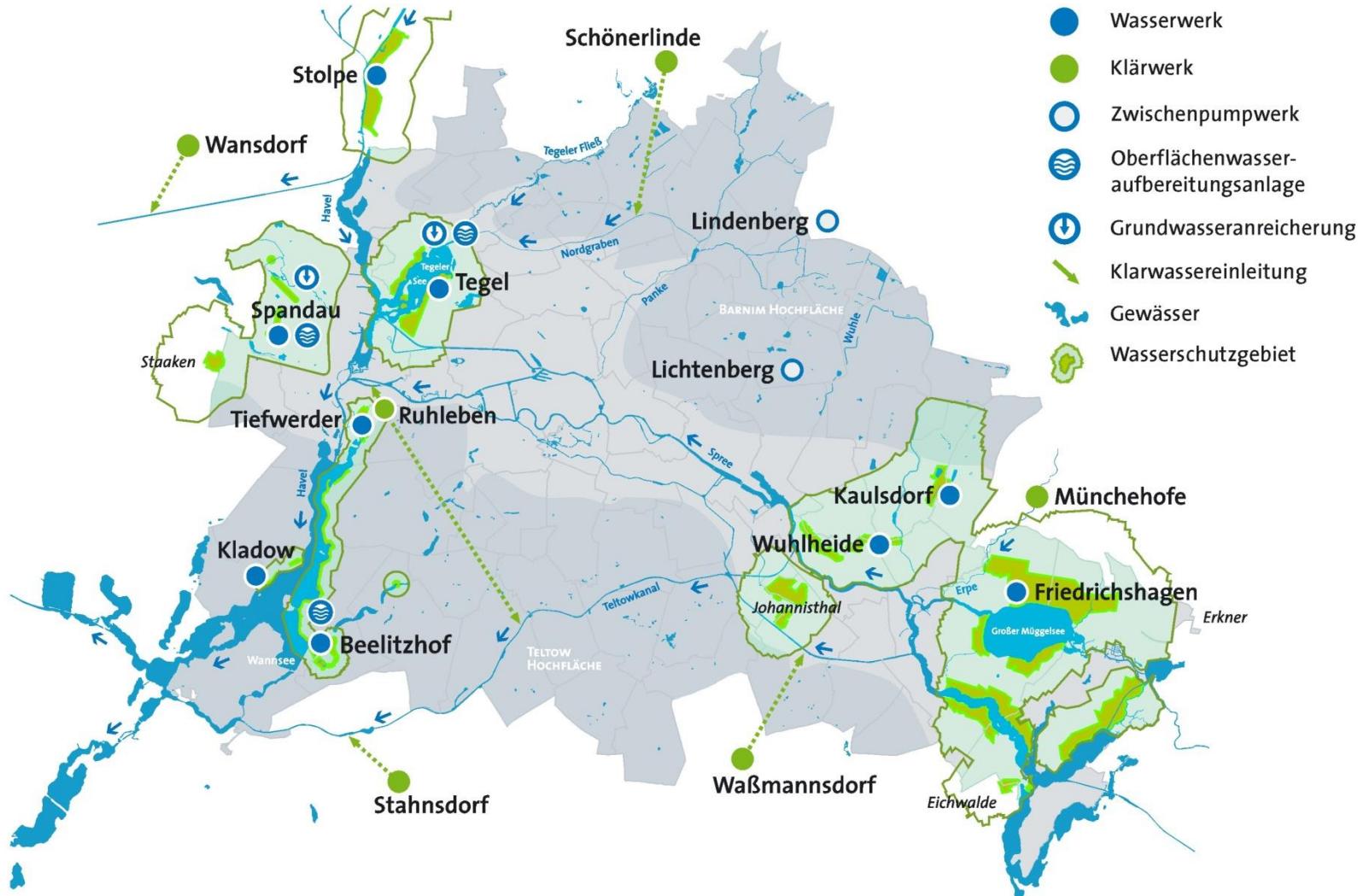


Water is our mission\_  
Environmental protection our passion.

Berliner Wasserbetriebe, Alexander Schitkowsky,



# Waterworks, wastewater treatment plants (WWTPs) and water protection areas of Berlin



area comparison: Berlin 880 km<sup>2</sup>



# Waste water treatment the „elimination“ of phosphorous



- P is mainly present in food and detergents
- P is removed in WWTPs to protect surface water bodies (eutrophication)
- 1.6 to 2.3 t P enter the WWTP Waßmannsdorf daily (households and industry)
- Fossil P - like any fossil resource - is limited
- Hence, the development of recycling strategies and recycling techniques is *smart*



# Research and development\_ problem solved while operating

- **Problem:**

The presence of phosphorous in the sludge will during its treatment often lead to spontaneous crystallisation of chemical compounds. Due to the clogging of pipes and installations, stable operation is not possible.

- **Solution:**

Berliner Wasserbetriebe invented a method, to initiate and control the crystallisation process in a specially designed reactor.

- **Additional benefit:**

Analyses of the deposits showed, that the crystals are mainly struvite, having characteristics of mineral fertilizer.



# Patented\_

## The production of struvite

- The process of struvite precipitation and the reactor have been patented in 2004 under the name air-prex
- WWTP owner or operator may acquire a licence through our business-partner cnp
- The “production-process” and the reactor have been developed and optimised with the aim of producing a marketable fertilizer product



# Product and marketing Berliner Pflanze – the mineral fertilizer



- Struvite is available on the market under the name „Berliner Pflanze“ since 2008
- Berliner Pflanze is distributed within Berlin and Brandenburg region (regional distribution concept)
- It is being sold according to German and European fertilizer regulations as compound fertilizer containing N, P and Mg



household size package (1kg / 2kg)

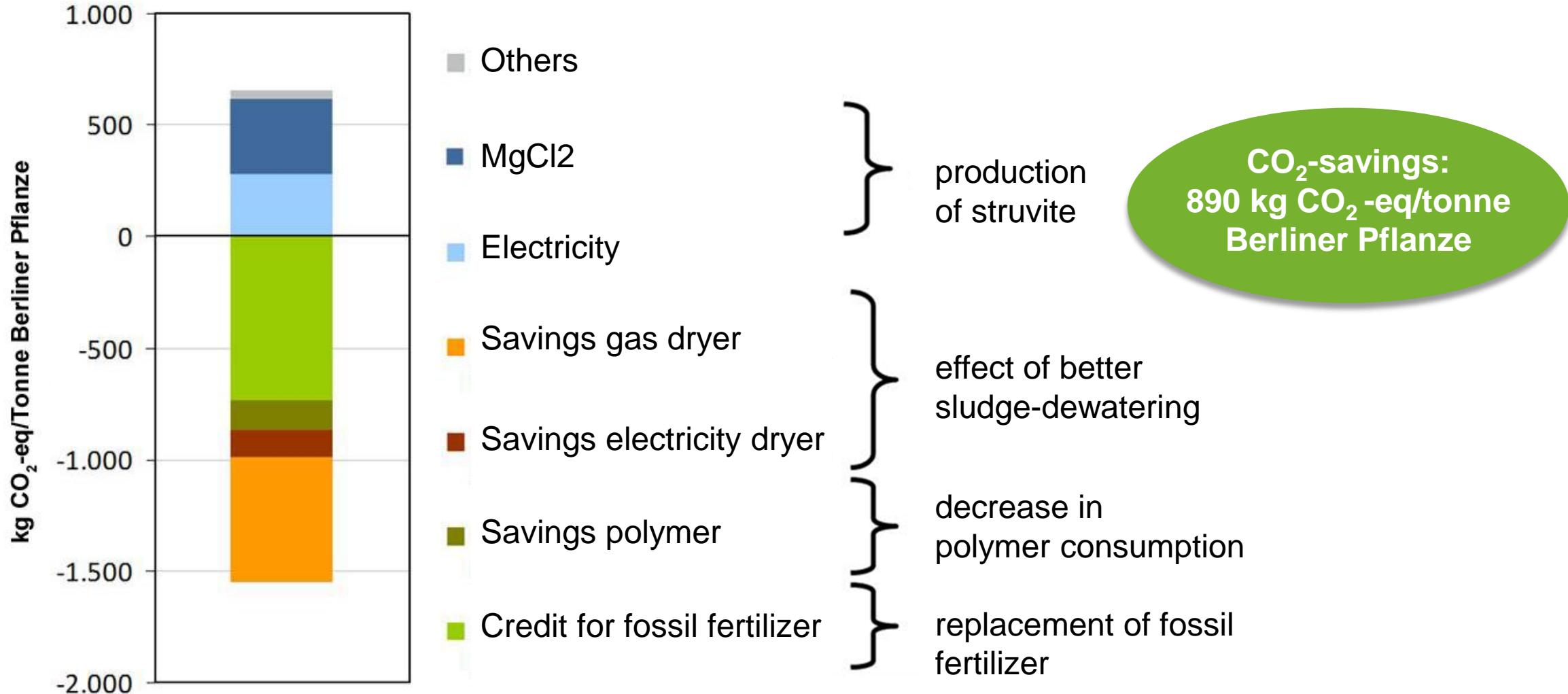


direct sales



farmer/ trader

# carbon footprint: production of Berliner Pflanze avoids CO<sub>2</sub> emmission



# Berliner Pflanze

the mineral fertilizer

A recycling-product  
by Berliner Wasserbetriebe  
Recommended particularly  
for flowering plants

## Content

N	total nitrogen	7 %
P2O5	phosphat	21 %
MgO	magnesium oxide	8 %





***Thank you for your attention!***