

# TransnetBW – Innovative electricity hub in the heart of Europe

- » Independent transmission system operator
- » 1,205 employees
- » Annual electricity consumption (gross): 74 TWh
- » 3,100 km of power lines
- » 11 GW maximum load in Baden-Württemberg
- » 50 substations
- » 11 m customers
- » 34,600 km² of transmission grid







# SuedLink – The Wind Power Line

- » SuedLink is the largest infrastructure project of the energy transition in Germany
- » High-voltage direct current transmission (HVDC), underground cables
- » Flexible transmission from north to south or south to north







households



**4** GW



**525** kv voltage level



SuedLink will ensure a stable power supply

2



# TenneT at a glance – Safe grid operation between the coast and the Alps

- » 24,500 km of high-voltage power lines
- » 17 connected offshore wind farms
- » 42 m customers
- » 99.99% grid availability and security of supply
- » 17 interconnectors
- » 6,220 employees
- » 23 b € in assets
- » 3.9 b € in annual investments







# SuedLink: A project of common interest

- » So-called "projects of common interests" (PCIs) are EU cross-border energy infrastructure projects
- » They aim to contribute to the functioning of the internal energy market, security of supply, development of renewable energies, and energy efficiency
- » SuedLink is of central importance to the European internal market and will help to ensure that German electricity consumption does not burden the grids of neighbouring countries (e.g. Hungary, Poland, the Czech Republic and Slovakia)
- » PCI projects are eligible to receive EU funding
- » SuedLink will receive around €40 million from the funding pool



# **Asset** Border

# SuedLink



## North

Section A

**Section B** 



## South

**Section C** 

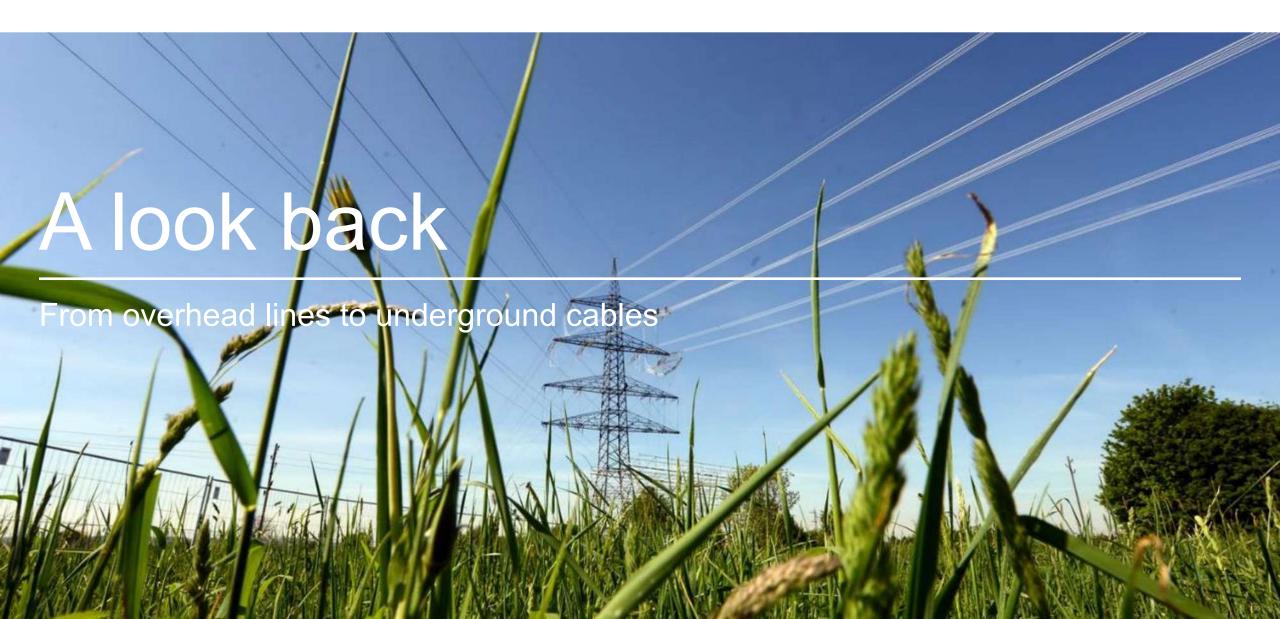
**Section D** 

Section E

TenneT and TransnetBW are each responsible for 50% of the project volume

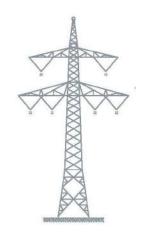
TenneT is the sole owner of the northern part and TransnetBW is the sole owner of the southern part of SuedLink [with the exception of the converter station at the Bergrheinfeld-West grid connection point (NVP)].







# Legislative background: Priority for underground cables





### Original plans call for overhead lines

End of 2015 Both houses of Germany's federal parliament vote to prioritise underground cables for DC projects



As different planning rules apply for underground cables, the Federal Network Agency (BNetzA) issues a methods paper



Environmental planners from the SuedLink consortium (ARGE) provide initial proposals for possible underground cable corridors



Continuation of planning with the goal of having: 100% underground cable

## **New legislation**

» December 2015: The Act Amending Provisions of the Law on Power Line Construction gives general priority to underground cables in the building of new direct current (DC) transmission lines



# A look back: Federal sectoral planning SuedLink's corridor is fixed over 700 km





13.659
Bürgeranfragen

1.216 Briefe 2.794 E-Mails 2.000 Anrufe 7.649 Online-Anfragen











19.000
planungsrelevante
Hinweise

wurden im Rahmen des ersten Genehmigungsverfahrens bearbeitet, geprüft und beantwortet.



106 untersuchte Tierarten

darunter Vögel, Fledermäuse, sonst. Säugetiere, Reptilien, Amphibien, Schmetterlinge und Käfer











# Where we are in Section X & what comes next



# Federal Network Agency

» Federal Network Agency decision on the corridor pursuant to §12 NABEG

# TenneT & TransnetBW

Application for planning approval pursuant to §19 NABEG

## Federal Network Agency

- » Proposal conference / predefinition
- » Investigation framework pursuant to §20 NABEG

# TenneT & TransnetBW

 Submission of plan and documents pursuant to §21 NABEG

## Federal Network Agency

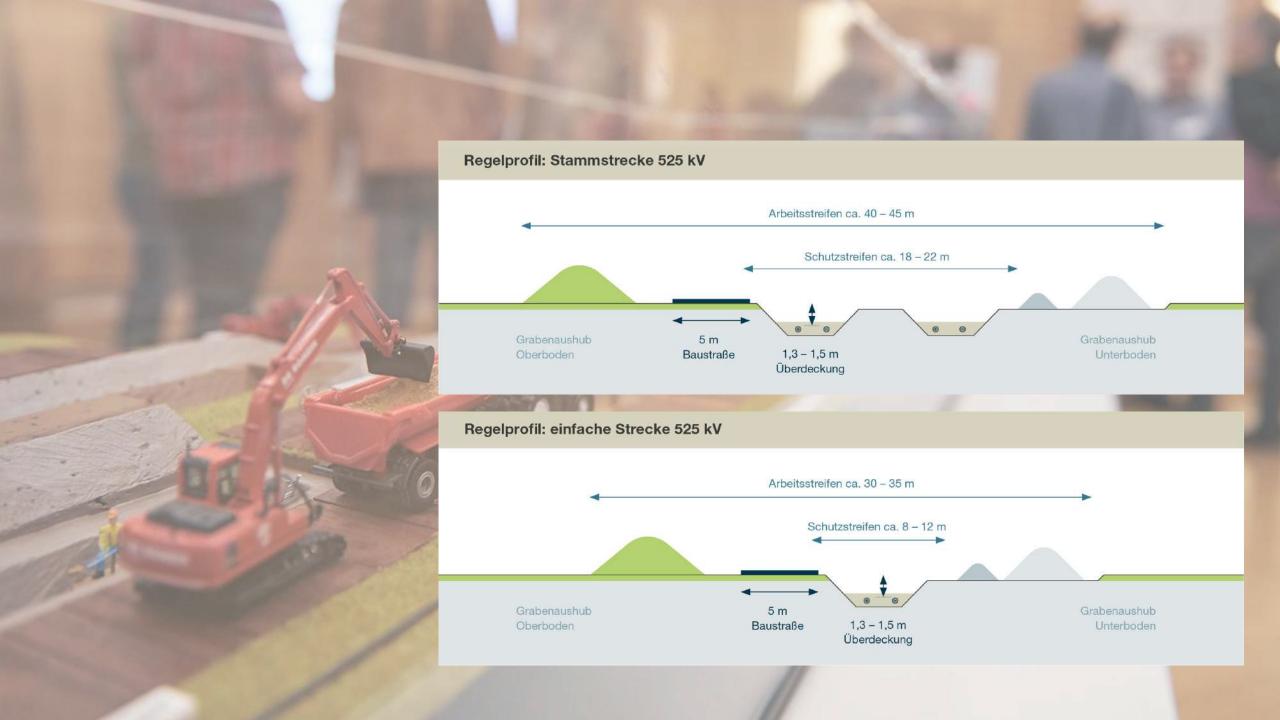
» Hearing procedure pursuant to §22 NABEG

## Federal Network Agency

 Planning approval decision pursuant to §24 NABEG

# TenneT & TransnetBW

» SuedLink construction phase



# SuedLink En Vorheiden von: TRĀNSNET BW

# Possible laying methods: Soil and environmental protection

#### **Open laying method**



Closed laying method (e.g. horizontal directional drilling; microtunnels; E-Power Pipe)



### Other laying methods (e.g. milling method; ploughing method [in testing])





# Open laying method: Construction process











#### Removal of topsoil

- » Excavation of topsoil
- » Temporary storage
- » If necessary: covering with plants and grass; protection from drying out or blowing away

#### Preparation of trench profile

- » Excavation of subsoil
- » If required by law: separate storage of different layers of soil
- » If necessary: installation of temporary water drainage system
- » Insertion of cable bedding

#### Cable pull

- » Transport of cable spool
- » Pulling of cable into the trench



# Open laying method: Construction process





- » Installation of jointing containers
- » Assembly of jointing
- » De-installation of jointing containers
- » Backfilling of the bedding material around the jointing



#### **Backfilling of the trenches**

- » Backfilling of the bedding material around the cable
- » Insertion of protective plates
- » Backfilling of the subsoil
- » Insertion of cable line warning tape
- » Insertion of the rest of the sub- and topsoil
- » Check to see if soil has been properly replaced (compaction test)





#### Recultivation

- » Surface restoration
- » If necessary: fertilization
- » If necessary: new seeding

#### Post-construction land use

- » Agriculture and animal husbandry possible
- » No development or deep-rooted woody plants





# Cable production

- » Cable dimensions:
  - » Total length of both projects: 2,420 kilometres
  - » Length of cable segments: 1,000-2,000 metres
  - » Diameter: approx. 15 cm
  - » Weight: 41 kilograms per metre
- » Cables in production since April 2022 at NKT in Cologne and Karlskrona (Sweden) for Brunsbüttel-Leingarten (DC3)
- » Prysmian is producing the cables for Wilster Bergrheinfeld (DC4) at its locations in Gron, Montereau (both France) and Pikkala (Finland)
- » Once completed, transport by ship and low-bed truck to intermediate cable storage facilities
- » Manufactured 100% with renewable energy





