

HVDC PROJECTS LISTING

Prepared for the
DC and Flexible AC Transmission Subcommittee
of the
IEEE Transmission and Distribution Committee
by the
Working Group on HVDC and FACTS Bibliography and Records

SYSTEM / PROJECT	HVDC SUPPLIER	YEAR COMMISSIONED	POWER RATING (MW)	DC VOLTAGE (kV)	LINE/ CABLE (km)	MERCURY/ THYRISTOR/ TRANSISTOR	LOCATION
MOSOW-KASHIRA (retired from service)	RUSSIAN	1951 ()	30	±100	100	MERC	RUSSIA
GOTLAND I (retired from service)	ASEA	1954 (1986)	20	±100	96	MERC	SWEDEN
GOTLAND EXTENSION (retired from service)	ASEA	1970 (1986)	30	±150	96	THY	SWEDEN
GOTLAND II	ASEA	1983	130	150	100	THY	SWEDEN
GOTLAND III	ASEA	1987	260	±150	103	THY	SWEDEN
GOTLAND HVDC LIGHT	ABB	1999	50	±60	70	TRA	SWEDEN
ENGLISH CHANNEL (retired from service)	ASEA	1961 ()	160	±100	64	MERC	ENGLAND-FRANCE
VOLGOGRAD-DONBASS	MINISTRY FOR ELECTROTECHNICAL INDUSTRY OF USSR	1962/65	720	±400	473	MERC/THY	RUSSIA
NEW ZEALAND HYBRID INTER ISLAND LINK	ASEA	1965	600	±250	609	MERC	NEW ZEALAND
NEW ZEALAND HYBRID INTER ISLAND LINK	ABB	1992	1240	+270/-350	612	THY	NEW ZEALAND
NEW ZEALAND HYBRID INTER ISLAND LINK		PLANNED				THY	NEW ZEALAND
KONTI-SKAN 1	ASEA	1965	250	±250	180	MERC	DENMARK-SWEDEN
KONTI-SKAN 1	AREVA	2005	250	±250	180	THY	DENMARK-SWEDEN
KONTI-SKAN 2	ASEA	1988	300	285	150	THY	DENMARK-SWEDEN
SAKUMA (retired from service)	ASEA	1965 ()	300	2x125	B-B	MERC	JAPAN
SARDINIA (retired from service)	ENGLISH ELECTRIC	1967 ()	200	200	413	MERC	ITALY
VANCOUVER I	ASEA	1968/69	312	±260	74	MERC	CANADA
VANCOUVER II	GENERAL ELECTRIC	1977/79	370	±280	74	THY	CANADA
PACIFIC INTERTIE	ASEA/GE	1970	1440	±400	1362	MERC	U.S.A
PACIFIC INTERTIE	ASEA/GE	1982	1600	±400	1362	MERC	U.S.A
PAC INTERTIE UPGRADE	ASEA	1985	2000	±500	1362	THY	U.S.A
PACIFIC INTERTIE EXPANSION	BROWN BOVERI	1989	3100	±500	1362	THY	U.S.A
KINGSNORTH (retired from service)	ENGLISH ELECTRIC	1972 (1987)	640	±266	82	THY	UNITED KINGDOM
EEL RIVER	GENERAL ELECTRIC	1972	320	±80	B-B	THY	CANADA
NELSON RIVER 1	ENGLISH ELECTRIC/GEC ALSTHOM	1973	1854	±463	890	MERC	CANADA
NELSON RIVER 1	GEC ALSTHOM	1992/93	1854	±463	890	MERC/THY	CANADA
NELSON RIVER 1	SIEMENS	2001/02	1854	±463	890	THY	CANADA
NELSON RIVER 2	AEG/BBC/SIEMENS	1978	900	±250	940	THY	CANADA
NELSON RIVER 2	AEG/BBC/SIEMENS	1985	2000	±500	940	THY	CANADA
SKAGERRAK I	ASEA	1976	275	±250	240	THY	NORWAY-DENMARK
SKAGERRAK II	ASEA	1977	275	±250	240	THY	NORWAY-DENMARK
SKAGERRAK III	ABB	1993	500	±350	240	THY	NORWAY-DENMARK
SHIN-SHINANO 1	HITACHI/TOSHIBA/NISSHIN	1977	300	125	B-B	THY	JAPAN
SHIN-SHINANO 2	HITACHI/TOSHIBA/NISSHIN	1992	300	125	B-B	THY	JAPAN
SQUARE BUTTE	GENERAL ELECTRIC	1977	500	±250	749	THY	U.S.A
DAVID A. HAMIL	GENERAL ELECTRIC	1977	100	±50	B-B	THY	U.S.A
CAHORA-BASSA	AEG/BBC/SIEMENS	1977/78/79	1920	±533	1420	THY	SOUTH AFRICA
C.U.	ASEA	1979	1000	±400	701	THY	U.S.A
HOKKAIDO-HONSHU	ASEA	1979	150	125	167	THY	JAPAN
HOKKAIDO-HONSHU	HITACHI/TOSHIBA	1980	300	250	167	THY	JAPAN
HOKKAIDO-HONSHU	HITACHI/TOSHIBA	1993	600	±250	167	THY	JAPAN
ACARAY	SIEMENS	1981	50	±25.6	B-B	THY	PARAGUAY-BRAZIL
VYBORG	MINISTRY FOR ELECTROTECHNICAL INDUSTRY OF USSR	1981	355	1X170(±85)	B-B	THY	RUSSIA-FINLAND
VYBORG	MINISTRY FOR ELECTROTECHNICAL INDUSTRY OF USSR	1982	710	2x170	B-B	THY	RUSSIA-FINLAND
VYBORG	MINISTRY FOR ELECTROTECHNICAL INDUSTRY OF USSR	1984	1065	3x170	B-B	THY	RUSSIA-FINLAND
VYBORG	MINISTRY FOR ELECTROTECHNICAL INDUSTRY OF USSR	1999	4x405	±85	B-B	THY	RUSSIA-FINLAND
ZHOU SHAN PROJECT		1982	50	100	42	THY	CHINA
INGA-SHABA	ASEA/GE	1982/83	560	±500	1700	THY	ZAIRE
DUERNROHR 1 (retired from service)	AEG/BBC/SIEMENS	1983 (1997)	500	145	B-B	THY	AUSTRIA
EDDY COUNTY	GENERAL ELECTRIC	1983	200	82	B-B	THY	U.S.A
CHATEAUGUAY	BBC/SIEMENS	1984	2x500	2x140.6	B-B	THY	CANADA-U.S.A.
OKLAUNION	GENERAL ELECTRIC	1984	200	82	B-B	THY	U.S.A
ITAIPIU 1	ASEA	1984	1575	±300	807	THY	BRAZIL
ITAIPIU 1	ASEA	1985	2383	±300	807	THY	BRAZIL
ITAIPIU 1	ASEA	1986	3150	±600	807	THY	BRAZIL
ITAIPIU 2	ASEA	1987	3150	±600	818	THY	BRAZIL
BLACKWATER	BBC	1985	200	57	B-B	THY	U.S.A
SACOI	CGEE/ALSTHOM	1985	200	200	415	THY	ITALY-CORSICA-SARDINIA
SACOI THREE TERMINAL	CGEE/ALSTHOM	1993	300	±200	385	THY	ITALY-CORSICA-SARDINIA
HIGHGATE	ASEA	1985	200	±56	B-B	THY	U.S.A
MADAWASKA	GENERAL ELECTRIC	1985	350	130.5	B-B	THY	CANADA
MILES CITY HVDC SYSTEM (MCCS)	GENERAL ELECTRIC	1985	200	82	B-B	THY	U.S.A
BROKEN HILL	ASEA	1986	40	2x17 (±8.33)	B-B	THY	AUSTRALIA
INTERMOUNTAIN POWER PROJECT (I.P.P.)	ASEA	1986	1920	±500	785	THY	U.S.A
CROSS CHANNEL BP 1+2	CGEE-ALSTHOM/GEC-ALSTHOM	1985/86	2000	±270	70	THY	FRANCE-U.K.
DES CANTONS-COMFERFORD	GENERAL ELECTRIC	1986	690	±450	172	THY	CANADA-U.S.A.
QUEBEC-NEW ENGLAND	GE/ABB	1986/92	2250	±450	1500	THY	CANADA-U.S.A.
VIRGINIA SMITH	SIEMENS	1987	200	50	B-B	THY	U.S.A
GESHA (GEZHOUBA-SHANGHAI)	ABB/SIEMENS	1989	600	500	1000	THY	CHINA
GESHA (GEZHOUBA-SHANGHAI)	ABB/SIEMENS	1990	1200	±500	1046	THY	CHINA
VINDHYACHAL	ASEA	1989	500	2x69.7	B-B	THY	INDIA
McNEILL	GEC ALSTHOM	1989	150	42	B-B	THY	CANADA
FENNO-SKAN	ABB/ALCATEL	1989/98	572	±400	233	THY	FINLAND-SWEDEN
FENNO-SKAN 2		PLANNED 2010	800	500	233	THY	FINLAND-SWEDEN
BARSOOR LOWER SILERU	BHEL	1989/91	100	±200	196	THY	INDIA
BARSOOR LOWER SILERU	BHEL	FUTURE	400			THY	INDIA
RIHAND-DELHI	ABB/BHEL	1991	750	500	814	THY	INDIA
RIHAND-DELHI	ABB/BHEL	1992	1500	±500	814	THY	INDIA
NICOLET TAP	ASEA	1992	2000				CANADA
SAKUMA	HITACHI/TOSHIBA/MITSUBISHI/NISSHIN	1993	300	±125	B-B	THY	JAPAN
ETZENRICH (retired from service)	SIEMENS	1993 (1997)	600	160	B-B	THY	GERMANY-CZECH REPUBLIC
VIENNA SOUTH-EAST (retired from service)	SIEMENS	1993 (1997)	600	145	B-B	THY	AUSTRIA-HUNGARY
URUGUAIANA	TOSHIBA	1994	50	15	B-B	THY	BRAZIL-ARGENTINA
BALTIC CABLE	ABB	1994	600	±450	261	THY	SWEDEN-GERMANY
WELSH	SIEMENS	1995	600	162	B-B	THY	U.S.A
KONTEK	ABB/NKT CABLES	1995	600	400	171	THY	DENMARK-GERMANY
HAENAM-CHEJU	GEC ALSTHOM	1997	300	±180	101	THY	SOUTH KOREA
CHANDRAPUR-RAMAGUNDUM	GEC ALSTHOM	1997/98	1000	2x205	B-B	THY	INDIA
CHANDRAPUR-PADGHE	ABB	1998	1500	±500	736	THY	INDIA
LEYTE-LUZON	ABB/MARUBENI	1998	440	350	455	THY	PHILIPPINES
VISAKHAPATNAM	GEC ALSTHOM	1998	500	205	B-B	THY	INDIA
MINAMI-FUKUMITZU	HITACHI/TOSHIBA	1999	300	125	B-B	THY	JAPAN
VIZAG 1	GEC ALSTHOM	1999	500	205	B-B	THY	INDIA
VIZAG 2	ABB	2005	500	±88	B-B	THY	INDIA
KAALAMO		PLANNED 1999	40	20	B-B	THY	FINLAND
NORTH-SOUTHEAST		PLANNED 1999	1000			THY	BRAZIL
SWEPOL LINK	ABB	2000	600	±450	254	THY	SWEDEN-POLAND
DIRECTLINK	ABB	2000	3 x 60	±80	59	TRA	AUSTRALIA
KII CHANNEL	HITACHI/TOSHIBA/MITSUBISHI	2000	1400	±250	102	THY	JAPAN
KII CHANNEL		FUTURE	2800	±500	102	THY	JAPAN
GARABI 1	ABB	2000	1100	±70	B-B	THY	ARGENTINA-BRAZIL
GARABI 2	ABB	2002	2000	±70	B-B	THY	ARGENTINA-BRAZIL
RIVERA	GEC ALSTHOM	2000	70	20	B-B	THY	URUGUAY-BRAZIL
GRITA	PIRELLI/ABB	2001	500	400	316	THY	GREECE-ITALY
TIAN-GUANG	SIEMENS	2001	1800	±500	960	THY	CHINA
HIGASHI-SHIMIZU	HITACHI/TOSHIBA	2001	300	125	B-B	THY	JAPAN
MOYLE INTERCONNECTOR	SIEMENS	2001	2x250	2x250	64	THY	UNITED KINGDOM
THAILAND-MALAYSIA	SIEMENS	2001	300	±300	110	THY	THAILAND-MALAYSIA
MANTARO-SOCABAYA		PLANNED 2001	300	±190	640	THY	PERU
CROSS SOUND	ABB	2002	330	±150	40	TRA	U.S.A
MURRAYLINK	ABB	2002	200	±150	176	TRA	AUSTRALIA
SASARAM	GEC ALSTHOM	2002	500	205	B-B	THY	INDIA
IB VALLEY-JAIPUR		PLANNED 2002	3000			THY	INDIA
EUROCABLE		PLANNED 2002	600	500	600	THY	NORWAY-GERMANY
RAPID CITY TIE	ABB	2003	2 x 100	±13	B-B	THY	U.S.A
EAST-SOUTH INTERCONNECTOR	SIEMENS	2003	2000	±500	1400	THY	INDIA
BAKUN			2130	3x±500	1335	THY	MALAYSIA
THREE GORGES-CHANGZHOU	ABB/SIEMENS	2003	3000	±500	860	THY	CHINA
THREE GORGES-GUANGDONG	ABB	2004	3000	±500	940	THY	CHINA

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GUI-GUANG	SIEMENS	2004	3000	±500	936	THY	CHINA
TROLL A	ABB	2004	2x40	±60	70	TRA	NORWAY
LEYTE-MINDANAO		PLANNED 2004	400			THY	PHILIPPINES
VIKING CABLE		PLANNED 2004	600	450	600	THY	NORWAY-GERMANY
LAMAR	SIEMENS	2005	211	±63	B-B	THY	U.S.A.
EAST-WEST ENERGY BRIDGE		PLANNED 2005	500	600	1800	THY	GERMANY-POLAND-RUSSIA
EAST-WEST ENERGY BRIDGE		PLANNED 2010	1000			THY	GERMANY-POLAND-RUSSIA
ICELAND-SCOTLAND LINK		PLANNED 2005	550	400	950	THY	ICELAND-SCOTLAND
ICELAND-SCOTLAND LINK		FUTURE	1100	±400	950	THY	ICELAND-SCOTLAND
NORWAY-UK		PLANNED 2005	800		700	THY	NORWAY-UK
MEPANDA UNCUA		PLANNED 2006	500			THY	MOZAMBIQUE
BASSLINK	SIEMENS	2006	500	400	360	THY	AUSTRALIA
ESTLINK	ABB	UNDER CONSTRUCTION 2006	350	150	106	TRA	ESTONIA-FINLAND
LEWIS DE-ICER	AREVA	UNDER CONSTRUCTION 2006	250	±17.4	242	THY	CANADA
LONG ISLAND CABLE PROJECT		2007	600	±450	40	THY	USA
RUSSIA-CHINA		PLANNED 2007	2500		2000	THY	RUSSIA-CHINA
NORNED		UNDER CONSTRUCTION 2007	600	500	580	THY	NORWAY-NETHERLANDS
THREE GORGES-SHANGHAI		UNDER CONSTRUCTION 2007	3000	±500	900	THY	CHINA
NEPTUNE	SIEMENS	UNDER CONSTRUCTION		±500		THY	CANADA-U.S.A.
SAPEI		PLANNED 2008	500	±500	440	THY	ITALY MAINLAND-SARDINIA
CHINA-RUSSIA (HEIHE)		PLANNED 2008	750		B-B	THY	CHINA-RUSSIA
NORTHEAST-NORTH (GOALING)		PLANNED 2008	1500		B-B	THY	CHINA
OUTAOUAIS	ABB	2009	2x625	315	B-B	THY	CANADA
YUNNAN-GUANGDONG		PLANNED 2009	5000	800		THY	CHINA
LINGBAO EXPANSION		PLANNED 2009	750		B-B	THY	CHINA
AL FADHILI	AREVA	UNDER CONSTRUCTION 2009	3 x 600	3 x 222	B-B	THY	SAUDI ARABIA
STOREBAELT		PLANNED 2010	600	400	58	THY	DENMARK
FAREAST (RUSSIA) - NE CHINA		PLANNED 2010	3000			THY	CHINA-RUSSIA
HULUNBEIR (INNER MONGOLIA) - SHENYANG		PLANNED 2010	3000			THY	CHINA
NINGXIA-TIANJING		PLANNED 2010	3000			THY	CHINA
NW-SICHUAN (BAOJI-DEYANG)		PLANNED 2011	3000			THY	CHINA
NORTH SHAANXI-SHANDONG		PLANNED 2011	3000			THY	CHINA
SHANDONG-EAST		PLANNED 2011	1200		B-B	THY	CHINA
GEZHOUBA-SHANGHAI EXPANSION		PLANNED 2011	3000			THY	CHINA
XIANJIABA-SHANGHAI		PLANNED 2011	6400	800		THY	CHINA
JINGPING-EAST CHINA		PLANNED 2012	6400	800		THY	CHINA
NORTH-CENTRAL		PLANNED 2012	1000		B-B	THY	CHINA
JINGHONG-THAILAND		PLANNED 2013	3000		900	THY	CHINA-THAILAND
XILUODU-HUNAN		PLANNED 2014	6400	800		THY	CHINA
LABRADOR-NEWFOUNDLAND (LOWER CHURCHILL PROJECT)		PLANNED 2015				THY	
IRKUTSK (RUSSIA) - BEIJING		PLANNED 2015	6400	800		THY	RUSSIA-CHINA
XILUODU-HANZHOU		PLANNED 2015	6400	800		THY	CHINA
NUOZHADU-GUANGDONG		PLANNED 2015	6400	800		THY	CHINA
HUMENG-SHANDONG		PLANNED 2015	6400	800		THY	CHINA
JINSHA RIVER II - EAST CHINA		PLANNED 2016	6400	800		THY	CHINA
HUMENG-TIANJING		PLANNED 2016	6400	800		THY	CHINA
GOUPITAN-GUANGDONG		PLANNED 2016	3000			THY	CHINA
HUMENG-LIAONING		PLANNED 2018	6400	800		THY	CHINA
JINSHA RIVER II - FUJIAN		PLANNED 2018	6400	800		THY	CHINA
HAMI-C.CHINA		PLANNED 2018	6400	800		THY	CHINA
JINSHA RIVER II - EAST CHINA		PLANNED 2019	6400	800		THY	CHINA
TALCHER-BANGALORE	SIEMENS	FUTURE	2000	±500	1400	THY	INDIA
CEPA (RASPIER-RAJASTHAN)		FUTURE	2000	500		THY	INDIA
ISACCEA		FUTURE	600		B-B	THY	RUMANIA
POLAND-LITHUANIA		FUTURE			B-B	THY	
UK-NETHERLANDS		FUTURE				THY	UK-NETHERLANDS

The above HVDC List was based on the 2005 version of the CIGRE Compendium of HVDC Schemes Throughout the World.
Initial changes to the CIGRE list were made by incorporating changes from:
Mike Barhman, ABB - January 2006
Neil Kirby, AREVA - April 2006
Robyn Taylor, Teshmont - modifications based on the detailed descriptions from the 2005 version of CIGRE AG B4.04, COMPENDIUM OF HVDC SCHEMES THROUGHOUT THE WORLD text
Robyn Taylor, Teshmont - modifications based on the IEEE HVDC Projects Listing, January 2000 Issue
Further changes have been made by persons listed in the "comments" column