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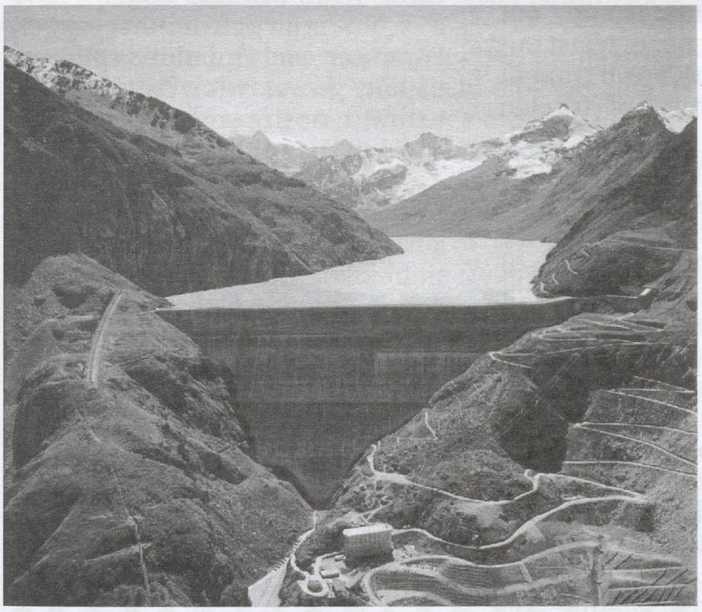
# Concrete giants open up to the public

Some 50 dams and hydropower plants opened their doors, including the 285-metre-high Grande Dixence dam, as part of the first Hydraulic Energy Day.

Alpiq, the largest Swiss utility company, says hydropower has a key role to play in the future and recently announced plans to invest SFr3 billion with partners. But some critics say hydropower has reached its full potential.

Thanks to its topography and high levels of annual rainfall, Switzerland has ideal conditions for the utilization of hydropower, which accounts for around 56 per cent of domestic electricity production - 38 billion kilowatt hours (KWh) per annum.



Grande Dixence dam

According to swisselectric, a body representing electricity grid firms, by 2035 the closure of a number of nuclear power stations, the end of several long-term electricity import contracts and rising consumption (two per cent annually) will result in an energy deficit of around 30 billion KWh.

To secure its long-term energy supply Switzerland adopted a strategy in 2007 based on energy efficiency, renewable energies - including hydropower - large gas-fired power plants and nuclear power, and energy imports.

Dams are popular destinations in Switzerland; every year some 120,000 people visit the Grande Dixence, the world's tallest concrete gravity dam. Hydropower generally benefits from a positive image among the public, says the Swiss water board. It is estimated that ten per cent of Switzerland's projected energy deficit could still be met via hydraulic power.

Over the past 15 to 20 years uncertainties over the liberalization of the electricity market, environmental concerns and costs have been holding back the development of hydropower, say experts. They feel now is the right time to invest SFr2.4 billion in new hydropower facilities and SFr440 million in renovating existing infrastructure.

But 50 years since the first big dams were built in Switzerland, hydropower remains controversial.

Existing facilities need to be managed in strict conformity with federal laws, leaving minimum water levels for aquatic life to survive and resolving the problem of water released brutally at peak hours.

As part of its latest plans Alpiq intends to invest SFr1 billion in a new pumped-storage hydroelectricity plant at Nant de Drance between the Emosson and Old Emosson dams in canton Valais. This will allow water to be pumped and stocked at altitude, offering an immediate, effective way of meeting drops in production.

But WWF criticises pumped-storage hydroelectricity, which it says can affect the environment and can result in up to a 30 per cent loss of energy.

Anton Schleiss, a professor of hydraulic construction at Lausanne's Federal Institute of Technology (EFPL), agreed that around 90 per cent of Switzerland's hydroelectric potential had been exploited, but said the capacity of the dams to produce peak energy could be enlarged.

To boost capacity SFr20-30 billion had to be invested over the next 15-20 years to adapt and renovate existing dams and power plants, many of which were built between the 1950s to 1970s, said the EFPL expert. *from swissinfo*

# Fears rise about shortage of researchers

The Swiss National Science Foundation says there are increasing indications that the country may experience a lack of young academics in the medium term.

As a result, the Foundation said it intended to boost funding to young researchers as a priority.

It noted that as Switzerland was an attractive place to carry out research, universities repeatedly succeeded in employing both top researchers and academics from abroad. But young Swiss academics were "few and far between" in many sectors.

A study commissioned by the Foundation also showed that young women left academic life because of the difficulty of reconciling an academic career with a family, and because they received less career support from professors.

The Foundation described researchers in Switzerland as "very productive", submitting a record 3,439 independent research projects in 2008. *swissinfo*