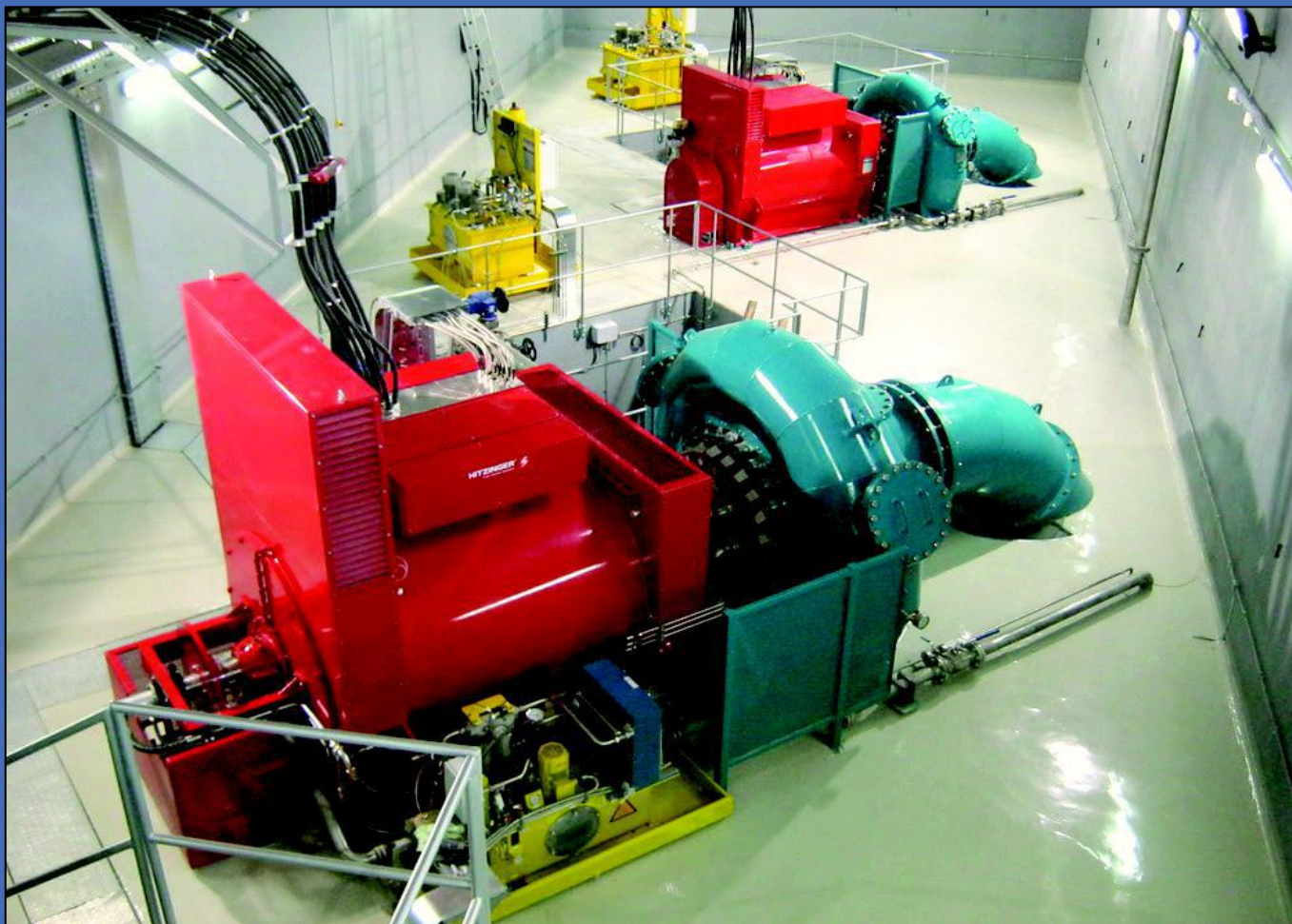
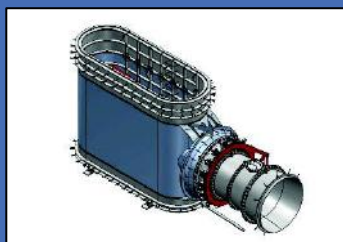


Small hydro power plants



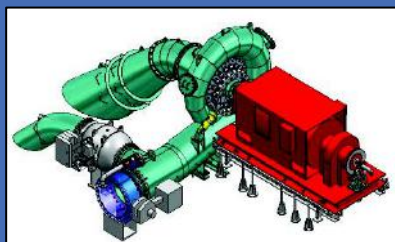
mHE Zapeće - Vlačić

Za potrebe proizvodnje, montaže, predmontaže, servisiranja, rekonstrukcije i puštanja u rad vodnih turbina i druge hidromehaničke opreme, imamo grupu inženjersko-monterskih specijalista orijentiranih za samostalno vođenje projekata i izvođenje radova na terenu.



Kaplan turbine

Horizontalne Kaplan turbine sa i bez multiplikatora, vertikalne Kaplan turbine, Bulb Kaplan turbine



Francis turbine

Horizontalne Francis turbine, vertikalne Francis turbine, kombinacije Francis / Kaplan



Pelton turbine

Horizontalne Pelton turbine, vertikalne Pelton turbine

Č.J. d.o.o. Bihać

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Č.J. d.o.o. Bihać je brzorastuće familijarno preduzeće koje je od svog osnivanja do danas svoj uspješan rast i razvoj temelji prilagođavajući svoju poslovnu politiku promjenama u okruženju u kojem je poslovalo, uvijek sa jasnom orijentacijom na tržište i uslove koje je ono diktira.

Višegodišnja poslovna saradnja "Č. J." d.o.o. Bihać i Gugler Water Turbines GmbH iz Linz, rezultirali su realizacijom mnogih projekata u Južnoj Koreji, Indoneziji, Bosni i Hercegovini, Makedoniji, Rumuniji, Francuskoj, Švedska, Italiji, Španjolska, Turskoj, Albaniji, Bugarskoj, Latviji, Armeniji, Šri Lanki, Ruandi, Kolumbiji, Panami, Čile, itd...

Č.J. d.o.o. Bihać is a fast growing family enterprise which is since it's establishment to today, made the successful development and growth through the adapting of business policy to the changes that are occurring in the environment in which was doing bussines, always with a clear orientation towards the market and the conditions which it dictates.

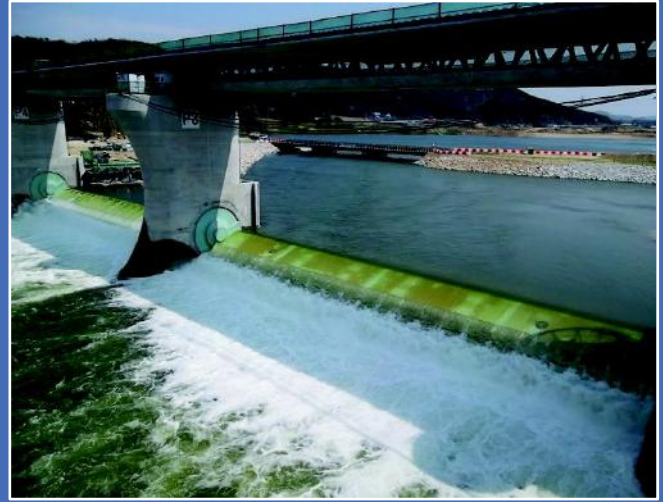
Multiannual business relationship "C. J." d.o.o. Bihac and Gugler Water Turbines GmbH from Linz, have resulted in realization of many projects in South Korea, Indonesia, Bosnia and Herzegovina, Macedonia, Romania, France, Sweden, Italy, Spain, Turkey, Albania, Bulgaria, Latvia, Armenia, Sri Lanka, Rwanda, Colombia, Panama, Chile, etc...

REALIZIRANI PROJEKTI - REALISED PROJECTS

1. HPP Gangchun	2011	32. HPP Ceruje I-II	2013	63. HPP Porta Mulina	2015
2. HPP Gumi	2011	33. HPP Sotira	2013	64. HPP ECO Tizingal	2015
3. HPP Chuksan	2011	34. HPP Ura e Dashit	2013	65. HPP Govza	2015
4. HPP Keumnam	2011	35. HPP Palisse	2013	66. HPP Gostivisht	2016
5. HPP Keumgang	2011	36. HPP Beaumont Monteux	2013	67. HPP Giciye II	2016
6. HPP Garessio	2012	37. HPP Novaci I-Bis	2013	68. HPP Alejandria	2016
7. HPP Valtorta	2013	38. HPP Sebesel I-II	2013	69. HPP Tranquil	2016
8. HPP Cannucciaro	2013	39. HPP Bačiška reka	2013	70. HPP Krueng Isep	2016
9. HPP Selecka	2012	40. HPP Golemača	2013	71. HPP Hintergössgraben	2016
10. HPP Kamenička	2012	41. HPP Galičnik	2013	72. HPP Fäbodbacken	2016
11. HPP Brajčino I	2013	42. HPP Patiška	2013	73. HPP Muara	2016
12. HPP Drugovo	2013	43. HPP Brajčino II	2012	74. HPP Moragaha Oya	2016
13. HPP Kranska	2013	44. HPP Gradecka	2013	75. HPP Cantayus	2016
14. HPP Krkljanska	2013	45. HPP Mala reka	2014	76. HPP Jovencan	2016
15. HPP Brbusnica	2013	46. HPP Kriva reka I-II	2013	77. HPP Kapfenberg	2016
16. HPP Kriva reka	2013	47. HPP Marenghello	2013	78. HPP Lintau	2016
17. HPP Slatino	2013	48. HPP Toranica	2012	79. HPP Karatas	2017
18. HPP Krkljanska	2013	49. HPP Botunja	2014	80. HPP Cannucciaro	2017
19. HPP Novaci I	2012	50. HPP Tokmadin	2012	81. HPP Gihira	2017
20. HPP Novaci II	2012	51. HPP Telli I-II	2014		
21. HPP Novaci III	2012	52. HPP Mountain Tea	2013		
22. HPP Novaci IV	2012	53. HPP Ücgen	2014		
23. HPP Novaci V	2012	54. HPP Piro	2014		
24. HPP Lescherete	2012	55. HPP Owala	2014		
25. HPP Novakovići	2013	56. HPP Geghi dam	2015		
26. HPP Kayo Aro	2012	57. HPP Fiano Romano	2014		
27. HPP Dinč I-II	2013	58. HPP Sillaro	2014		
28. HPP Slivka I-II	2013	59. HPP Carevets	2015		
29. HPP Peshku	2013	60. HPP Zapeće	2015		
30. HPP Brenguli	2013	61. HPP Kizilcam	2015		
31. HPP Pobreg	2013	62. HPP San Giovanni Bianco	2015		

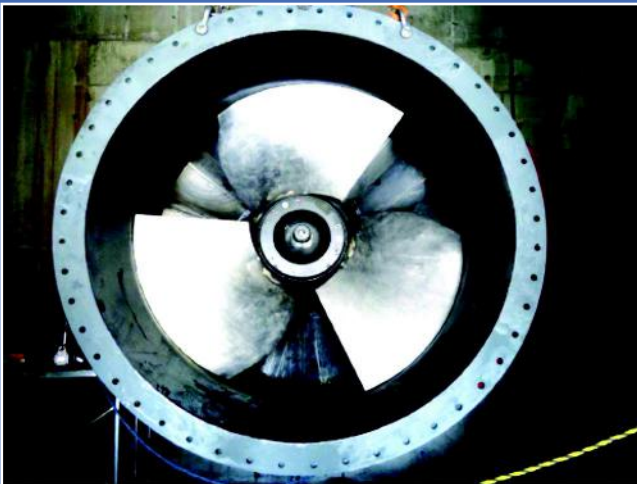
1

Country: Project: Technical data:	South Korea HPP Gangchun Consists of (3) three horizontal Kaplan Pit turbines with an output of 3067 kW each for a net head of 4,7 m and a flow rate of 73,9 m ³ /s per turbine	Država: Projekat: Tehnički podaci:	Južna Koreja HPP Gangchun Sastoji se od (3) tri horizontalne Kaplan Pit turbine sa izlaznom snagom od 3067 kW svaki za neto pad od 4,7 m, i protoku od 73,9 m ³ /s po turbini
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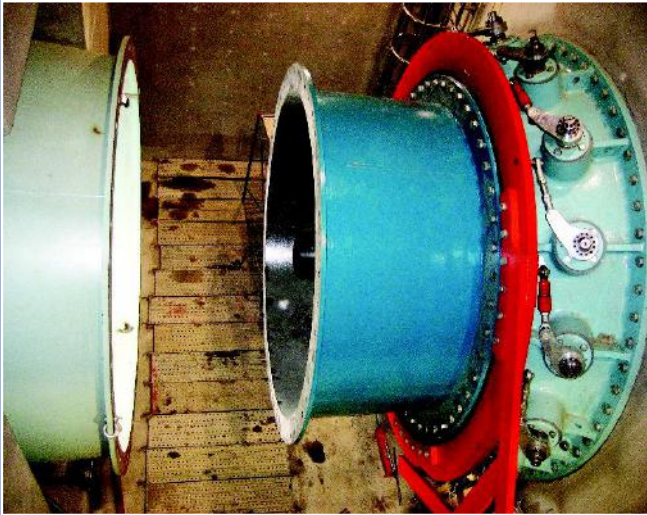
2

Country: Project: Technical data:	South Korea HPP Gumi Consists of (2) two horizontal Kaplan Pit turbines with an output of 1660 kW each for a net head of 6,6 m and a flow rate of 28,5 m ³ /s per turbine. The runner diameter of the Kaplan turbines is 2,0 m	Država: Projekat: Tehnički podaci:	Južna Koreja HPP Gumi Sastoji se od (2) dvije horizontalne Kaplan Pit turbine izlazne snage od 1660 kW svaki za neto pad 6,6 m, protoka od 28,5 m ³ /s po turbini. Promjer rotora Kaplan turbina iznosi 2,0 m
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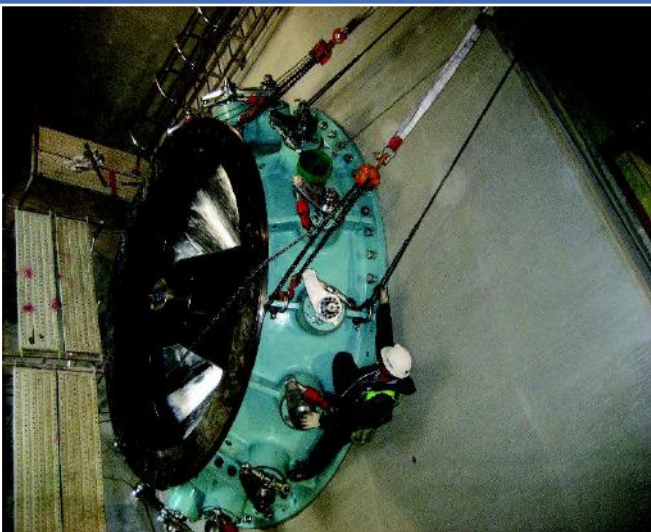
3

Country: Project: Technical data:	South Korea HPP Chuksan Consists of (2) horizontal Kaplan Pit turbines with an output of 670 kW each for a net head of 4,5 m and a flow rate of 16,5 m ³ /s per turbine. The runner diameter of the Kaplan turbines is 1,80 m	Država: Projekat: Tehnički podaci:	Južna Koreja HPP Chuksan Sastoji se od (2) horizontalne Kaplan Pit turbine izlazne snage od 670 kW svaka, za neto pad 4,5 m i protoku od 16,5 m ³ /s po turbini. Promjer rotora Kaplan turbine je 1,80 m
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4

Country: Project: Technical data:	South Korea HPP Keumnan Consists of (3) horizontal Kaplan Pit turbines with an output of 838 kW each, for net head of 2.51 m and a flow rate of 37.8 m ³ /s per turbine. The runner diameter of the Kaplan turbines is 2.85 m.	Država: Projekat: Tehnički podaci:	Južna Koreja HPP Keumnan Sastoji se od (3) horizontalne Kaplan Pit turbine izlazne snage od 838 kW svaka, za neto pad 2.51 m, protoka od 37.8 m ³ /s po turbini. Promjer rotora Kaplan turbina je 2,85 m.
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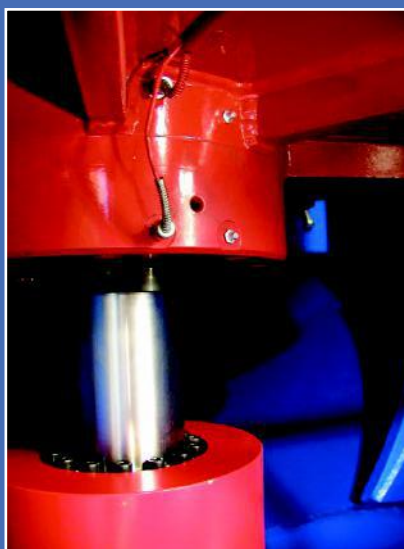
5

Country: Project: Technical data:	South Korea HPP Keumgang Consists of (2) horizontal Kaplan Pit turbines with an output of 1670 kW each for a net head of 4.2 m and a flow rate of 45 m ³ /s per turbine. The runner diameter of the Kaplan turbines is 2.80 m.	Država: Projekat: Tehnički podaci:	Južna Koreja HPP Keumgang Sastoji se od (2) horizontalne Kaplan Pit turbine izlazne snage od 1670 kW svaka, za neto pad od 4,2 m, a uz brzinu protoka od 45 m ³ /s po turbini. Promjer rotora Kaplan turbine je 2.80 m.
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6

Country: Project: Technical data:	Italy HPP Garessio One vertical Kaplan Turbine power output of 445 kW with a direct coupled generator and hydraulic unit, installation supervision and commissioning. The discharge is 5 m ³ /s with net head of 10 m.	Država: Projekat: Tehnički podaci:	Italija HPP Garessio Jedna vertikalna Kaplan turbina izlazne snage od 445 kW s izravnim zajedno generatora i hidrauličkim agregatom jedinice, nadzor postrojenja i puštanje u pogon. Protok je 5 m ³ /s sa neto padom 10 m.
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7

Country: Project: Technical data:	Italy HPP Valtorta Consist one horizontal Pelton turbine with a output power 825 kW, flow 0,45 m ³ /s, and neto head 208 m, and one Francis vertical turbine output power 322 kW, flow 0,6 m ³ /s and neto head 61 m.	Država: Projekat: Tehnički podaci:	Italija HPP Valtorta Sastoji se jedne horizontalne Pelton turbine sa izlaznom snagom 825 kW, protok 0,45 m ³ /s i neto padom 208 m, i jedne Francis vertikalne turbine snage 322 kW, protoka 0,6 m ³ /s i neto pad 61 m.
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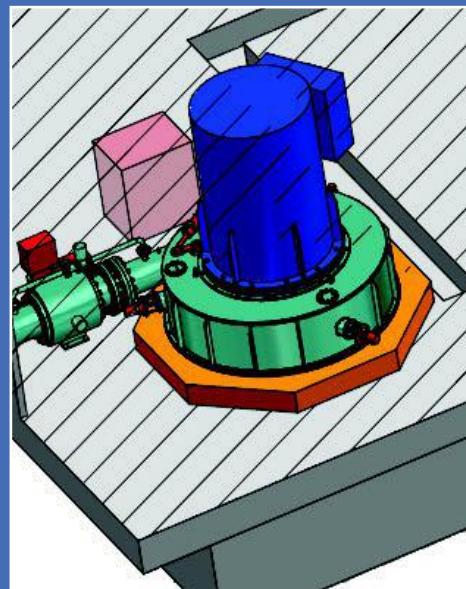
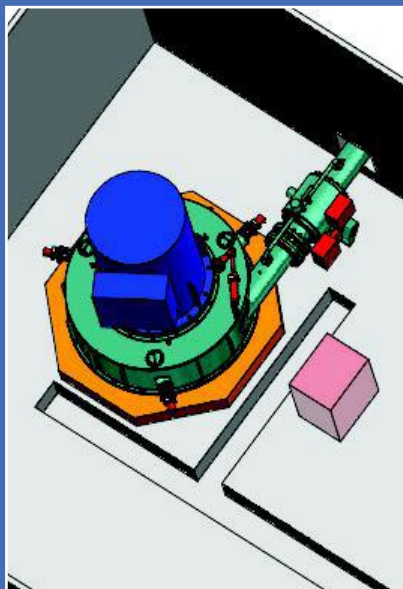
8

Country: Project: Technical data:	Italy HPP Cannucciaro One vertical Kaplan Turbine with an output power of 870 kW. The generator is directly coupled to the turbine. The net head is 10,8 m with a discharge of 9 m ³ /s	Država: Projekat: Tehnički podaci:	Italija HPP Cannucciaro Jedna vertikalna Kaplan turbina izlazne snage od 870 kW. Generator je izravno spojen na turbinu. Neto pad je 10,8 m sa protokom 9 m ³ /s
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9

Country: Project: Technical data:	Macedonia HPP Selecka One vertical 3-jet Pelton Turbine with an output of 1845 kW for a net head of 299 m and flow rate of 0,7 m ³ /s	Država: Projekat: Tehnički podaci:	Makedonija HPP Selecka Jedna vertikalna Pelton turbina sa tri igle, izlazne snage od 1845 kW za neto pad od 299 m i brzinom protoka 0,7 m ³ /s
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10

Country: Project: Technical data:	Macedonia HPP Kamenička One 3-jet Pelton Turbine with an output of 1255 kW for a net head of 142 m and flow rate of 1 m ³ /s	Država: Projekat: Tehnički podaci:	Makedonija HPP Kamenička Jedna Pelton vertikalna turbina sa tri igle, izlazne snage od 1255 kW za neto pad 142 m, a brzina protoka 1 m ³ /s
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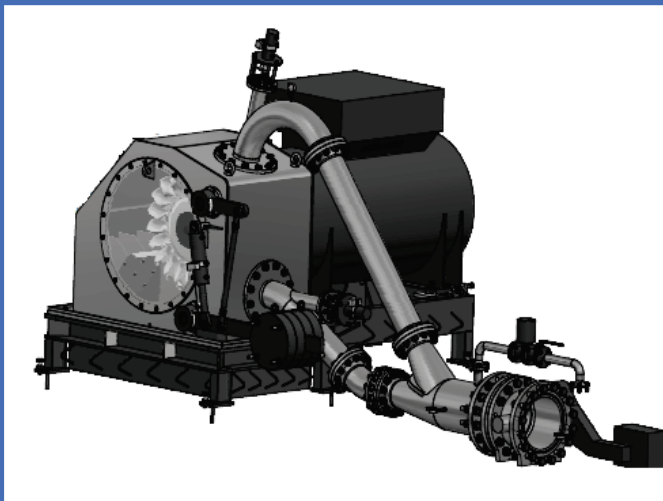
11

Country: Project: Technical data:	Macedonia HPP Brajčino I One vertical 3-jet Pelton Turbine with an output of 740 kW for a net head of 112 m and flow rate of 0,75 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Brajčino I Jedna vertikalna Pelton turbina sa tri igle, izlazne snage od 740 kW za neto pad od 112 m i brzinu protoka 0,75 m ³ /s.
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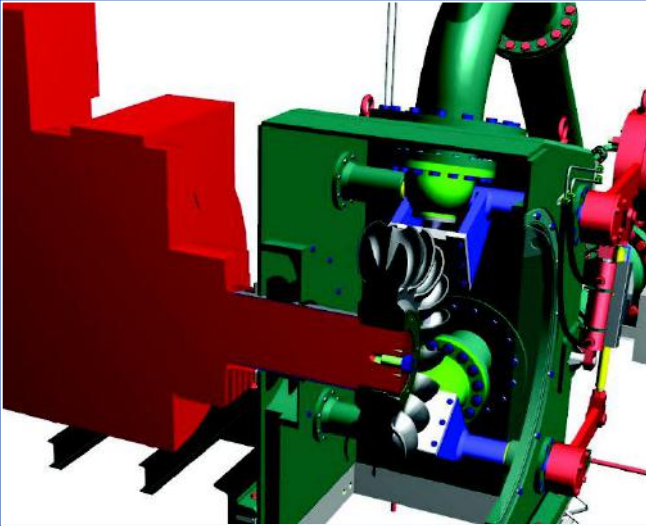
12

Country: Project: Technical data:	Macedonia HPP Drugovo One 2-jet horizontal Pelton Turbine with an output of 620 kW for a net head of 201 m and flow rate of 0,35 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Drugovo Jedan Pelton horizontalna turbina sa 2 igle, snage od 620 kW za neto pad od 201 m, a stopa od 0,35 m ³ /s protoka.
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13

Country: Project: Technical data:	Macedonia HPP Kranska One 2-jet horizontal Pelton Turbine with an output of 610 kW for a net head of 152 m and flow rate of 0,45 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Kranska Jedna Pelton horizontalna turbina sa dvije igle, snage od 610 kW za neto pad od 152 m i protoka od 0,45 m ³ /s.
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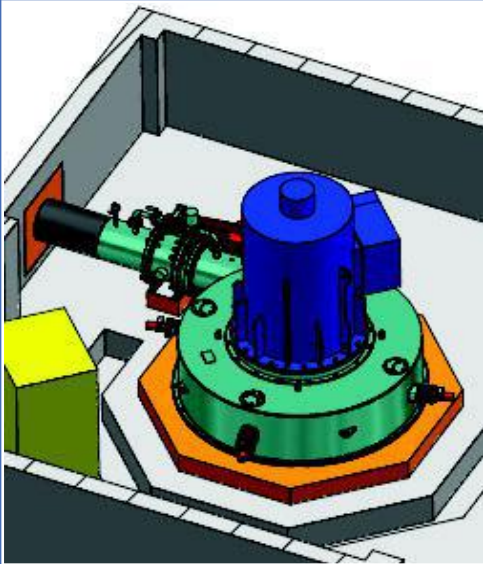
14

Country: Project: Technical data:	Macedonia HPP Krkljanska One 2-jet horizontal Pelton Turbine with an output of 400 kW for a net head of 128 m and flow rate of 0,35 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Krkljanska Jedna horizontalna Pelton turbina sa dvije igle, sa snagom od 400 kW za neto pad od 128 m, i protokom od 0,35 m ³ /s.
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15

Country: Project: Technical data:	Macedonia HPP Brbusnica One vertical 3-jet Pelton Turbine with an output of 595 kW for a net head of 103,5 m and flow rate of 0,65 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Brbusnica Jedna vertikalna Pelton turbine sa izlaznom snagom od 595 kW za neto pad 103,5 m i protok od 0,65 m ³ /s.
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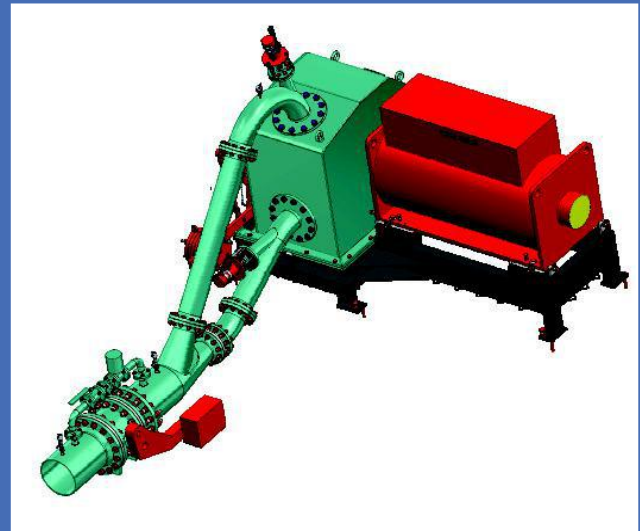
16

Country: Project: Technical data:	Macedonia HPP Kriva reka One vertical 3-jet Pelton Turbine with an output of 605 kW for a net head of 105 m and flow rate of 0,65 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Kriva reka Jedna vertikalna Pelton turbina sa izlaznom snagom od 605 kW i neto padom od 0,65 m ³ /s.
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17

Country: Project: Technical data:	Macedonia HPP Slatino One horizontal 2-jet Pelton Turbine with an output of 585 kW for a net head of 220 m and flow rate of 0,3 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Slatino Jedan horizontalna Pelton turbina sa dvije igle, snage od 585 kW za neto pad od 220 m i protoka od 0,3 m ³ /s.
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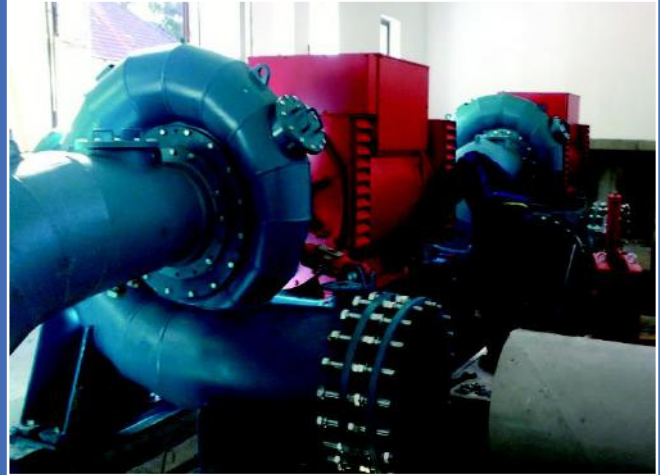
18

Country: Project: Technical data:	Macedonia HPP Krkljanska One horizontal 2-jet Pelton Turbine with an output of 400 kW for a net head of 128 m and flow rate of 0,35 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Krkljanska Jedna horizontalna 2-jet Pelton turbina sa dvije igle, snage od 400 kW za neto pad od 128 m i protokom od 0,35 m ³ /s.
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19

Country: Project: Technical data:	Romania HPP Novaci I Refurbishment of the five (5) small hydropower plants in Romania. The scope of supply includes the supply of five (5) new Francis turbines with an installed capacity of 2.5 MW, generators, hydraulic power units, inlet valves and automation systems.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci I Obnova od pet (5) malih hidroelektrana u Rumuniji. Opseg isporuke uključuje isporuku od pet (5) novih Francis turbina sa instaliranim kapacitetom od 2,5 MW, generatore, hidraulične agregate, usisne ventile i automatizaciju sistema.
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20

Country: Project: Technical data:	Romania HPP Novaci II One new Francis turbine with output power 640 kW + one restored old turbine.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci II Jedna nova Francis turbina izlazne snage 640 kW + jedna reparirana turbina.
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21

Country: Project: Technical data:	Romania HPP Novaci III One new Francis turbine output power 656 kW + one restored old turbine.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci III Jedna nova Francis turbina izlazne snage 656 kW + jedna obnovljena stara turbina.
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22

Country: Project: Technical data:	Romania HPP Novaci IV One new Francis turbine output power 670 kW + one restored old turbine.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci IV Jedna nova Francis turbina izlazne snage 670 kW + jedna obnovljena stara turbina.
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23

Country: Project: Technical data:	Romania HPP Novaci V Two old restored turbine output power 900 kW.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci V Dvije stare turbine koje su reparirane izlazne snage 900 kW.
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24

Country: Project: Technical data:	France HPP Lescherette One 2-jet Pelton Turbine with an output of 1100 kW for a net head of 210 m, flow 0,6 m ³ /s.	Država: Projekat: Tehnički podaci:	Francuska HPP Lascharette Jedna Pelton turbina sa dvije igle izlazne snage 1100 kW, neto pad 210m i protokom 0,6 m ³ /s.
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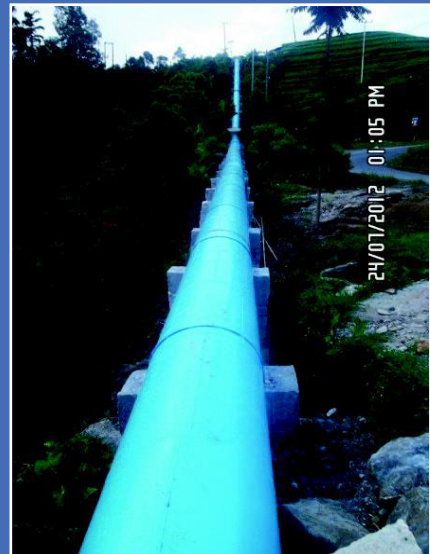
25

Country: Project: Technical data:	Bosnia and Herzegovina HPP Novakovići Two Francis Turbine with an output of 5,7 MW for a net head of 140 m, flow 5 m ³ /s.	Država: Projekat: Tehnički podaci:	Bosna i Hercegovina HPP Novakovići Dvije Francis turbine sa izlaznom snagom 5,7 MW, neto padom 140 m i protokom 5 m ³ /s.
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26

Country: Project: Technical data:	Indonesia HPP Kayo Aro One Francis Turbine with horizontal generator shaft, with output 970 kW, net head 62,6 m and flow 1,75 m ³ /s.	Država: Projekat: Tehnički podaci:	Indonezija HPP Kayo Aro Jedna Francis horizontalna turbina sa izlaznom snagom 970 kW, neto pad 62,6 m i protokom 1,75 m ³ /s.
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27

Country: Project: Technical data:	Turkey HPP Dinç I-II 2 Pelton Turbine with an output of 1.04 MW each, net head 181,95 m and flow rate 0,65 m ³ /s.	Država: Projekat: Tehnički podaci:	Turska HPP Dinç I-II Dvije Pelton turbine sa izlaznom snagom 1,04 MW svaka, neto pad 181,95 m i protokom od 0,65 m ³ /s.
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28

Country: Project: Technical data:	Bulgaria HPP Slivka I-II This new hydropower plant consists of (2) two Francis turbines with an overall capacity of 2.1 MW; Gugler Water Turbines will supply the complete electromechanical equipment.	Država: Projekat: Tehnički podaci:	Bugarska HPP Slivka I-II Ova nova mala elektrana sadrži 2 Francis turbine sa kapacitetom od 2,1 MW; Gugler Water Turbines je isporučio kompletnu elektromehaničku opremu.
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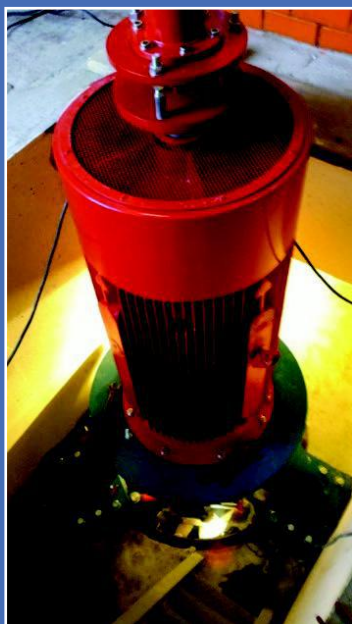
29

Country:	Albania	Država:	Albanija
Project:	HPP Peshku	Projekat:	HPP Peshku
Technical data:	Two Francis Turbine with horizontal generator shaft power 1850 kW each, net head 110 m and discharge 1,89 m ³ /s.	Tehnički podaci:	Dvije Francis turbine sa horizontalnim generatorom snage 1840 kW svaka, neto padom 110 m i protokom 1,89 m ³ /s.



30

Country:	Latvia	Država:	Latvija
Project:	HPP Brenguli	Projekat:	HPP Brenguli
Technical data:	GUGLER supply (1) vertical, double regulated Kaplan Turbines with an output of 95 KW. The discharge is 2,1 m ³ /s at a net head of 4,5 m.	Tehnički podaci:	Gugler je isporučio jednu Vertikalnu Kaplan turbine sa izlaznom snagom 95 kW. Protok je 2,1 m ³ /s sa neto padom 4,5 m.



31

Country: Project: Technical data:	Albania HPP Pobreg Consisting of two (2) horizontal Francis Turbines with an output of 9600 kW and 3900 kW. The turbines are for a net head of 95 m and a discharge of 10 m ³ /s respectively 4 m ³ /s.	Država: Projekat: Tehnički podaci:	Albanija HPP Pobreg Sadrži dvije Horizontalne Francis turbine sa izlaznom snagom 9600 kW i 3900 kW. Turbine su za neto pad 95 m, protoke 10 m ³ /s i 4 m ³ /s.
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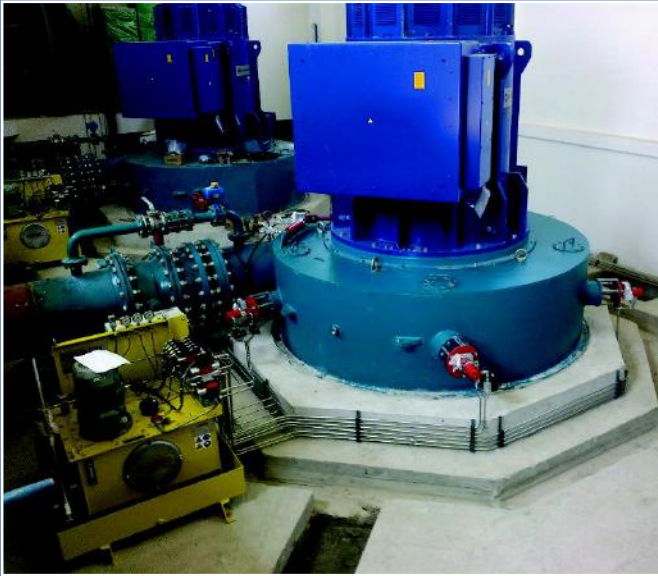
32

Country: Project: Technical data:	Albania HPP Ceruje I-II Two-jet Pelton Turbine each with an output of 2330 kW and 2860 kW. The turbines are designed for a net head of 261 m and 321 m respectively and a discharge of 1 m ³ /s each.	Država: Projekat: Tehnički podaci:	Albanija HPP Ceruje I-II Pelton turbine sa dvije igle izlazne snage 2330 kW i 2860 kW. Turbine su dizajnirane za neto pad od 261 m i 321 m sa protokom 1 m ³ /s svaka.
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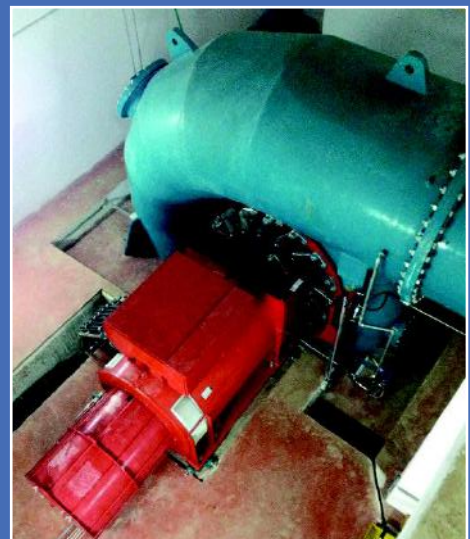
33

Country: Project: Technical data:	Albania HPP Sotira Consist two (2) five-jet Pelton Turbines with an output of 1170 kW each. The net head is 121 m and the discharge 1,1 m ³ /s.	Država: Projekat: Tehnički podaci:	Albanija HPP Sotira Sadrži dvije Pelton turbine sa pet igala, izlazne snage 1170 kW za svaku. Neto pad je 121 m i protok je 1,1 m ³ /s.
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34

Country: Project: Technical data:	Albania HPP Ura-e-Dashit GUGLER supplies the company Idro Energy Pulita shpk one (1) Kaplan Spiral Turbine output of 1217 kW. The net head is 19,5 m with a flow rate of 7 m ³ /s.	Država: Projekat: Tehnički podaci:	Albanija HPP Ura-e-Dashit Gugler je isporučio kompaniji Idro Energy Pulita shpk jednu Kaplan Spiralnu turbinu izlazne snage 1217 kW. Neto pad je 19,5 m sa protokom od 7 m ³ /s.
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35

Country: Project: Technical data:	France HPP Palisse One double Kaplan Spiral Turbine for the project Palisse. The six-blade Kaplan Spiral Turbine is designed for a net head of 26 m with a discharge of 11,5 m ³ /s and output of 2678 kW.	Država: Projekat: Tehnički podaci:	Francuska HPP Palisse Jedna Kaplan Spiralna turbine za projekat Palisse. Kaplan Spiralna turbine sa rotorom sa šest lopatica je dizajnirana za neto pad 26 m, protok 11,5 m ³ /s i izlaznom snagom 2678 kW .
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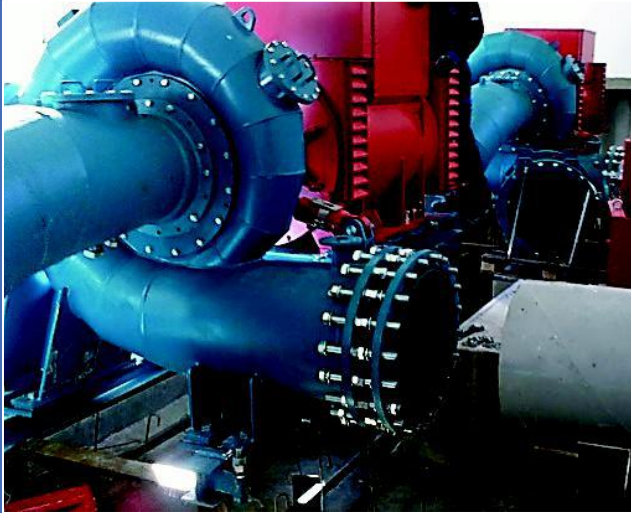
36

Country: Project: Technical data:	France HPP Beaumont Monteaux Assembly of turbines, generators and butterfly valves for Horizontal Kaplan turbine with 1572 kW output.	Država: Projekat: Tehnički podaci:	Francuska HPP Beaumont Monteaux Instaliranje turbine, generatora i leptirastog ventila za Horizontalnu Kaplan turbinu sa izlaznom snagom 1572 kW.
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37

Country: Project: Technical data:	Romania HPP Novaci I-BIS Consist two (2) Francis Turbines for the hydropower project Novaci 1 BIS. The Francis Turbines feature an output of 430 kW each at a net head of 48,7 m and a discharge of 1 m ³ /s.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Novaci I-BIS Sadrži dvije Francis turbine za projekat Novaci 1 BIS. Instalirane Francis turbine su sa izlaznom snagom 430 kW svaka, neto pad 48,7 m i protokom 1 m ³ /s.
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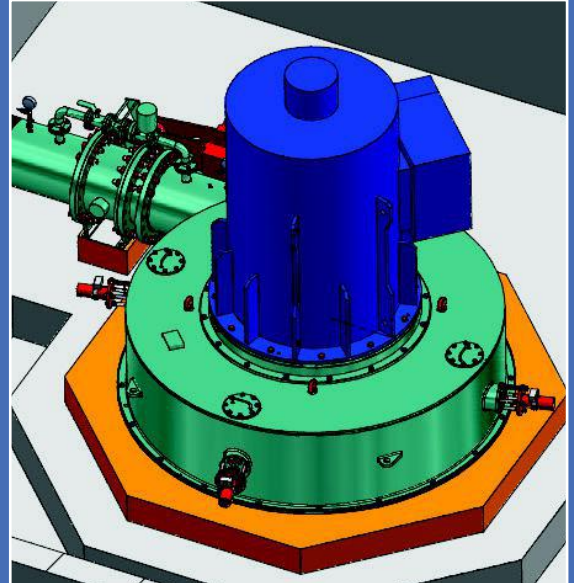
38

Country: Project: Technical data:	Romania HPP Sebesel I-II Delivery consist turbines with output of 918 kW and 1150 kW respectively. Each of these power plant is equipped with one (1) vertical, six-jet Pelton Turbine.	Država: Projekat: Tehnički podaci:	Rumunjska HPP Sebesel I-II Isporuka sadrži turbine sa izlaznom snagom 918 kW i 1150 kW. Svaki od ovih projekata sadrži jednu Vertikalnu Pelton turbinu sa šest igala.
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39

Country:	Macedonia	Država:	Makedonija
Project:	HPP Bačiška Reka	Projekat:	HPP Bačiška Reka
Technical data:	Delivery consist one (1) vertical, four-jet Pelton Turbine with output 1180 kW, net head with 145,51 m and discharge of 0,91 m ³ /s.	Tehnički podaci:	Isporuka sadrži jednu Vertikalnu Pelton turbine sa četiri igle izlazne snage 1180 kW, neto padom od 145,51 m i protokom 0,91 m ³ /s.



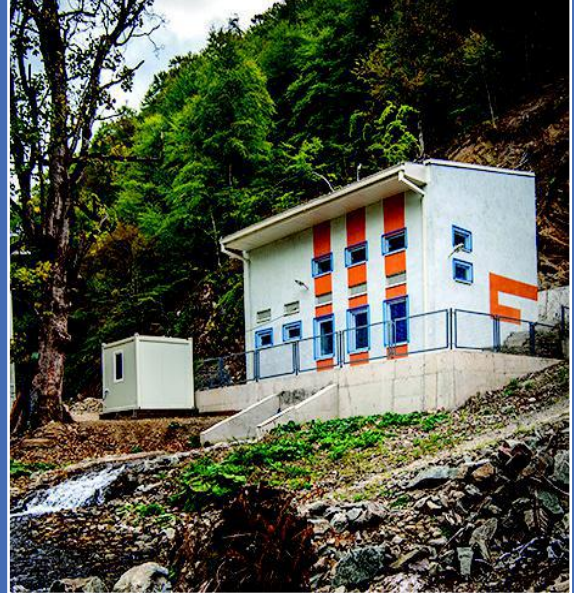
40

Country:	Macedonia	Država:	Makedonija
Project:	HPP Golemača	Projekat:	HPP Golemača
Technical data:	One two-jet Horizontal Pelton turbine with an output of 424 kW, net head 137,5 m, flow 0,35 m ³ /s.	Tehnički podaci:	Jedna horizontalna Pelton turbina sa dvije igle, izlazne snage 424 kW, neto padom 137,5 m i protokom 0,35 m ³ /s.



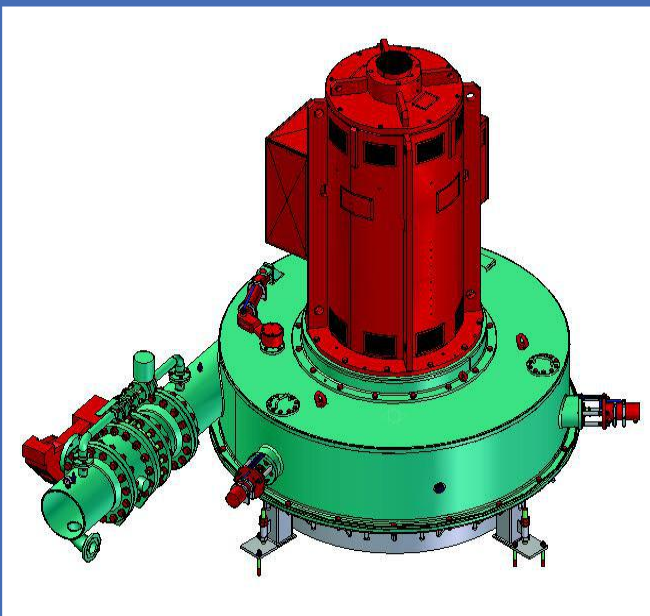
41

Country: Project: Technical data:	Macedonia HPP Galičnik One three-jet Pelton turbine will generate 1303 kW at a net head of 241,4 m and a discharge of 0,61 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Galičnik Jedna Vertikalna Pelton turbina izlazne snage sa 1303 kW i sa neto padom 241,4 m i protokom 0,61 m ³ /s.
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42

Country: Project: Technical data:	Macedonia HPP Patiška One three-jet Pelton turbine will generate 716 kW at a net head of 163,6 m and a discharge of 0,5m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Patiška Jedna Vertikalna Pelton turbina sa izlaznom snagom 716 kW i neto padom od 163,6 m i protokom 0,5 m ³ /s.
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43

Country: Project: Technical data:	Macedonia HPP Brajčino II One five-jet Pelton turbine will generate 1517 kW at a net head of 111 m and a discharge of 1,55 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Brajčino II Jedna Vertikalna Pelton turbina sa pet igala, snage 1517 kW i neto padom 111 m, i protokom 1,55 m ³ /s.
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44

Country: Project: Technical data:	Macedonia HPP Gradecka One two-jet Pelton turbine will generate 920 kW at a net head of 298 m and a discharge of 0,35 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Gradecka Jedna Horizontalna Pelton turbina sa dvije igle, izlazne snage 920 kW i neto padom 298 m i protokom 0,35 m ³ /s.
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45

Country: Project: Technical data:	Macedonia HPP Mala reka One two-jet Horizontal Pelton turbine with an output of 245 kW, net head 133,26 m, flow 0,21 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Mala reka Jedna horizontalna Pelton turbina sa dvije igle izlazne snage 245 kW, neto padom sa 133,26 m i protokom 0,21 m ³ /s.
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46

Country: Project: Technical data:	Macedonia HPP Kriva Reka I-II One two-jet Pelton turbine with an output of 549 kW and a five-jet Pelton turbine with an output of 343 kW. Net head of turbines is 103,8 m i 59,68 m. Discharge is 0,6 m ³ /s and 0,65 m ³ /s.	Država: Projekat: Tehnički podaci:	Makedonija HPP Kriva Reka I-II Jedna Horizontalna Pelton turbina izlazne snage 549 kW i jedna Vertikalna turbina sa pet igala izlazne snage 343 kW. Neto pad turbina je 103,8 m i 59,68 m. Protok je 0,6 m ³ /s i 0,65 m ³ /s.
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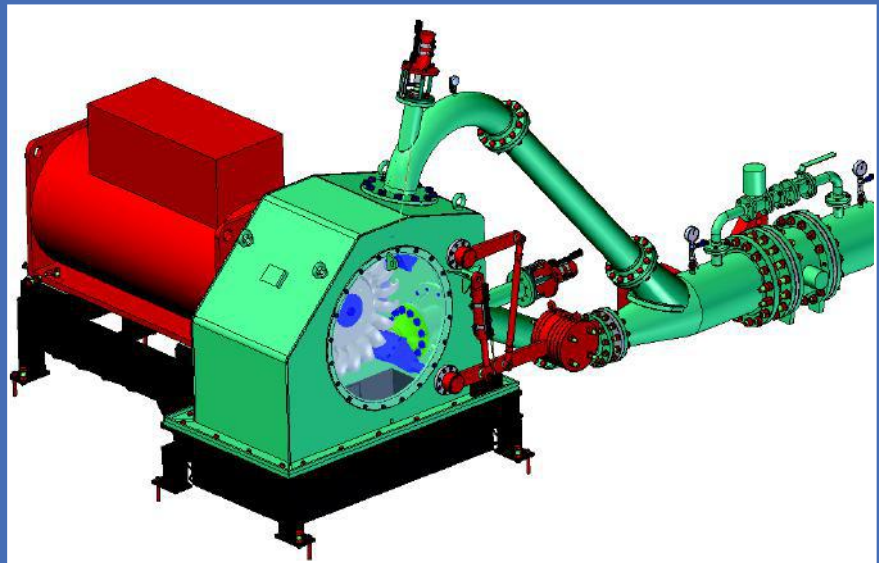
47

Country: Project: Technical data:	Italy HPP Marengello One horizontal Kaplan Pit Turbine with an output of 781 Kw. The three-blade Kaplan runner is with diameter of 2,25 m. The net head is 3,67 m and the rated discharge is 24 m ³ /s.	Država: Projekat: Tehnički podaci:	Italija HPP Marangello Jedna horizontalna Kaplan Pit turbine sa izlaznom snagom od 781 kW. Kaplan rotor sa tri lopatice je prečnika 2,25 m. Neto pad je 3,67 m i protok 24 m ³ /s.
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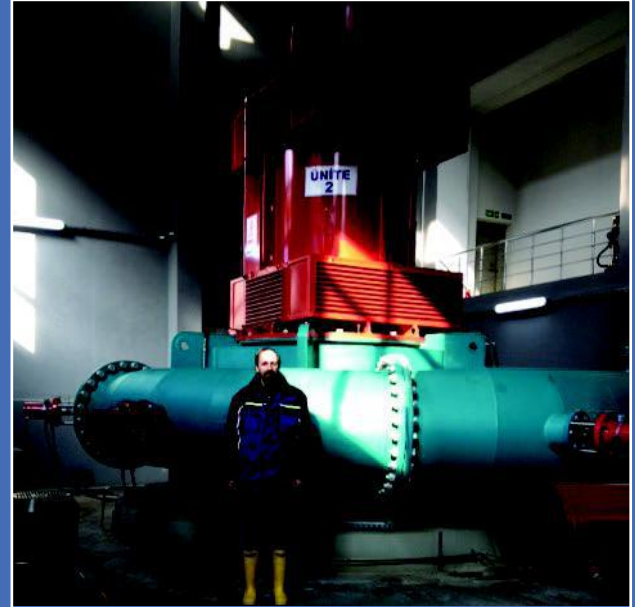
48

Country: Project: Technical data:	Macedonia HPP Toranica One five-jet Pelton turbine with an output of 658 kW, flow 0,4 m ³ /s, net head 185, 85 m.	Država: Projekat: Tehnički podaci:	Makedonija HPP Toranica Jedna Pelton turbina sa dvije igle izlazne snage 658 kW, protokom od 0,4 m ³ /s i neto padom 185,85 m.
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51

Country: Project: Technical data:	Turkey HPP Telli I-II Two (2) six-jet Pelton turbines with a total output of 10 MW, net head 197,15 m, flow 2,9 m ³ /s .	Država: Projekat: Tehnički podaci:	Turska HPP Telli I-II Dvije Vertikalne Pelton turbine sa totalnom izlaznom snagom od 10 MW, neto padom od 197,15 m i protokom 2,9 m ³ /s.
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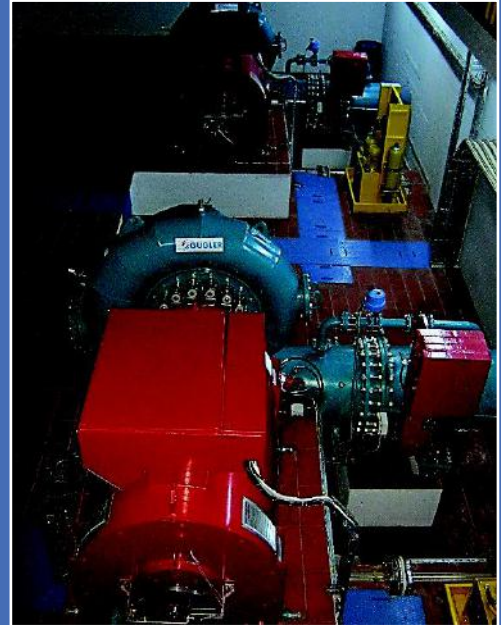
52

Country: Project: Technical data:	Rwanda HPP Mountain Tea The plant is equipped with two (2) five-jet, vertical Pelton turbines generating nearly 4,3 MW at a net head of 120m and a discharge of 4 m ³ /s.	Država: Projekat: Tehnički podaci:	Ruanda HPP Mountain Tea Projekat je opskrbljen sa 2 vertikalne Pelton turbine sa pet igala, izlazne snage 43 MW i neto padom od 120 m sa protokom od 4 m ³ /s.
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53

Country: Project: Technical data:	Turkey HPP Ücgen The plant is equipped with two horizontal turbines generating nearly 3,5 MW at a net head of 113 m and a discharge of 1,75 m ³ /s.	Država: Projekat: Tehnički podaci:	Turska HPP Ücgen Za projekat je isporučeno dvije horizontalne turbine izlazne snage 3,5 MW i neto padom 113 m i protokom 1,75 m ³ /s.
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54

Country: Project: Technical data:	Turkey HPP Piro The plant is equipped with two horizontal turbines generating nearly 4,5 MW at a net head of 52,70 m and a discharge of 9 m ³ /s.	Država: Projekat: Tehnički podaci:	Turska HPP Piro Na radilište su isporučene dvije horizontalne turbine sa izlaznom snagom 4,5 MW i neto padom od 52,70 m i protokom 9 m ³ /s.
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55

Country: Project: Technical data:	Sri Lanka HPP Owala Consist supply of two (2) vertical Kaplan Turbines with a total output of 3,4 MW. The net head is 5,9 m and the maximum discharge is 32 m ³ /s.	Država: Projekat: Tehnički podaci:	Šri Lanka HPP Owala Isporuca sadrži dvije vertikalne Kaplan turbine sa izlaznom snagom 3,4 MW. Neto pad je 5,9 m i maksimalni protok je 32 m ³ /s.
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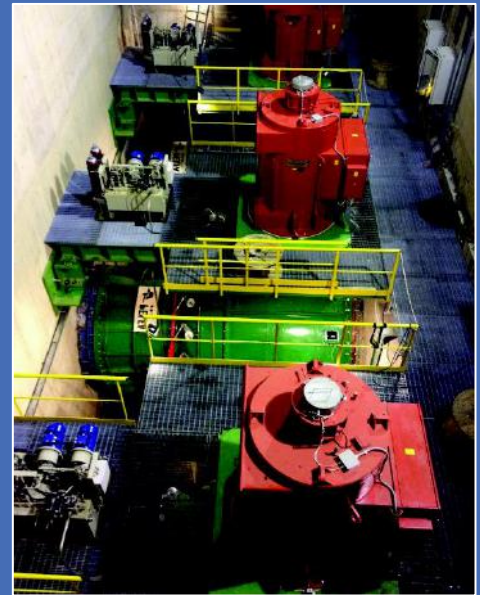
56

Country: Project: Technical data:	Armenia HPP Geghi Dam Consist two (2) Francis turbines with a total output of 5,3 MW. Neto head for one turbine is 66 m and for other 70 m. Discharge flow is 5,4 m ³ /s and 2,7 m ³ /s.	Država: Projekat: Tehnički podaci:	Armenija HPP Geghi Dam Projekat sadrži dvije Francis horizontalne turbine sa izlaznom snagom 5,3 MW. Neto pad za jednu turbinu je 66 m i za drugu je 70 m. Protoci su 5,4 i 2,7 m ³ /s.
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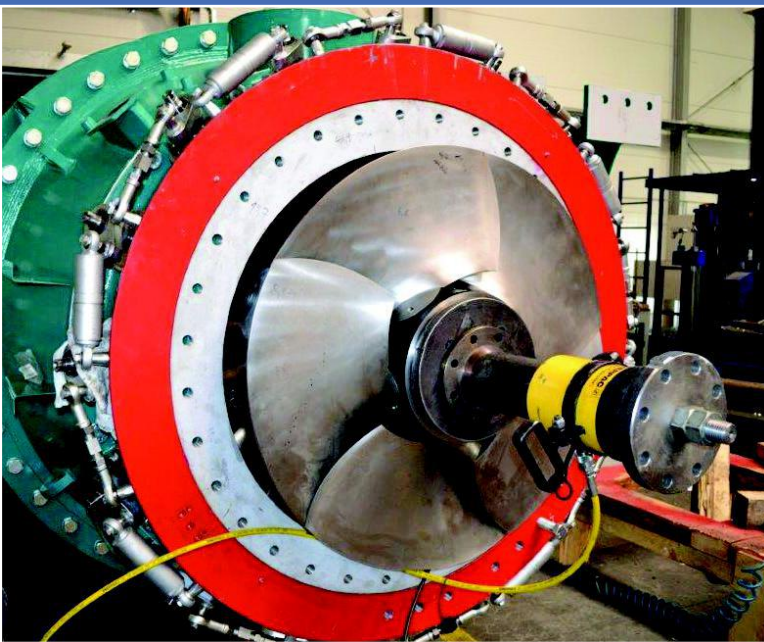
57

Country: Project: Technical data:	Italy HPP Fiano Romano(PELFA) Three (3) vertical Kaplan Turbines with a total output of 3,9 MW for the hydro power plant HPP Fiano Romano-ROMA .	Država: Projekat: Tehnički podaci:	Italija HPP Fiano Romano(PELFA) Tri vertikalne Kaplan turbine sa totalnom izlaznom snagom od 3,9 MW izrađena za projekat HPP Fiano Romano u Rimu.
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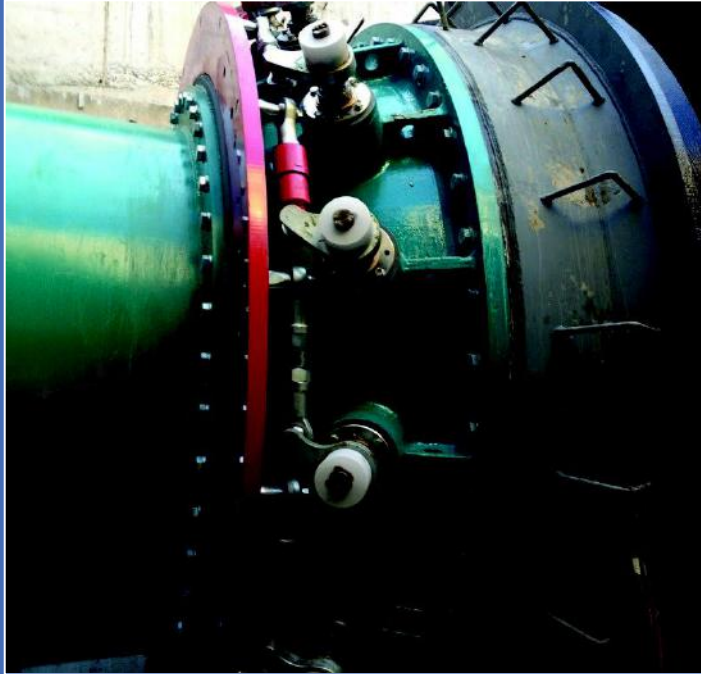
58

Country: Project: Technical data:	Italy HPP Sillaro One (1) vertical Kaplan Turbines with a total output of 458 kW. The net head is 10,2 m and the maximum discharge is 5 m ³ /s.	Država: Projekat: Tehnički podaci:	Italija HPP Sillaro Jedna vertikalna Kaplan turbina sa ukupnom izlaznom snagom 458 kW. Neto pad je 10,2 m a maksimalni protok je 5 m ³ /s.
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59

Country:	Bulgaria	Država:	Bugarska
Project:	HPP Carevets	Projekat:	HPP Caravets
Technical data:	Two (2) Horizontal Kaplan Turbines with a total output of 1105 kW. Net head is 5 m and maximum discharge is 25 m ³ /s.	Tehnički podaci:	Dvije horizontalne Kaplan turbine sa izlaznom snagom 1105 kW. Neto pad je 5 m i maksimalni protok je 25 m ³ /s.



60

Country:	Bosnia and Herzegovina	Država:	Bosna i Hercegovina
Project:	HPP Zapeće	Projekat:	HPP Zapeće
Technical data:	Two (2) Francis turbines with an output of 2668 kW and 1384 kW, net head 80,79 m and discharge 1,85 m ³ /s.	Tehnički podaci:	Dvije Francis turbine sa izlaznom snagom 2668 kW i 1384 kW i neto padom 80,79 m i protokom 1,85 m ³ /s.



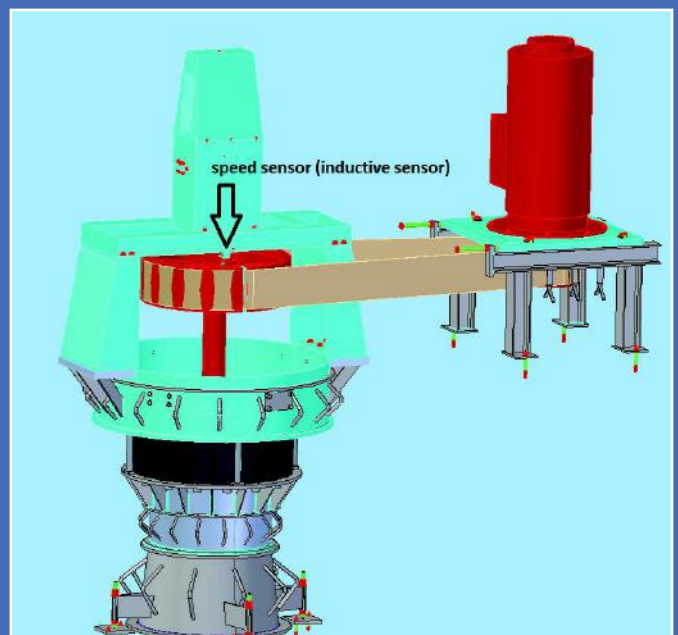
61

Country: Project: Technical data:	Turkey HPP Kizilcam Two (2) Francis horizontal turbines with an output of 900 kW and 480 kW respectively. Net head is 78 m and discharge is 1,3 and 0,7 m ³ /s.	Država: Projekat: Tehnički podaci:	Turska HPP Kizilcam Dvije horizontalne Francis turbine izlazne snage 900kW i 480kW. Neto pad je 78 m i protok je 1,3 i 0,7 m ³ /s.
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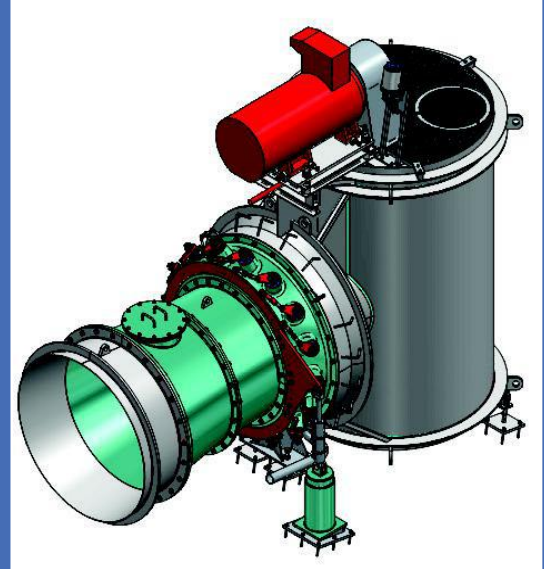
62

Country: Project: Technical data:	Italy HPP San Giovanni Bianco Turbine installed is with power output of 225 kW at a net head of 5,6 m and a discharge of 4,5 m ³ /s.	Država: Projekat: Tehnički podaci:	Italija HPP San Giovanni Bianco Instalirana turbina je sa snagom 225 kW i neto padom 5,6 m i protokom 4,5 m ³ /s.
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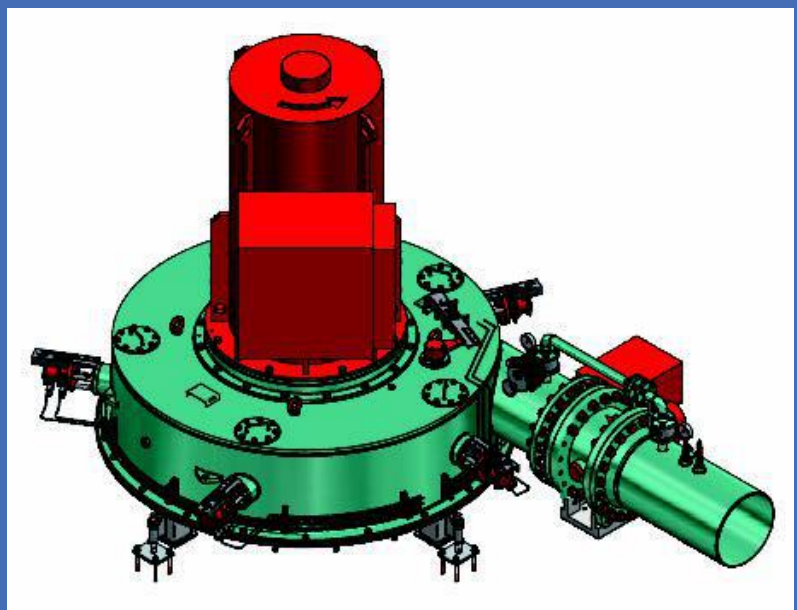
63

Country: Project: Technical data:	Italy HPP Porta Mulina Vertical Kaplan turbine with a belt drive and power output 342 kW, net head 3 m and flow 12 m ³ /s.	Država: Projekat: Tehnički podaci:	Italija HPP Porta Mulina Vertikalna Kaplan turbina sa kaišom izlazne snage 342 kW, neto pada 3 m i protoka 12 m ³ /s.
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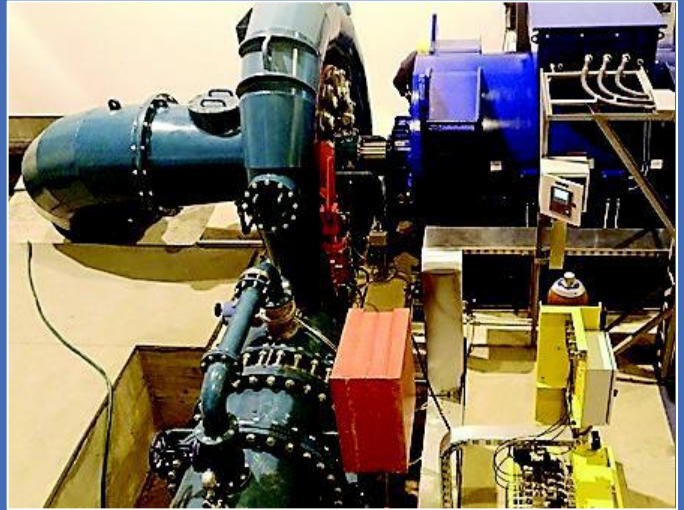
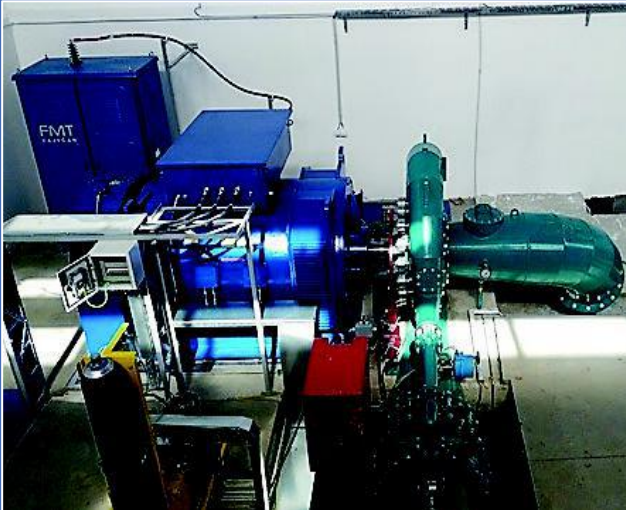
64

Country: Project: Technical data:	Panama HPP ECO Tizingal Vertical Pelton turbine with an output 741 KW, net head 154,4 m and flow 0,44 m ³ /s.	Država: Projekat: Tehnički podaci:	Panama HPP ECO Tizingal Vertikalna Pelton turbina sa izlaznom snagom 741 kW, neto padom 154,4 m i protokom 0,44 m ³ /s.
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65

Country: Project: Technical data:	Bosnia and Herzegovina HPP Govza Two (2) Francis horizontal turbines with an output of 4020 kW and 1680 kW respectively, net head 122,02 m and discharge 3,4 and 1,4 m ³ /s.	Država: Projekat: Tehnički podaci:	Bosna i Hercegovina HPP Govza Dvije horizontalne Francis turbine sa izlaznom snagom 4020 kW i druga 1680 kW, neto pad je 122,02 m i protok 3,4 i 1,4 m ³ /s.
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66

Country: Project: Technical data:	Albania HPP Gostivisht One Pelton Vertical turbine with an output of 702 kW, net head 80 m and flow 1 m ³ /s.	Država: Projekat: Tehnički podaci:	Albanija HPP Gostivisht Jedna vertikalna Pelton turbina izlazne snage 702 kW, neto pada 80 m i protokom 1 m ³ /s.
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67

Country: Project: Technical data:	Rwanda HPP Giciye II Two (2) Pelton Vertical turbines with the same output of 2148 kW, net head 121,9 m and discharge 2 m ³ /s.	Država: Projekat: Tehnički podaci:	Ruanda HPP Giciye II Dvije vertikalne Pelton turbine sa istom izlaznom snagom 2148 kW, neto padom od 121,9 m i protokom 2 m ³ /s.
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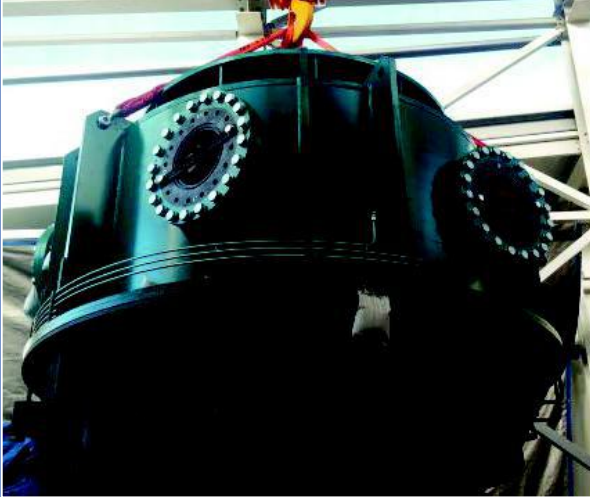
68

Country: Project: Technical data:	Colombia HPP Alejandria Two (2) Francis horizontal turbines with the same output of 7689 kW, net head 106,5 m and discharge 8 m ³ /s.	Država: Projekat: Tehnički podaci:	Kolumbija HPP Alejandria Dvije horizontalne Francis turbine sa istom izlaznom snagom od 7689 kW, neto padom od 106,5 m i protokom 8 m ³ /s.
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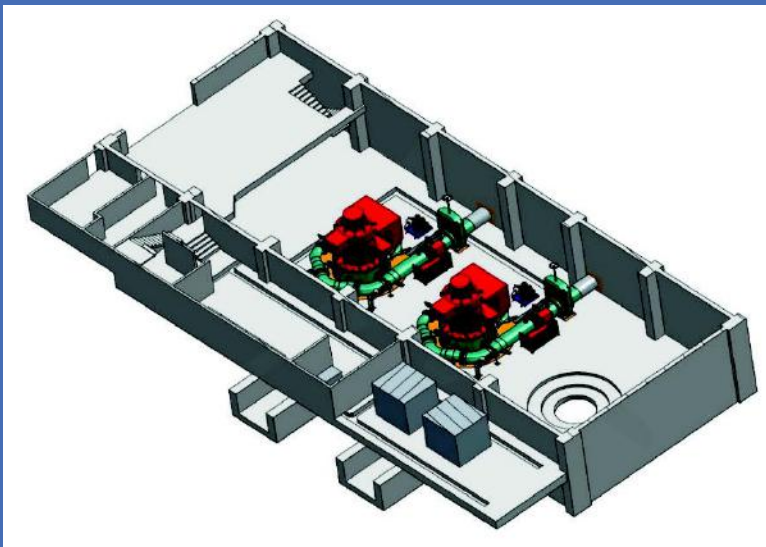
69

Country: Project: Technical data:	Chile HPP Tranquil One Pelton Vertical turbines with the output of 3267 kW, net head 168,5 m and discharge 2,2 m ³ /s.	Država: Projekat: Tehnički podaci:	Čile HPP Tranquil Jedna Pelton vertikalna turbina sa izlaznom snagom od 3267 kW, neto padom 168,5 m i protokom 2,2 m ³ /s.
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70

Country: Project: Technical data:	Indonesia HPP Krueng Isep Consist two (2) Vertical Pelton turbines with output power 6631 kW each, net head is 333,02 m and discharge is 2,275 m ³ /s.	Država: Projekat: Tehnički podaci:	Indonezija HPP Krueng Isep Sadrži dvije vertikalne Pelton turbine sa izlaznom snagom od 6631 kW svaka i neto padom od 333,02 m i protokom od 2,275 m ³ /s.
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71

Country:	Austria	Država:	Austrija
Project:	HPP Hintergössgraben	Projekat:	HPP Hintergössgraben
Technical data:	One Pelton Vertical turbine with the output of 1034 kW, net head 111,85 m and discharge 1,05 m ³ /s.	Tehnički podaci:	Jedna Pelton vertikalna turbina sa izlaznom snagom od 1034 kW, neto padom 111,85 m i protokom 1,05 m ³ /s.



72

Country:	Sweden	Država:	Švedska
Project:	HPP Fäbodbäcken	Projekat:	HPP Fäbodbäcken
Technical data:	For this project is supplied two Francis horizontal turbine with output 621 kw, net head 45,4 m and discharge 1,5 m ³ /s and second turbine with maximum output 586,6 kW, net head 43,1 m and the same discharge.	Tehnički podaci:	Za ovaj projekat su isporučene dvije horizontalne Francis turbine sa izlaznom snagom 621 kW, neto padom 45,4 m i protokom 1,5 m ³ /s i druga turbina sa izlaznom snagom 586,6 kW, neto padom 43,1 m i istim protokom.



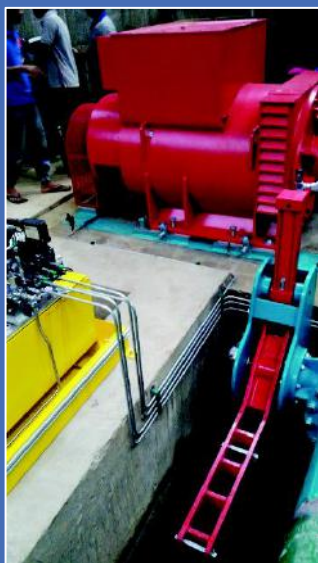
73

Country:	Indonesia	Država:	Indonezija
Project:	HPP Muara	Projekat:	HPP Muara
Technical data:	Two (2) Francis horizontal turbines with the same output of 1120,9 kW, net head 94 m and discharge 1,3 m ³ /s.	Tehnički podaci:	Dvije horizontalne Francis turbine iste izlazne snage od 1120,9 kW, neto padom 94 m i protokom 1,3 m ³ /s.



74

Country:	Sri Lanka	Država:	Šri Lanka
Project:	HPP Moragaha Oya	Projekat:	HPP Moragaha Oya
Technical data:	For this project is supplied two Francis horizontal turbine with output 960,2 kW, net head 75,88 m and discharge 1,4 m ³ /s and second turbine with maximum output 616 kW, the same net head and with discharge 0,9 m ³ /s.	Tehnički podaci:	Za ovaj projekat su isporučene dvije horizontalne Francis turbine sa izlaznom snagom 960,2 kW, neto padom 75,88 m i protokom 1,4 m ³ /s i druga turbina sa izlaznom snagom 616 kW, istim neto padom i protokom 0,9 m ³ /s.



75

Country:	Colombia	Država:	Kolumbija
Project:	HPP Cantayus	Projekat:	HPP Cantayus
Technical data:	Two Francis horizontal turbine with the same characteristics, output power 2203 kW, net head 93,4 m and discharge 2,6 m ³ /s.	Tehnički podaci:	Dvije horizontalne Francis turbine sa istim karakteristikama, izlaznom snagom 2203 kW, neto padom 93,4 m i protokom 2,6 m ³ /s.



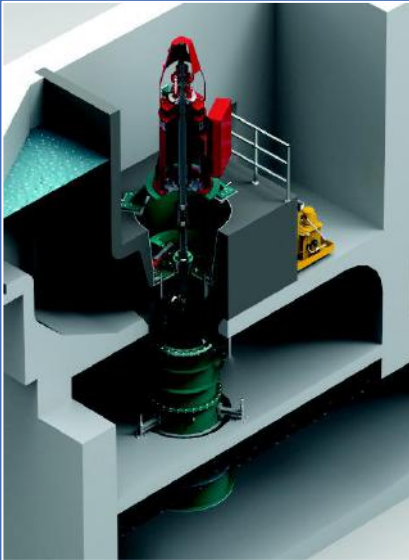
76

Country:	Italy	Država:	Italija
Project:	HPP Jovencan	Projekat:	HPP Jovencan
Technical data:	For this project is supplied one Kaplan Bulb turbine with output 761 kW, net head 3,5 m and discharge 25 m ³ /s.	Tehnički podaci:	Za ovaj projekat je isporučena jedna Kaplan Bulb turbina sa izlaznom snagom 761 kW, neto padom 3,5 m i protokom 25 m ³ /s.



77

Country: Project: Technical data:	Austria HPP Kapfenberg For this project in Austria we made preassembly of complete turbine. Turbine output is 225 kW, neto head 7,5 m and discharge 3 m ³ /s.	Država: Projekat: Tehnički podaci:	Austrija HPP Kapfenberg Za ovaj projekat u Austriji, mi smo odradili predmontažu kompletne turbine. Izlazna snaga turbine je 223kW, neto pad 7,5 m I protok 3 m ³ /s.
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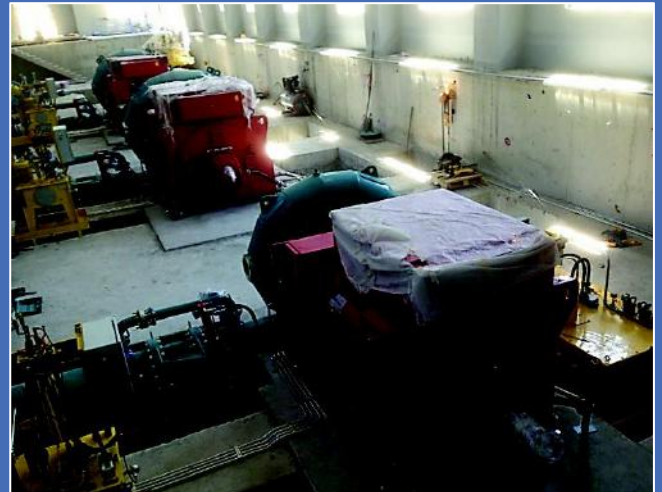
78

Country: Project: Technical data:	Spain HPP Lintau For this project in Spain is preassembled runner and drive train for two Kaplan Vertical turbines. Diametar of runner is 1630 mm and weight is 2198,6 kg.	Država: Projekat: Tehnički podaci:	Španjolska HPP Lintau Za ovaj projekat u Španjolskoj je predmontiran rotor i pogonski mehanizam za dvije vertikalne Kaplan turbine. Prečnik rotora je 1630 mm a težina 2198,6 kg.
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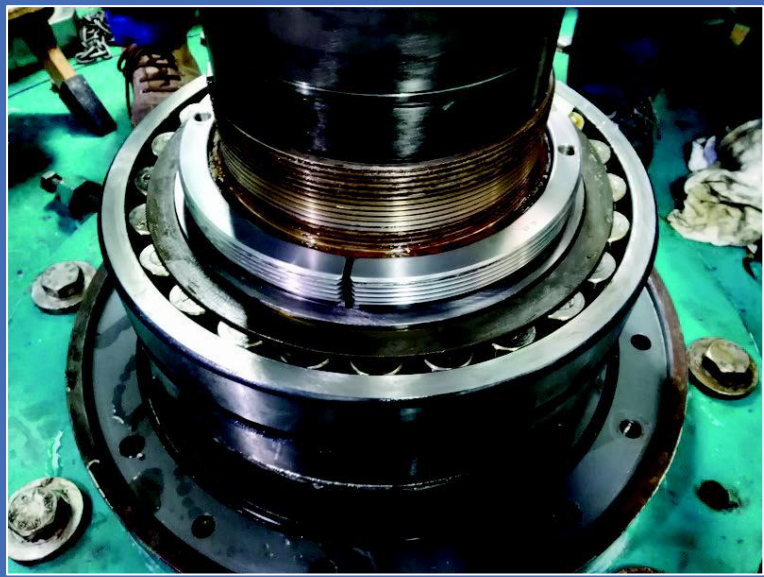
79

Country: Project: Technical data:	Turkey HPP Karatas Three Francis horizontal turbine, two of them with the same characteristics, output power 3866 kW and discharge 4 m ³ /s, and one with 2223 kW output and discharge 2,3 m ³ /s. Net head is 106,646 m.	Država: Projekat: Tehnički podaci:	Turska HPP Karatas Tri horizontalne Francis turbine, dvije sa istim karakteristikama, izlaznom snagom 3866 kW i protokom 4 m ³ /s, i jedna sa 2223 kW izlazne snage i protokom 2,3 m ³ /s. Neto pad je 106,646 m.
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80

Country: Project: Technical data:	Italy HPP Cannucciaro For this project in Italy, this year we performed service – change of the bearing and testing. Intervention was successful on pleasure of our customer.	Država: Projekat: Tehnički podaci:	Italija HPP Cannucciaro Za ovaj projekt u Italiji ove godine izvršili smo uslugu - promjenu ležaja i ispitivanje. Intervencija je bila uspješna na zadovoljstvo našeg klijenta.
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Country: Project: Technical data:	Kenya HPP Gihira For one old Voith Hydropower plant in Kenya, we performed refurbishment of turbine and changed some parts with new ones. Our team is also in charge for commissioning of this power plant after finished all works.	Država: Projekat: Tehnički podaci:	Kenija HPP Gihira Za jednu staru Voith hidroelektranu u Keniji obavili smo rekonstrukciju turbine i izmijenili stare dijelove sa novima. Naš tim je također zadužen za puštanje u rad ove elektrane nakon završetka svih radova.
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Tim angažovan na montaži i puštanju u rad malih hidroelektrana
Team members involved in Assembly and commissioning of small hydropower plants



Ї.д.о.о. Колектив (Ї доо manpower)



Č.J. d.o.o.

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