



# PUMP STORAGE HYDRO POWER STATION LIMMERN LINTHAL (CH)

## EMPLOYER

Kraftwerke Linth-Limmern AG KLL, CH-8783 Linthal

## TIME OF COMPLETION

10.2009 – 12.2016

## CONTRACT SUM

CHF 681 Mio.

## EXECUTION OF THE WORK

ARGE Kraftwerk Limmern

## CONSORTIUM PARTNERS

Marti Tunnel AG, CH-3302 Moosseedorf  
Marti AG Bauunternehmung, CH-8050 Zürich  
Marti Technik AG, CH-3302 Moosseedorf  
Toneatti AG, CH-8865 Bilten

## LEAD COMPANY AND TECHNICAL LEAD

Marti Tunnel AG, CH-3302 Moosseedorf

## COMMERCIAL LEAD

Marti AG, Bauunternehmung, CH-8050 Zürich

# PUMP STORAGE HYDRO POWER STATION

## LIMMERN

### LINTHAL (CH)

#### SCOPE OF THE WORKS

Expansion of the power plant with a pumping station storage unit. Increase in total output of 450 to 1,450 MW and the Muttsee storage volume from 9 to 25 million m<sup>3</sup>. The structure will be built on various sites. The management of the construction sites from the Tierfehd valley station is only possible using cable cars.

The structure includes the following stations:

- Tierfehd	817 m.a.s.l.
- Cavern area Limmernsee	1'800 m.a.s.l.
- Ochsenstäfeli Limmernsee	1'854 m.a.s.l.
- Window gallery	2'350 m.a.s.l.
- Lake Muttsee	2'446 m.a.s.l.

#### ACTIVITIES

- 2 pressure shafts in tunnel boring machine jacking, L = 1'050 m, Ø = 5.2 m, 45° L = 1'050 m, Ø = 5.2 m, 45° L = 1'050 m, Ø = 5.2 m, 45° L = 1'050 m
- Machine and transformation cavern for 4 Groups of 250 MW each, Machine cavern L = 150 m x W = 28 m x H = 53 m Transformation cavern L = 131 m x B = 21 m x H = 24 m
- Various connecting tunnels, cavern system OW/UW, total approx. 1'200 m, A = 18 - 29 m<sup>2</sup>
- Access and development galleries in the blasting
- Two underwater tunnels L = 530 m, Ø = 5.5 m
- Upper water pressure tunnel L = 730 m, Ø = 8 m
- Slide chamber
- Muttsee dam L = 1'050 m, H = 35 m
- Surge tank H = 125 m, Ø = 11.7 m
- Inlet and outlet structure Limmern- und Muttsee
- Two concrete plants underground and Muttsee, total quantity concrete = 500'000 m<sup>3</sup>
- Gravel processing plant, wet processing in the Ochsenstäfeli area, dry processing in the Lake Muttsee area
- Landfill management at 1'850 and 2'470 m.a.s.l.

#### GENERAL CONDITIONS

- Fully underground hydropower plant
- Management from the valley only via construction cableways
- High alpine terrain with natural hazards
- Tight space conditions in all construction areas
- Underground hydropower plant



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**Marti Tunnel AG**

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