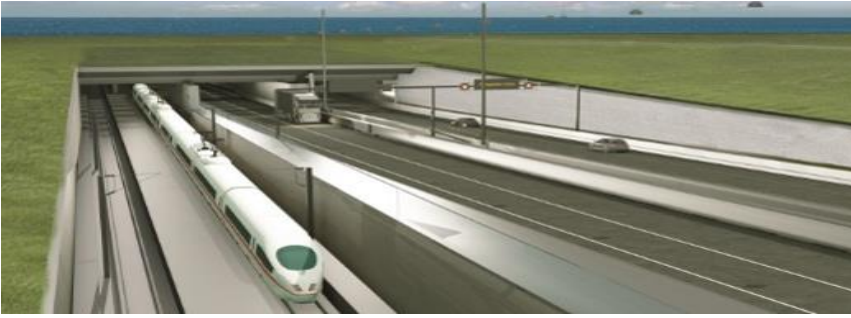


# The Fehmarnbelt tunnel – Combined (road – railway)



EKJ • BULGARIA  
CONSULTING  
ENGINEERS LTD



Fehmarnbelt Fixed Link is a 20 km coast-to-coast road and railway fixed connection in the form of a tunnel structure to connect Denmark and Germany. The railway installations are designed for a speed of 250 km/h and the capacity of the railway line facilitates the passage of 22 intercity trains, 18 regional trains and 78 freight trains daily in both directions. 4-5 km approaches on both sides are part of the project as well.

The Fehmarnbelt Fixed Link will realise the dream of a fixed and direct connection between Scandinavia and Central Europe and will be one of the world's most modern and safe tunnels. Spanning approximately 19km the tunnel will also be the longest combined car and rail tunnel in the world.

EKJ is the Danish partner of the Danish-German consultant group responsible for designing the double track, electrical railway connection across the Fehmarnbelt.

EKJ Bulgaria provided client consultancy and preliminary design of civil works structures, bridges, embankments, sheet piling, drainage, expropriation, estimation of construction cost and Life Cycle Costs, compliance with Danish regulatory requirements including rail standards, rail safety standards and common practices of the Danish rail and civil works sector.

## EKJ Bulgaria's services:

*Preliminary design of all railway components:*

- Civil works structures
- Bridges
- Embankments
- Sheet piling
- Drainage

## Challenges:

- To comply with Danish and German standards and Regulations
- Preparation of the design criteria for the bridge and tunnel consultants
- Difference of nature between German and Danish technical requirements

**Client:** Ingenieurbüro Dipl.-Ing. H. Vössing GmbH, Germany

**Contractor:** EKJ, together with Bossen&Hansen, was subconsultant to Ingenieurbüro Dipl.- Ing. H. Vössing GmbH (Germany)

**Period:** 2009-2011

**Size:** 30 km railway

**Contract type:** Preliminary design

