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## **Extension of the storage-hydropowerplant Kaunertal to a hydropowerplant for pumping and production:**

- highly speculative**
- an old fashion project**
- a backstep for the ecology**

### **1. Present hydropowerplant Kaunertal**

Built: 1961-64):

- Area of watercollection: 279 km<sup>2</sup> with water of different valleys
- Average of yearly water: 323 Mio. m<sup>3</sup>
- Average of yearly power-production: 661 GWh
- Volume of storage-lake Gepatsch: 139 Mio. m<sup>3</sup>
- Average power: 360 MW

### **2. Extension project:**

The **area of water-collection shall be extended to nearly 200%**, compared with now,  
- additional water/year 300 Mio. m<sup>3</sup>

**A new and additional Storage-lake** in Platzertal, 640m above storage-lake Gepatsch

- volume 42 Mio. m<sup>3</sup>
- power for pumping and production: 400 MW
- during 3'000 hours pumping 1'200 GWh/year (gigawatthours) electricity will be consumed
- during 2'250 hours production: 900 GWh/year
- loss of electricity: 300 GWh/year

### **Neu powerstation in Prutz 2**

- additional power 500 MW
- annual production through natural water-collection: 621 GWh/year

**Investement: around € 1'200 millions**

### **3. Critical aspects of that TIWAG-project:**

#### **Environment and water-regime**

300 Mio. m<sup>3</sup> water will be transferred from Ötztal to Kaunertal and into the powertubes.

**How much additional ecological hydropower will be produced?** 621 GWh/year will newly be produced, but 300 GWh/year will be the lost through the storage and pumping-process. The electricity for pumping (1'200 GWh/year) has to be bought from the European market, mainly a mixture of fossil and nuclear power in the night-hours!

#### 4. To build this pumping- and storage powerplant is highly speculativ:

To be profitable, a pumping- and storage-powerplant needs:

- high differences of electricity-prices between low-load-phases and high-consumption-phases
- and the time of these prices of extreme should at least be 2'-3'000 hours per year

These conditions took place in several years between 2000 and 2010. That's why there are/were a lot of similar projects in various European countries.

Several years ago the system was very well known:

Pumping at nights with the cheap power out of nuclear- and coal-powerplants. These plants are not constructed for a flexible load, therefor they produce around the clock, independent from the need of power.

Production during the midday- and evening-hours with high electricity-consumption.

Since some years, the same companies are argueing, that pumping- and storage-powerplants are necessary as compensation for solar- and wind-power, when they are not producing. But this argument is very tricky:

- there are only few hours a day when the compensation is necessary
- the daily hours with formerly best prices, 10 am till 6 pm have now the highest power-production: PV in addition to the old nuclear- and coal-plants. As long as these old plants are producing parallel to the renewables, the electricity-prices during the days will be low.
- with additional PV-installations the peak-prices during the days may definitely be past.

The high investements into these pumping- and storage powerplant will get very long payback-time or even stranded investements.

#### 5. Pumping- and storage powerplant get a lot of competitors :

- Smart-Grid installations: consumers will shift high electricity-consumption to times with low prices and high natural power-production, e.g. waterheater, deepfreezer, washing, drying, loading of electrical vehicals, a.s.o.
- All kinds of batteries, in addition to their PV-installations or specifcly to profit from cheap net-electricity
- Power to gas systems in windfarms and in areas with overloads through renewable, and feedback of the gas into the gaspipelines

#### **Fazit:**

**The Kaunertal-project of TIWAG is:**

**A project of "yesterday" which is based on calculations of former experiences with centralized, huge and inflexible powerplants (mainly nuclear and coal). The extension of long powerlines would be needed, especially in Germany.**

**Pumping- and storage powerplants obstruct the change to the new power-age with mainly decentralized and renewable energyproduction.**

**The Kaunertal-projects will likely become a stranded investement, which has to be paid by the population of Tirol either through taxes nor throught electricity-prices.**