



# IMPIANTI IDROELETTRICI VALTELLINA

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CENTRALI E OPERE IDRAULICHE/CIVILI

26-9-2019

## TERRITORIO

PROVINCIA DI SONDRIO  
CONFINI

- SVIZZERA N-NE
- BOLZANO E TERNTO E
- BRESCIA S-SE

	Canale derivatore
	Condotta forzata
	Centrale idroelettrica
	Centrale in galleria





Diga/Sbarramento



Sbarramento fluviale

## Impianti VALTELLINA:

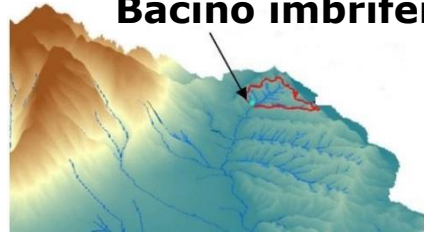


- **4 DIGHE** di competenza statale 
- **3 SBARRAMENTI** di competenza regionale 

# INVASI – OPERE DI PRESA - DERIVAZIONI



**Bacino imbrifero 1000 km<sup>2</sup>**



## **4 Invasi artificiali**



Diga di San Giacomo 1938-1950



Diga di Cancano 1954-1956



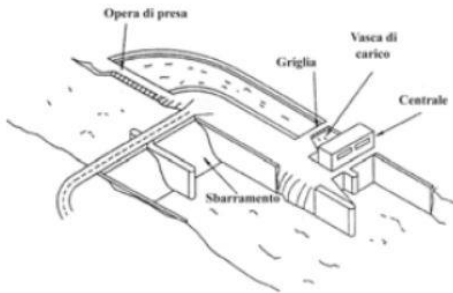
Diga di Val Grosina 1958-1959



Traversa fluviale  
Sernio 1936-1938

**Accumulo 190 Mm<sup>3</sup>**

**(Energia invasabile 630 GWh)**



**43 Opere di presa**

**160 km Canali di derivazione**

# CONSISTENZA IMPIANTI IDROELETTRICI



**10 centrali idroelettriche**

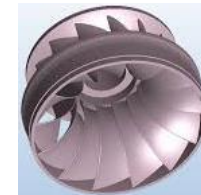
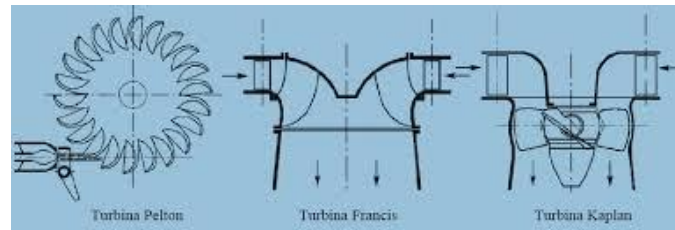
**19 gruppi di produzione**



**13 Pelton**  
(TANDEM Premadio)



**3 Kaplan**



**6 Francis**

**784 MW** Potenza complessiva

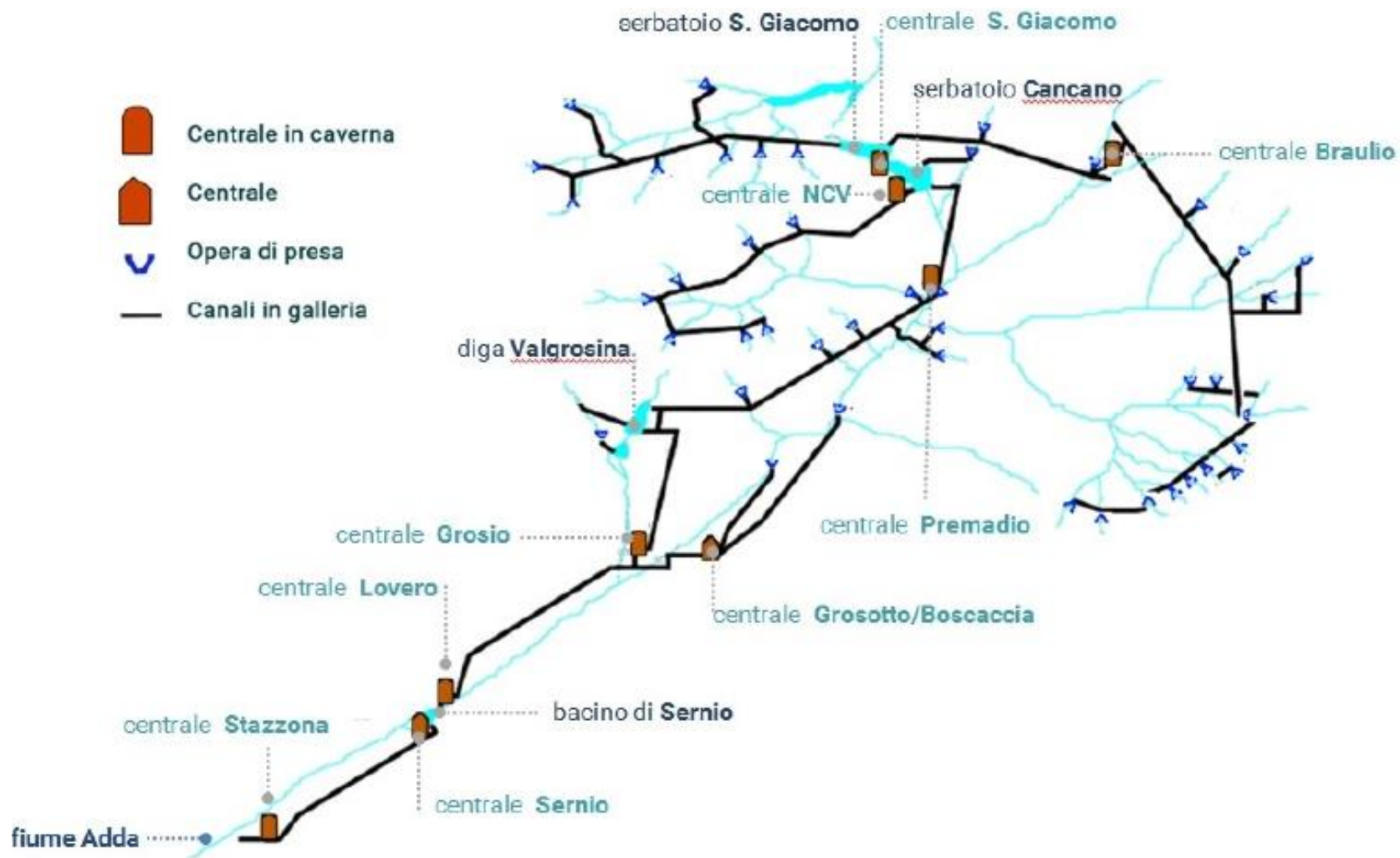
**2000 GWh** Produzione annua  
(consumo annuo Regione Lombardia ~ 70.000 GWh)

**89,2 %** Efficienza media di  
conversione energetica

# OPERE DI DERIVAZIONE



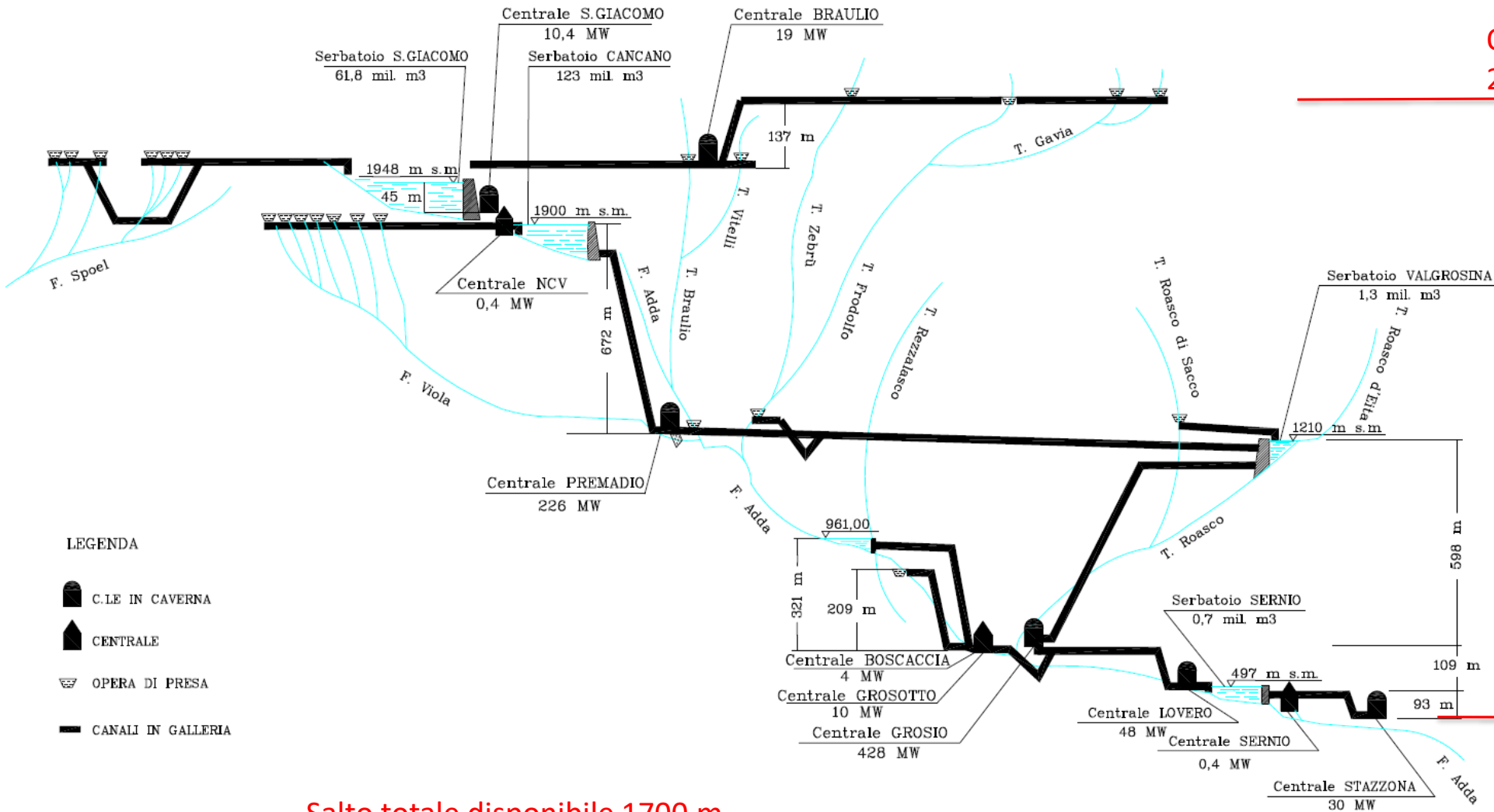
# SCHEMA PLANIMETRICO



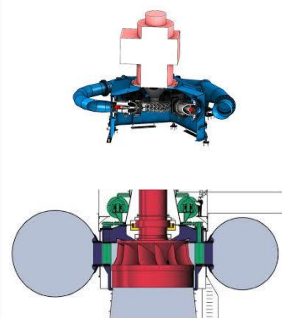
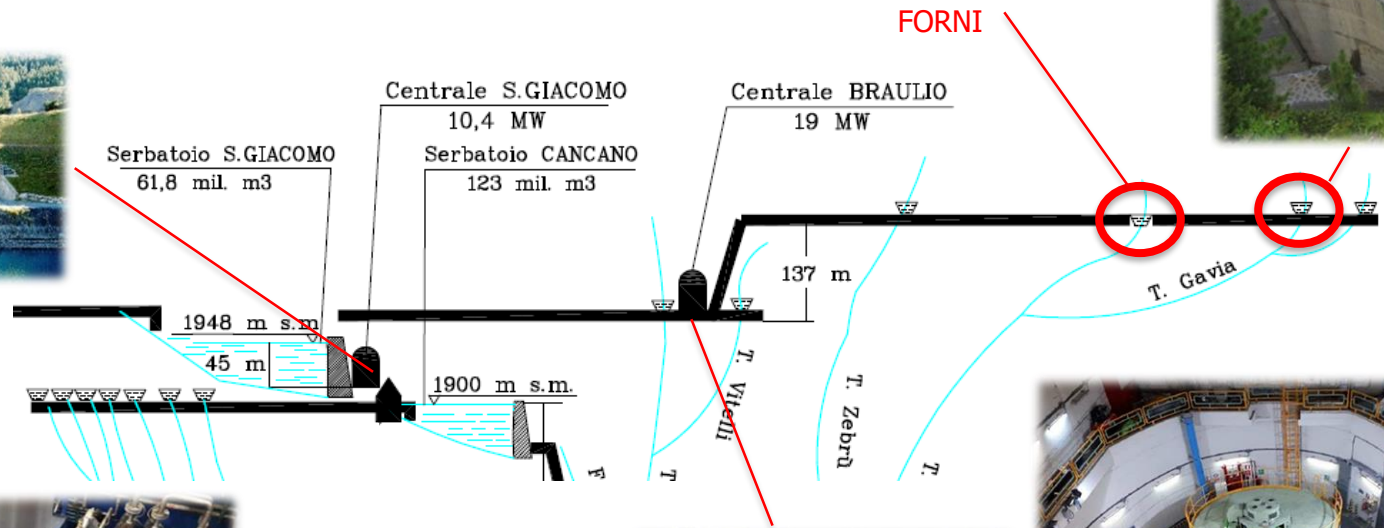
# SCHEMA IDROELETTRICO



Quota  
2100 m



# Sbarramenti - GAVIA e FORNI - Centrali BRAULIO e S. GIACOMO



**SAN GIACOMO**  
9,4 MW

**BRAULIO**  
 $2 \times 9,2 \text{ MW} + 1 \times 1 \text{ MW} = 19,5 \text{ MW}$

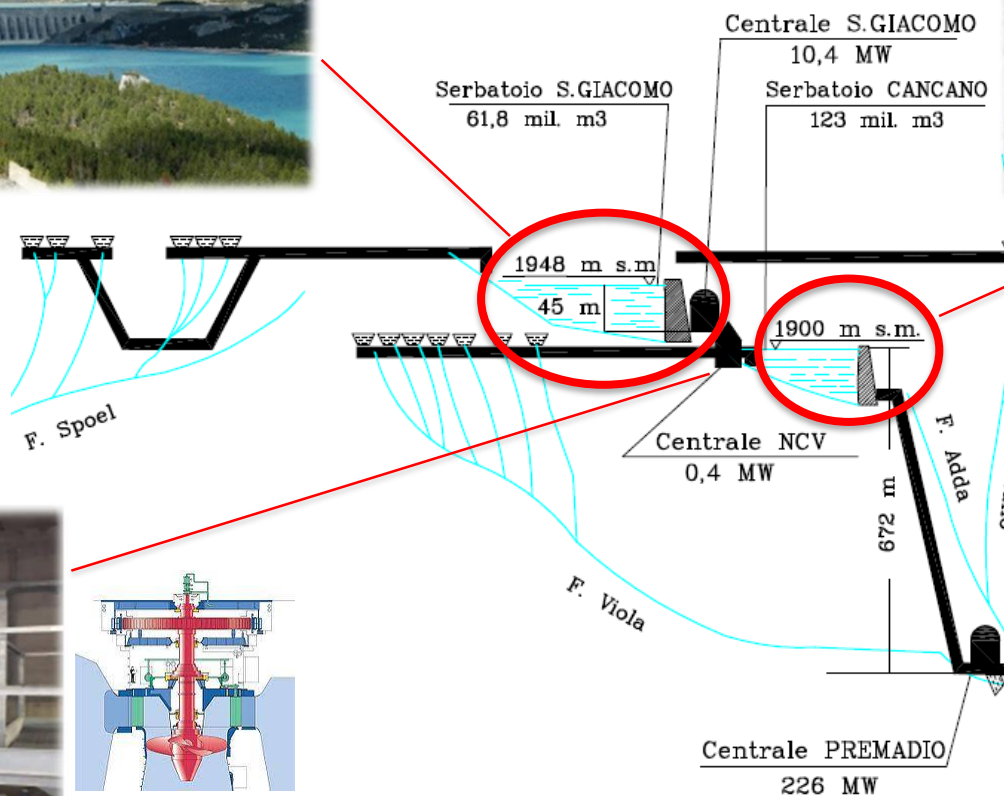
# Dighe – S.GIACOMO e CANCANO – Centrali VIOLA e PREMADIO



SAN GIACOMO DI FRAELE

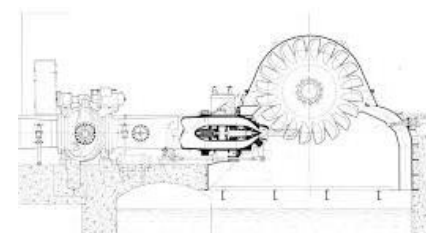


CANCANO



VIOLA

0,4 MW



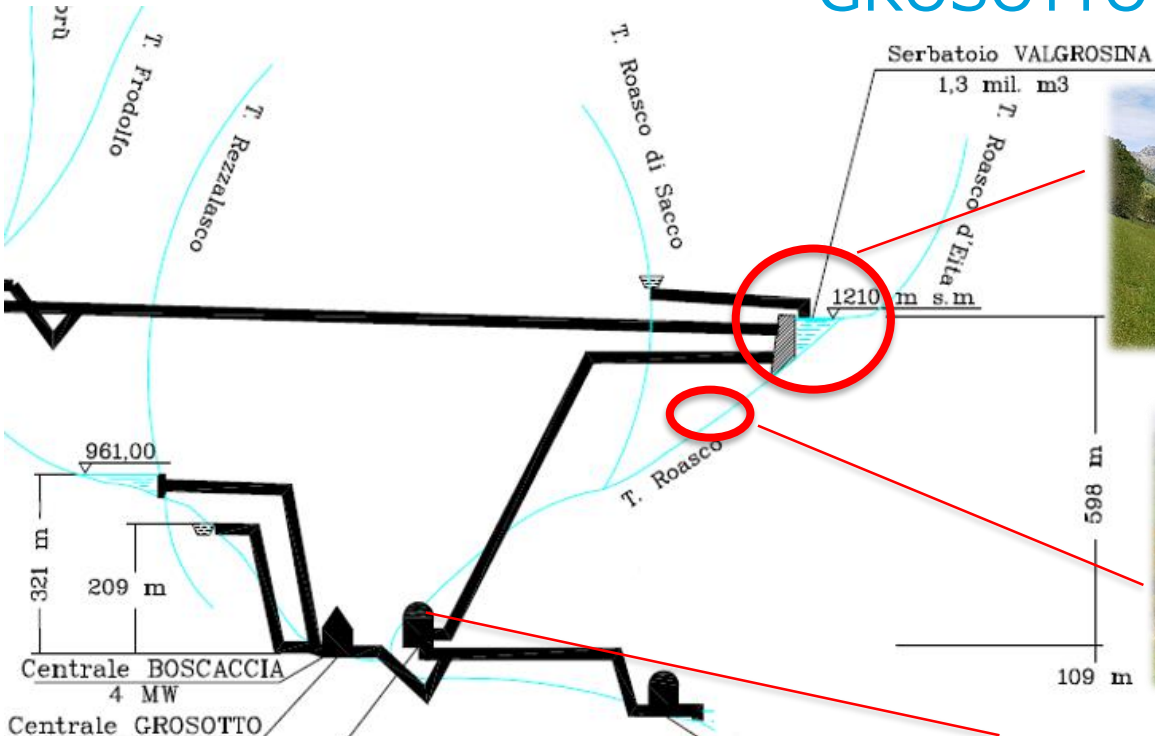
PREMADIO

10

2 x 83 MW + 1 x 78 MW = 245 MW



# Dighe – VALGROSINA e FUSINO - Centrali GROSIO, BOSCAACCIA, GROSOTTO



VALGROSINA




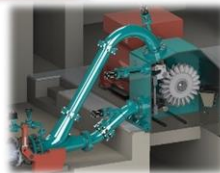
FUSINO



DIGA AD USO INDUSTRIALE PER L'IMPIANTO DI GROSIO (FUNZIONE ANTINCENDIO)



BOSCAACCIA   
4,2 MW



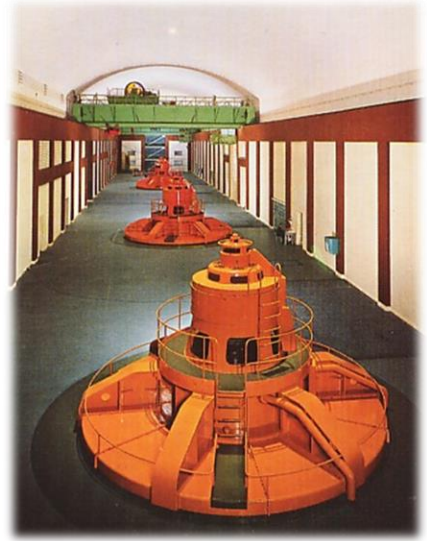
GROSOTTO   
12,5 MW



GROSIO



3 x 107 MW + 1 x 110 MW = 431 MW



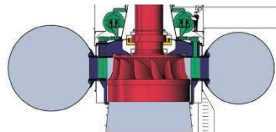
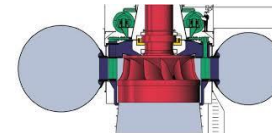
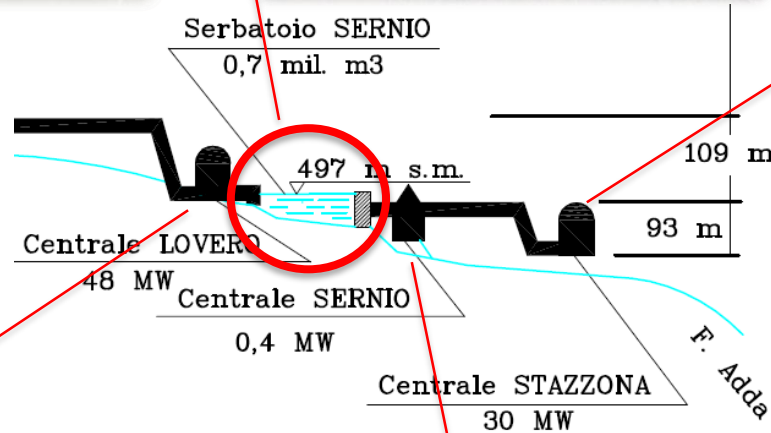
# Traversa - SERNIO - Centrali LOVERO, SERNIO e STAZZONA



VASCONI GROSOTTO



SERNIO



LOVERO



2 x 28,9 MW = 57,8 MW

SERNIO



0,35 MW

STAZZONA



2 x 18,8 MW = 37,6 MW  
12