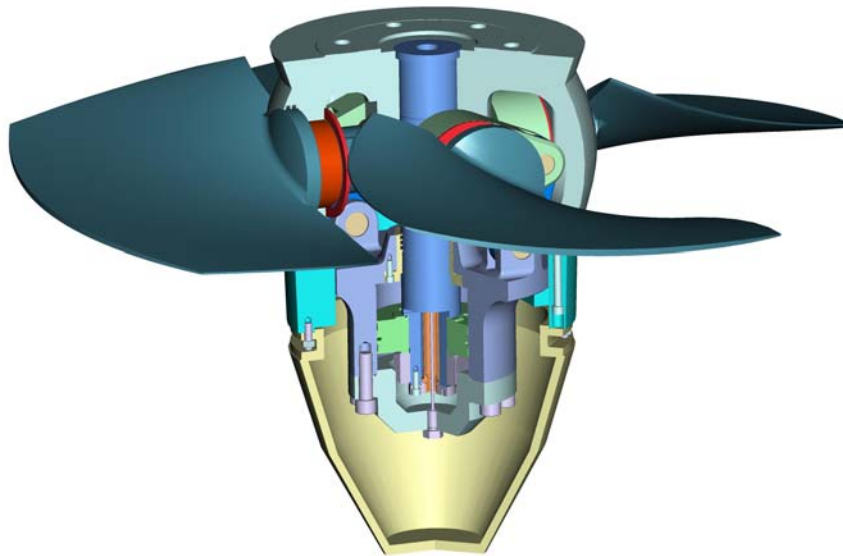


REFERENCE LISTS



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The chosen references

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Czech Republic	Kamýk	2008	Overhaul of Kaplan turbine of unit No. 3, hydraulic design, supply, erection, commissioning	Kaplan	15,5	3 800	4	12100
India	Chokka Rao – Pump Stations - Gangaram, - Dharmasagar - Bhimghanapuram - Salivagu	2008	Hydraulic design of pumps, design and manufacturing documentation, model manufacturing, model tests, supervision of fabrication, supervision of erection, tests and commissioning supervision Supply of 8 pcs pump runners and rotation parts – under realization	Pump	131	1945	2	10880
					138	1980	2	11350
					123	1880	2	9850
					130	1940	2	10550
Poland	Žur	2008	Rehabilitation and modernization HPP	Kaplan	15,2	2410	2	4400
New Zealand	Mangaio	2008	Supply of new SHPP – under realization Project documentation, supply of new Francis turbine including generator, commissioning, design and supply of conical-dispersion valve and butterfly valve	Francis	50	850	1	2 000
Germany	Markersbach	2008	Rehabilitation and modernization of 6 flap gates including technical documentation and FEM computations, erection, commissioning – under realization	-	-	-	-	-

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Poland	Žarnowiec HZ3	2008	Elaboration of the tender technical documentation for modernization HZ4	Pump-Turbine	119,3/128	6 000	4	181 500 195 250
Czech Republic	Vrané	2007	Overhaul of Kaplan turbine of unit No. 2, hydraulic design, erection, commissioning	Kaplan	10	3 600	2	8 000
Poland	Žarnowiec HZ2	2007	Adaptation of the start-up algorithm in order to stable unit No.2 at no-load operation	Pump-Turbine	119,3/128	6 000	4	181 500 195 250
Poland	Žarnowiec HZ4	2007	Elaboration of the tender technical documentation for modernization HZ4	Pump-Turbine	119,3/128	6 000	4	181 500 195 250
Dem. Rep. Congo (Zaire)	Lubilanji II-UNO	2006	Hydraulic design, layout drawings, supply, erection, commissioning	Kaplan	13,8	1 500	3	1 750
Dem. Rep. Congo (Zaire)	Inga	2006	Supply inlet and draft tube stop-logs, erection	-	-	-	-	-
Czech Republic	Střekov	2006	Overhaul of unit No. 1, supply, erection and commissioning	Kaplan	10	4 300	3	6 000
Czech Republic	Les Království	2005	Complete reconstruction, hydraulic design and supply of new Francis turbines include generators, erection, commissioning	Francis	22	1 040	2	1180
Czech Republic	Dalešice	2005	Delivery of new disc for butterfly flap valve - unit No. 4 - DN 5400 PN16 - design documentation, erection, commissioning	-	-	-	-	-

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Germany	Hohenwarte I	2005	Measurement and calculations of the turbine runner aiming to reduction of cavitation.	Francis-revers	67,9	4610	2	26 500
Czech Republic	Nemilka	2005	Delivery of Reiffenstein turbine	Reiffenstein	16	370	1	110
Czech Republic	Bystřička	2004	Supply and assembly of slide bulkhead-gate, butterfly flap valve and conical-dispersion valve	-	-	-	-	-
Czech Republic	Dalešice TG4	2004	Hydraulic design of runner, model tests, overhaul of TG4, erection, overhaul of rapid-closing flap valve, commissioning	Pump-Turbine	89/93	6 000	4	121 500
Germany	Goldisthal	2004	Delivery of turbine components, erection	Pump-Turbine	334 279,2	4 610	4	269 000
Czech Republic	Hracholusky	2004	Repairs and reconstruction of two conical-dispersion valve DN 1400	-	-	-	-	-
India	Kadana	2004	Commissioning of 3 pcs Diagonal Deriaz Turbine	Diagonal Deriaz	48,2/51	5 000	4	61 700
Czech Republic	Orlík	2004	Repairs of unit TG1, TG2 and TG4 after damaging by floods	Kaplan	70,5	4 600	4	95 900
USA	Parker Dam	2004	Model tests	Francis	25	4 740	-	40 000
Czech Republic	Poděbrady	2004	Completion of repairs of unit TG3 and commissioning	Francis	4	290	5	1040

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Czech Republic	Štěchovice III	2004	Completion of repairs of emergency valve servomotor of unit TG2 and commissioning	Pump-Turbine	220/225	2 200	1	50 000
India	Tillari	2004	Upgrading, runner hydraulic design, supervision erection and commissioning	Pelton	625,4	2 020	1	68 200
Czech Republic	Vydra	2004	Hydraulic design of new runner, supply, erection, commissioning	Francis	235	1 000	2	4 200
Australia	Burrendong	2003	Supply of 2 new runners of the Francis turbine	Francis	36,9	1 660	2	5 640
Czech Republic	Dlouhé Stráně	2003	Adjustments of runner TG1, repairs guide vanes	Pump-Turbine	547/554	4 540	2	325 000 301 000
Slovak Republic	Domáša Ružín	2003	Repairs of quick-closing gates of unit TG1	-	-	-	-	-
USA	Fairfield	2003	Model testing	Pump-Turbine	-	-	8	85 000 79 000
Czech Republic	Kružberk	2003	Overhaul of HPP, project design of rehabilitation, supply, erection and commissioning	Francis	71	1 000	1	4 380
Dem. Rep. Congo (Zaire)	Lubilanji-II BIS	2003	Hydraulic design, layout drawings, supply, erection, commissioning	Kaplan.	13,8	1 500	3	1 750
Pakistan	Mangla	2003	Reconstruction of Francis turbine governing mechanism - Units 5 and 6	Francis	125	4 000	2	103 000

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Germany	Markersbach	2003	Calculations and measurements of cavitation on model	Pump-Turbine	307	3 980	6	175 000
					315			182 000
USA	Northfield Mountain	2003	Model tests	Pump-Turbine	251	5 200	-	320 000
					255			255 000
Czech Republic	Slapy	2003	Supply, testing and handing over of temporary stop-logs of bottom outlets	Kaplan	56	3 700	3	50 000
Czech Republic	Štěchovice I	2003	Rehabilitation of Unit 1, erection and commissioning	Kaplan	20	3 600	2	13 500
Czech Republic	Štěchovice III	2003	Rehabilitation of Unit 3, erection and commissioning	Pump-Turbine	220	2 200	1	50 000
					225			
Czech Republic	Vranov	2003	Upgrading, runner hydraulic design overhaul of unit 3, erection, commissioning	Francis	42	2 000	3	6 300
Sri Lanka	Uda Walawe	2003	Repairs of Kaplan turbine wicket gates	Kaplan	13	1 800	3	2 000
Czech Republic	Pastviny	2002	Hydraulic design of new runner, supply, erection, commissioning	Francis	30	1 340	1	3 250
Pakistan	Khari	2002	Project design, erection, commissioning	Francis	65	1 000	1	1 520
Czech Republic	Práčov	2002	Overhaul of HPP, hydraulic design, model tests, supply of new turbine and governor, erection, commissioning	Francis	85	1 300	1	10 200
USA	Round Butte	2002	Model tests	Francis	110	3 500	1	127 000

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Czech Republic	Vranov	2002	Upgrading, runner hydraulic design overhaul of unit 2, erection, commissioning	Francis	42	2 000	3	6 300
USA	Fairfield	2001	Model tests	Francis	-	-	-	79 85
New Zealand	Botocan	2001	Supply of 2 butterfly valves DN 1200 PN 22	-	-	-	-	-
Bulgaria	Bujanovska	2001	Project, erection, commissioning	Francis-horiz.	27,9	410	1	245
Czech Republic	Dalešice TG1	2001	Overhaul of unit 1, hydraulic design of guide vanes, erection, commissioning	Pump-Turbine	89/93	6 000	4	112 500
USA	Grand Coulee	2001	Model tests	Pump	110	4 200	1	45 000
Georgia	Khrami	2001	Hydraulic design, model tests	Francis	324	2 500	2	55 300
Greece	Messochora	2001	Design, hydraulic design, model tests, supervision erection, dry tests	Francis	225	2 800	2	82 650
Czech Republic	Vír	2001	Overhaul of TG2, supply of new runner, upgrading of parameters, erection, commissioning	Francis	64	1 150	2	6 440
Czech Republic	Vranov	2001	Overhaul and modernization of unit TG1, supply, erection, commissioning	Francis	42	2 000	3	6 300
Czech Republic	Morávka	2000	Design of cone valves, overhaul of Francis turbine, erection, putting into operation, commissioning	Francis	38	250	1	52

Country	Plant	Year	Description of activities	Type of turbine	H (m)	D (mm)	Number of units	Unit output (kW)
Czech Republic	Dalešice TG3	1999	Overhaul of unit 3,hydraulic design of guide vanes, , overhaul of butterfly valve, erection, commissioning	Pump - Turbine	89/93	6 000	4	112 500
Columbia	Dolores	1999	Hydraulic design, project design, erection supervision, commissioning	Francis - horiz.	95	1 130	1	8 186
Japan	Ebara	1999	Hydraulic design, licence	Kaplan - horiz.	-	-	-	-
Germany	Eichicht	1999	Modernization of unit D and E, project design of rehabilitation, design of new runner, erection supervision, guarantee measurements, commissioning	Kaplan	13,3	1 550	2	1 760
Columbia	Pajarito	1999	Hydraulic design, project design, supervision erection, commissioning	Francis	120	1 030	1	5 150
Peru	Curumuy	1998	Hydraulic design, project design, supervision of erection, guarantee measurements, commissioning	Kaplan	39	1 650	2	6 354
Peru	Sullana	1998	Project design, erection, commissioning	Kaplan	5,5	1 250	1	244
Italy	Treja	1998	Project design, erection, commissioning	Kaplan	8,4	1 000	2	450
India	Karikayam	1997	Project design	Kaplan	19	3 000	1	7 850
India	Kundah	1997	Project design, erection, commissioning	Francis	210	1 800	1	36 475
Czech Republic	Podbaba	1997	Project design, erection, commissioning	Kaplan	5,6	1 550	2	672
Indonesia	Tapen	1997	Project design, erection, commissioning	Kaplan	11,35	1 500	1	851