

Pilot project “Shore power connection for the inland navigation sector” of the Wasserstraßen- und Schifffahrtsverwaltung WSV

– *initial experience and prospects*



Introduction

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- Since 2012 projects with shore power
- Head of the pilot project „Shore power for inland shipping“
- Head of the working group „Strategies for implementing shore power“



Agenda

- a. Introduction to the pilot project „ Shore power connection for the inland navigation sector" of the WSV
- b. Initial experiences
- c. Prospects

Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

Motivation:

Existing infrastructure of the shore power at present is insufficient in terms of quantity and quality.

The payment system (prepaid card) is outdated and user unfriendly.

Therefore low use by our customers with high expenditure of the WSV for installation, maintenance and operation



Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV



The aim of the pilot project is:

- to test a possible new technical standard of the WSV for shore power
- record and evaluate the costs for the installation and operation of shore power
- to achieve an increase in acceptance among customers and to increase electricity sales.

Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

Location:

West German canal network



extent:

120 connections are being renewed or newly built at the 20 berths in the West German canal network and one berth on the Rhine

BUNDESWASSERSTRASSEN



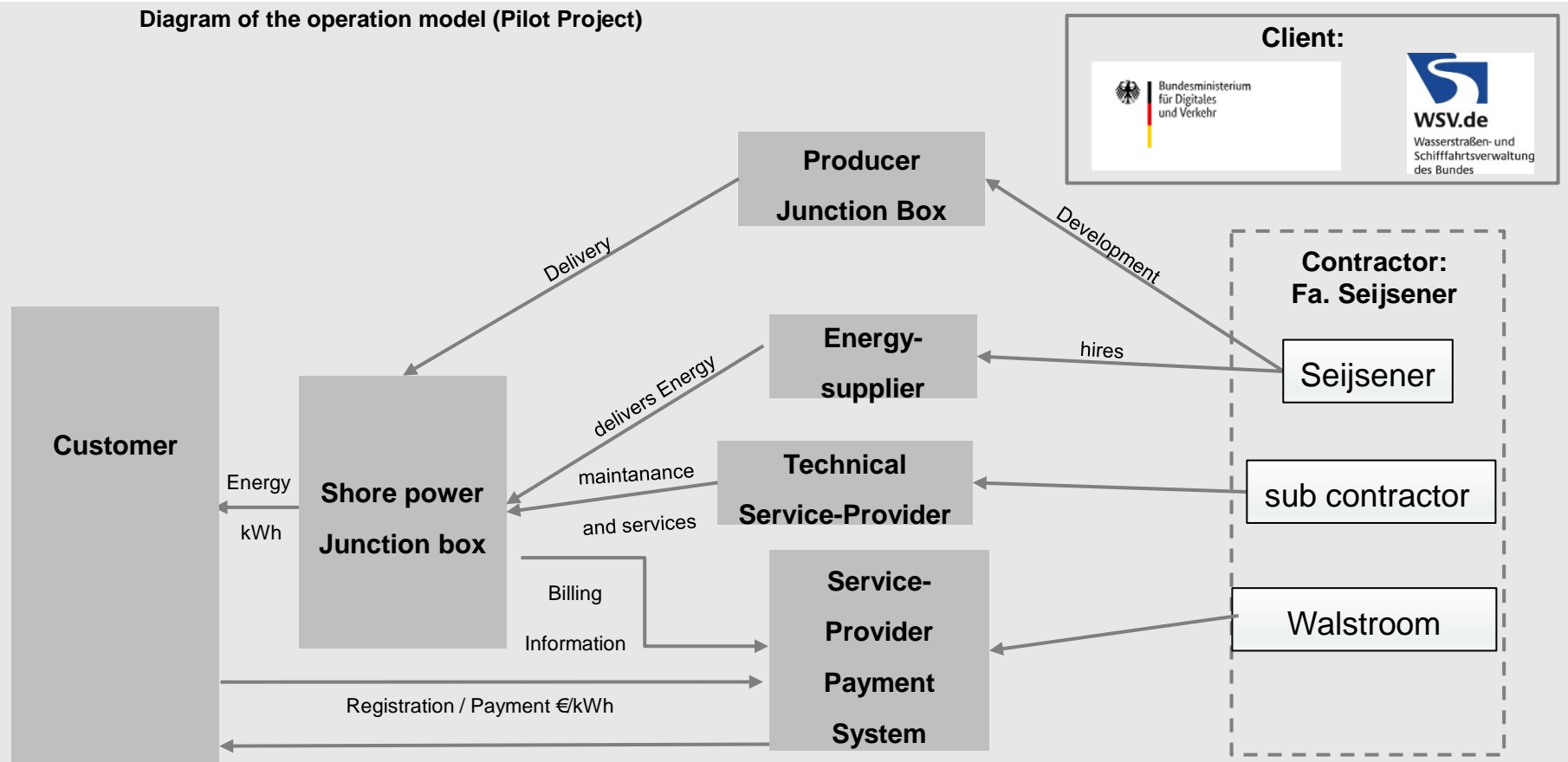
Quelle: Fachstelle für Geoinformationen SüG, Regensburg (Kartographie), zur Verfügung gestellt gemäß GeoNutz
Bundeswasserstraßen, die eine Länge von unter 3 km aufweisen, sind maßstabsgerecht teilweise nicht dargestellt.



Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV



Diagram of the operation model (Pilot Project)



Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

technical characteristics of the junction box:

- Types:
 - single junction box
 - double junction box
 - Satellite
- Variants:
 - commercial shipping
(16 / 32 / 63 A, 400 V, 5 pol.)
 - recreational boating
(16 A, 400 V, 5 pol. + 16 A , 230 V, 3 pol.)



Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

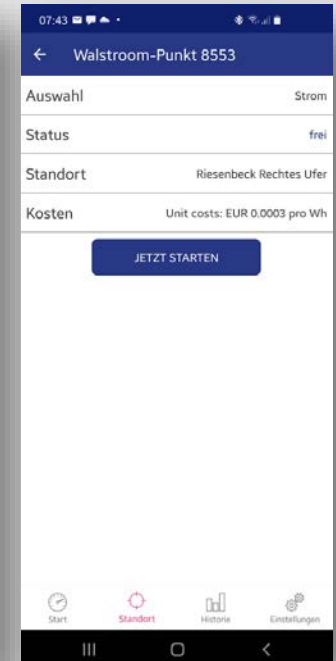
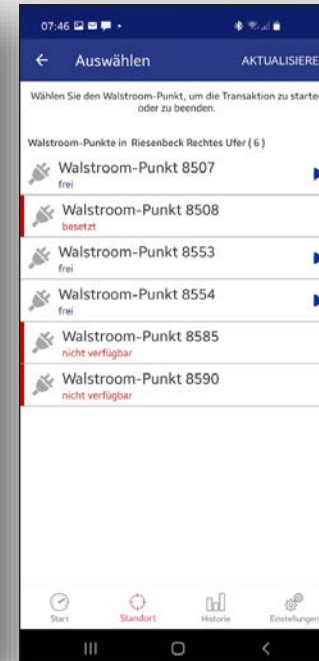
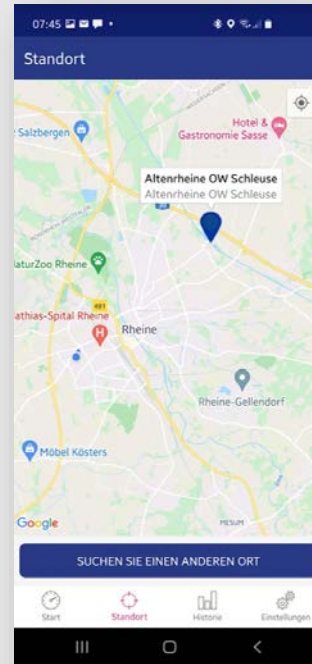
Features of the payment system:

Frontend (user interface)

- Web based: Access with Internet-enabled PC
- Smart-Phone App: Operating systems Android und iOS
- RFID-Card

Payment methods

- cashless, currency independent
- only registered users
- monthly invoice with itemized bill



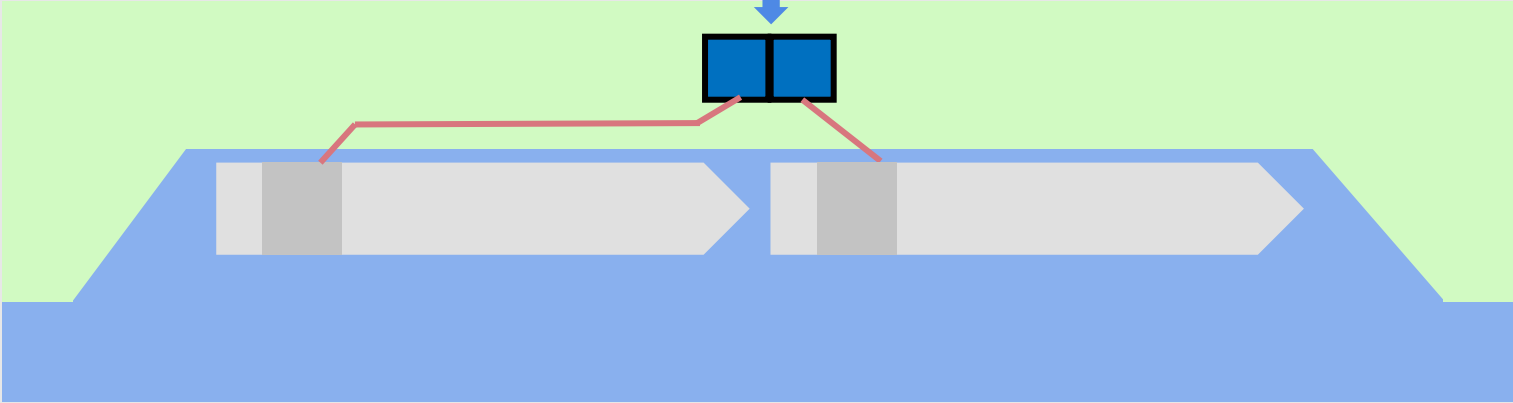
Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

principle of a
Satellite

110 m

110 m

Junction box with two
shore connection units



Introduction to the pilot project „ Shore power connection for the inland navigation sector " of the WSV

principle of a
Satellite

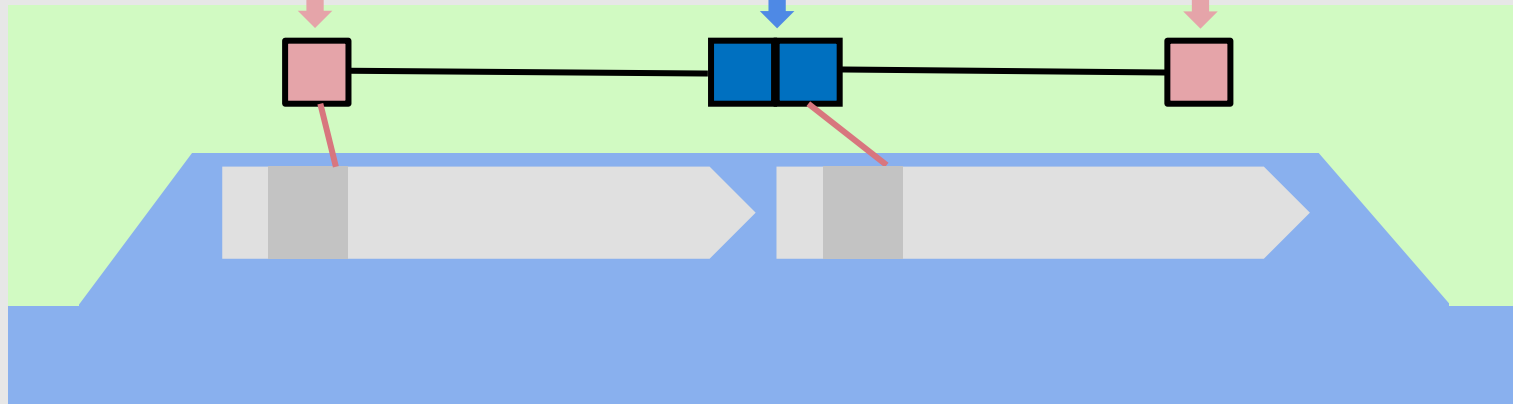
110 m

110 m

Satellite

Junction box with two
shore connection units

Satellite



Initial experiences

Units:

- „Custom made“ junction boxes have the advantage that they are optimally adapted to the needs of our customers and the operator and definitely comply with the legal requirements.
- During design and construction, national regulations such as standards and calibration regulations must be observed.
- The calibration process was complex and time-consuming
- The qualitative creation of the units required an iterative process between client and contractor, which was also time-consuming.
- This means that the development from the start to the finished unit took an extremely long time.

Initial experiances

Payment systems:

- Modern payment systems can be booked on the market
- Billing costs money (Claim-Management etc.)
- Accurate billing in kilowatt hours entails legal consequences, in particular those relating to official calibration.
- The system of backend and frontend becomes so complex that special knowlege is required for the assignment and technical support.

Operation:

- Unfortunately none yet, as the system will only gradually go into operation in the next few month.

Prospects

- The WSV intends to massively expand its range of shore power connections over the next few years.
- The old system can no longer be continued.
- The working group „Strategies for implementing shore power“ is developing a nationwide system based on the findings from the pilot project.
- Various possible solutions for hardware, backend and operation as well as tariffing (e.g. subscription or kWh accurate) and authorisation are currently being discussed.
- A Europe-wide solution, also involving the ports, is being considered and would be desirable

Thank you for your attention!



WSV.de

Wasserstraßen- und
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Further questions?

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