

<u>Name</u>	RÜTER Fredrik
<u>Date of Birth</u>	8 May 1960
<u>Nationality</u>	Swedish
<u>Position</u>	Senior Consultant
<u>Languages</u>	Swedish: mother tongue Danish and Norwegian: good understanding conversation and reading English: fluent (business, conversation, reading, writing) German, Spanish and French: very very basic conversation
<u>Coordinates</u>	FRECC Reimersholmogatan 59 SE-117 40 Stockholm SWEDEN +46 76 555 61 05 fredrik.ruter@frecc.se

Summary CV

- In HVDC and Power Cable industry since 1986
 - Extensive Technical experience of submarine and underground HV cables, XLPE, MI, LPOF
 - Extensive experience from production, installation and testing of HV cables
 - Served as Chairman for Cigré Study Committee B1 (Insulated Cables)
 - Extensive Line Management experience (R&D, Technology, QA, Sales, Consultancy Services)
 - Certified QA System Auditor
 - Trained EMS Auditor (Environmental Management System)
 - Experience from Project Development
 - Certified Project Manager (PMI)
 - Served as Project Manager for large Projects (>100 MEUR)
 - Extensive international experience and network
 - Senior Consultant in several cable projects, producing technical specification, partaking in procurement and selection process, technical support to project manager during implementation, acting company representative on- and offshore et cetera
 - Experience of assisting cable projects in Environmental permit process, including environmental court hearings
 - Familiar with testing facilities in Europe
 - Engineering Manager in large submarine HVDC Projects
 - Extensive experience as Company rep to offshore cable installation and repair operations
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Academic Degrees

1986 - 1987	Master of Science, Department of Applied Physics, Stanford University (USA)
1981 - 1985	Master of Science Engineering Physics, Teknisk Fysik, Lund Institute of Technology (SWEDEN)

Employment Record and Positions

15 Jan 2016 -	Engineering Manager NorthConnect HVDC Project Norway - Scotland
1 Oct 2011 – Dec 2012	Engineering Manager HVDC Project Norway to Germany, Statnett SF (Oslo NORWAY)
1 Feb 2011 – Sept 2011	Technical Director NorGer HVDC Cable Project NorGer KS (Kristiansand, NORWAY)
Feb 2011 -	CEO and Senior Consultant FRECC AB (Stockholm SWEDEN)
July 2010 – Jan 2011	Head of Business Area Grid Connections Vattenfall Power Consultant (Stockholm SWEDEN)
Feb 2009 – June 2010	Director International Power Networks Vattenfall Power Consultant (Stockholm SWEDEN)
Jan 2004 – Feb 2009	Project Manager (for HVDC Submarine Cables Projects, NorNed and NordE.ON 1 = BorWin 1) ABB High Voltage Cables (Karlskrona SWEDEN)
Aug 2001 – Dec 2004	Market and Sales Manager for HVDC Cables ABB High Voltage Cables (Karlskrona SWEDEN)
Sept 1999 – July 2001	Cable Expert and Business Development TransÉnergieUS (Westboro Massachusetts USA)
Oct 1997 – Aug 1999	Technical Manager ABB High Voltage Cables (Karlskrona SWEDEN)
Sept 1996 – Sept 1997	Project Manager (HVDC Submarine Cable Project Bakun) ABB High Voltage Cables (Karlskrona SWEDEN, and Kuching MALAYSIA)
Jan 1995 – Sept 1996	Quality Manager ABB High Voltage Cables (Karlskrona SWEDEN)
Sept 1992 – Dec 1994	R&D Manager ABB High Voltage Cables (Karlskrona SWEDEN)
Jan 1991 – Aug 1992	Electrical Design Manager HVDC Thyristor Valves ABB Power Systems (Ludvika SWEDEN)

April 1988 – Dec 1990 Mechanical Design Manager HVDC Thyristor Valves
ABB Power Systems (Ludvika SWEDEN)

Aug 1986 – March 1988 Development Engineer HVDC Thyristor Valves
ABB Power Systems (Ludvika SWEDEN)

Professional Experience

June 2015 - Engaged by Ellevio (former Fortum) as project engineer for 220 kV cable project

April 2015 – Engaged by Svenska kraftnät to prepare technical specification for replacement project of Konti Skan electrode cable.

Jan 2015 - Engaged by Svenska kraftnät as project engineer for submarine cable project Edsviken.

Oct 2014 - Engaged by Svenska kraftnät for preparing technical specifications and partake in evaluation and selection process for replacement of 400 kV LPOF cables between Sweden and Denmark.

Aug 2014 - Engaged by Svenska kraftnät as Project Manager for submarine cable project to Gotland.

Aug 2014 - Engaged by Svenska kraftnät as cable expert in joint feasibility study for new HVDC link between Sweden and Germany (50hertz).

May 2014 - Engaged by Fichtner (DE) as cable consultant for HVDC cable project in far east.

March 2014- Dec 2014 Engaged by Svenska Kraftnät for preparing the Technical Specification for a planned HVDC submarine cable to Gotland.

March 2014 - Engaged by Svenska kraftnät to make a Risk study for installation of 400 kV submarine replacement cables between Sweden and Denmark.

Dec 2013- March 2014 Engaged by Fortum as independent investigator for 220 kV cable fault in tunnel.

Dec 2013 – Engaged by Fortum for technical support in developing submarine cable section in 220 kV circuit in Stockholm

Sept – Dec 2013 Engaged by Fortum as independent investigator of 220 kV cable fire in multipurpose tunnel in central Stockholm

March – April 2013 Company (Fingrid) representative for the repair mission of Fennoskan 1 cable.

Feb 2013 - Engaged by Svenska Kraftnät assisting in preparing Technical Guidelines.

Jan 2013 - Producing the Technical Specifications for Svenska Kraftnät Edsviken Submarine Cable Project.
Assigned as Health and Safety Officer for development phase. Lead engineer in purchasing phase. Cable expert for execution phase.

July 2012 – Sept 2013	Engaged as technical expert in Svenska Kraftnät for a planned HVDC cable to Gotland.
June 2012 -	Engaged as technical expert in Svenska Kraftnät project South West Link.
April 2012	Third party inspector for Final Inspection of Svenska Kraftnät installation of 220 kV cable circuits in tunnel.
Dec 2011 – Dec 2014	Main Consultant for the cable portion during construction of the HVDC Project EstLink2. Responsible also for subcontracted Back-up Consultants. Company rep onboard for offshore installation and jointing.
Oct 2011 – Dec 2012	Engineering Manager for the HVDC Project between Norway and Germany.
August 2011 -	Producing Technical Specifications for Svenska Kraftnät 420 kV HVAC XLPE Cable Project Hagby – Anneberg, Stockholm, and leading technical evaluation of tenders. Active part in implementation phase as cable expert.
July 2011	Third party inspector for Final Inspection of Svenska Kraftnät installation of 220 kV cable circuits in tunnel.
Feb 2011 – Sept 2011	Technical Director for the development of NorGer HVDC Link, responsible for HVDC Systems including converters, cables and OH lines.
Jan 2011 -	Part of the Owner’s Engineer team (Svenska Kraftnät) managing and controlling the progress of the Contractor for NordBalt HVDC Cables (ABB)
April 2010 – Dec 2011	Main author of the Specification for the HVDC Cable System (including installation) for SouthWest HVDC Link. Assisting Svenska Kraftnät in evaluating tenders and negotiating with tenderers.
Sept 2006 – Aug 2010	Chairman of Cigré Study Committee B1 (Insulated Cables), managing the technical work of some 200 technical experts from all continents. Member of Cigré Technical Committee.
Dec 2009 – Dec 2010	Responsible for Vattenfall contract with Svenska Kraftnät to write the specifications for NordBalt HVDC Link, and also to assist in evaluating tenders and negotiating with tenderers. Main author of the Specification for the HVDC Cable System (including installation) for NordBalt.
June 2009 – Jan 2011	Project Director for Vattenfall’s feasibility study for 500 kV HVDC submarine cable scheme in Chile. Author of the Cable System Technical Reports, as well as review of Survey and Installation Reports.

May 2009 – Jan 2011	Project Director for Vattenfall's feasibility study for interconnecting Romania and Turkey by means of an HVDC Link utilising a cable in the Black Sea.
Oct 2007 – Feb 2009	Project Manager for the NordE.ON 1 (later named BorWin 1) ABB cables. The undertaking was turnkey, including qualifying, testing, manufacturing, shipping, installing some 250 km of submarine cables, and 150 km of landcables, for the importing 400 MW from an offshore wind farm in the North Sea. The cables are of extruded DC type for VSC converters. Responsible for contracting the two major Installation Contractors (Land Cable Installation, and Marine Cable Installation)
Sept 1999 – July 2001	Assisting TransÉnergieUS (a daughter company of Hydro Quebec) in developing merchant transmission projects (VSC converters and extruded DC cables technologies), by financial modelling, and permit documentation. Co-author of Cable Technical Specification for Cross Sound Cables. Responsible for and main author of the Cable System Technical and Installation Specifications for Murraylink.
Feb and March 2001	Owner's Representative in the geothermal survey for MurrayLink (Australia). The HVDC land cable route is 160 km long.
Jan and Feb 2001	Leading a site activity for the HVDC cables in DirectLink (Australia), developing the mechanisms for snaking of the land cables installed in troughs.
1999 - 2003	Convenor of Cigré Working Group 21-01 producing the Technical Brochure 219, Testing of DC Cable Systems with Extruded Cables up to 250 kV.
Oct 1997 – Aug 1999	Technical Manager for the ABB HV Cable operation in Karlskrona (SWEDEN) included managing the development efforts, the material laboratory, the HV laboratory, the engineering in sales and projects, and the technical market communication.
Sept 1996 – Sept 1997	Project Manager for the Bakun cables (Malaysia). The ABB undertaking was turn-key, including qualifying, testing, manufacturing, surveying, shipping, installing some 210 km of submarine cables. The project was stopped after type testing and start-up of production, due to political and financial problems in Malaysia. The cables were of the massimpregnated (MI) type for LCC converters.
Jan 1993 – Dec 1994	Leading the ABB development efforts for HVDC cables, specifically so for the development of extruded DC cables for VSC converters.
Nov 1992 – Aug 1994	Technical Manager (ABB) for the cable turnkey supply to Baltic Cable HVDC project (interconnecting Sweden and Germany). Contractor Representative onboard for the laying of the submarine cables.

Training and Education

Sept 2015	HS Training for Working with Electricity (ESA 14)
Sept 2015	Security and Safety for working in tunnels
May 2013	Health & Safety Officer for development phase (BAS-P)
May 2012	Personal Survival Techniques (for offshore personnel)
Nov 2004 – April 2005	Certified Project Manager (PMI model)
March 1996	Auditor for ISO 14001 (Environmental Management Systems)
March 1995	Certified Auditor for ISO 9001 (QA Management Systems)
Sept 1994 – June 1995	Higher Management Training by MiL, Management i Lund
Aug 1979 – Aug 1982	Reserve Officer Swedish Military Coast Defense
December 1979	License for Master of Small Vessels
