

# Assessing the Economics of Industrial Water Use in the German Elbe River Basin

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Water resources will become more scarce in Central Europe, also for industrial users

You are looking for solutions on the demand side to this challenge

You are uncertain whether water prices can be used for industrial water demand management

You wish to clarify the price  
responsiveness of industrial water  
users

Follow three steps to analyse the role  
of water in industry

Theory: Cost functions allow the derivation of industrial water demand

Factor demand can be derived from the production function, although frequently cumbersome



Duality principle allows deriving input demand also from cost function

Translog cost function can be used for  
deriving price and substitution  
elasticities

Empirical work.: 292 manufacturing firms from the Elbe River Basin provided data on their water use

There exists no econometric  
estimation of industrial water demand  
in Germany to date

Industrial water demand is likely to be  
a regular input

292 of about 1600 firms contributed to  
a survey in the Elbe River Basin

Result: Water demand of firms in the sample is responsive to change of water and wastewater price

A translog cost function was estimated  
based on data for 148 firms



Estimated price and substitution elasticities indicate that water is a regular input

Results for sub-samples indicate  
differences among different groups of  
water users