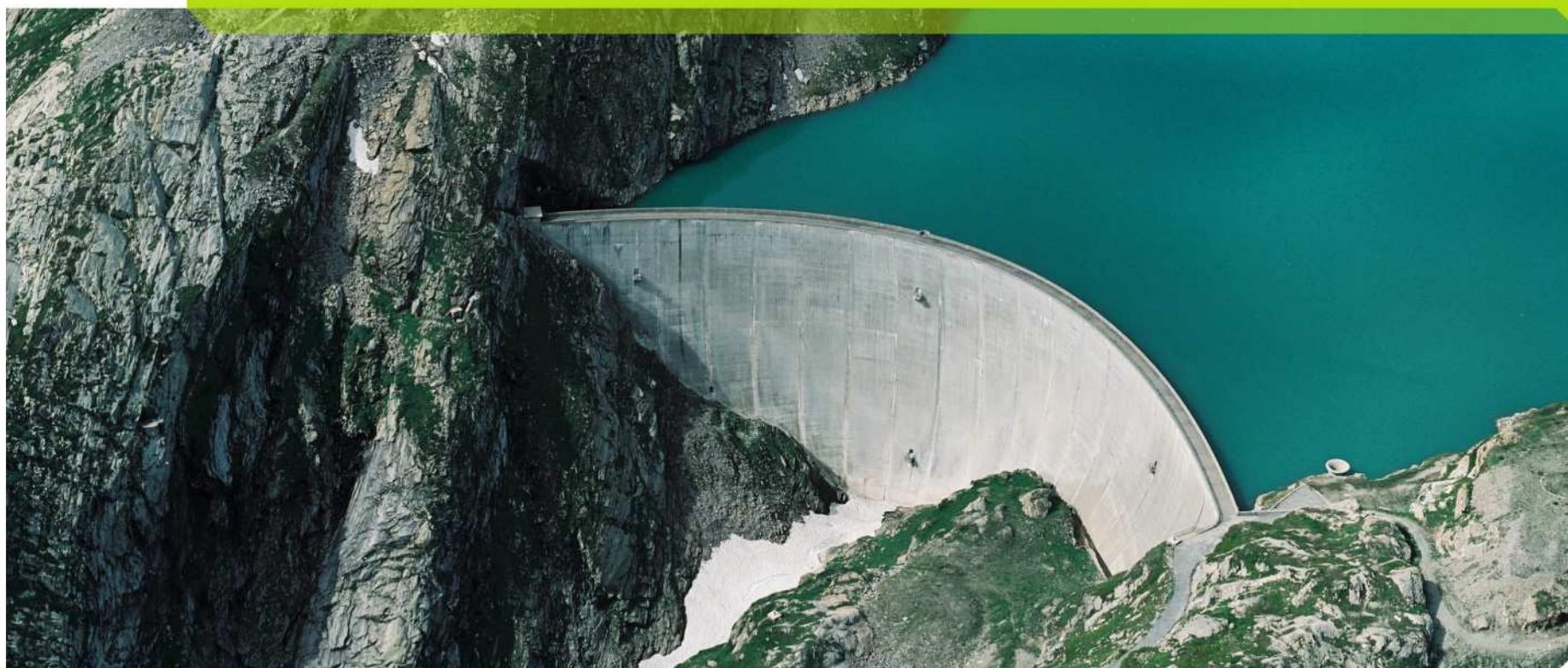




Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Energie BFE
Office fédéral de l'énergie OFEN
Ufficio federale dell'energia UFE
Swiss Federal Office of Energy SFOE

Swiss Hydro Power



20th July 2012



Swiss Hydro Power Contents

- Responsibilities
- Relevance of Swiss Hydro Power
- Dams – overview
- Dams – Grande Dixence (Canton Valais) and other examples
- International relations
- Swiss experience



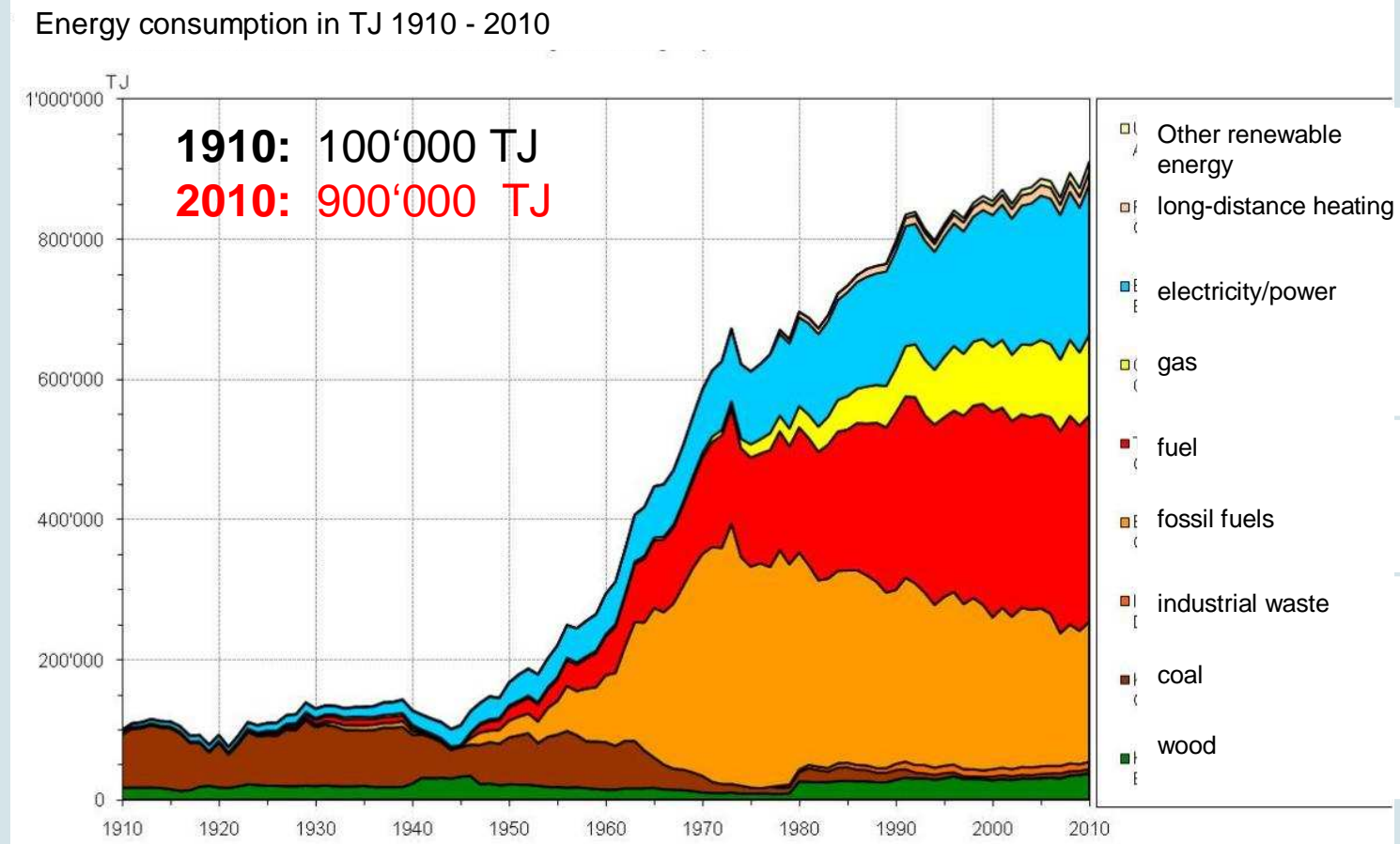
Swiss Hydro Power Responsibilities

Article 76 of the Swiss Federal Constitution on water use:

- 3 It (the Confederation) shall legislate on water protection, on ensuring appropriate residual flow, on hydraulic engineering and the safety of dams, and on measures that influence precipitation.
- 4 The Cantons shall manage their water resources. (...)
- 5 The Confederation, in consultation with the Cantons concerned, shall decide on rights to international water resources.
If Cantons are unable to agree on rights to intercantonal water resources, the Confederation shall decide.



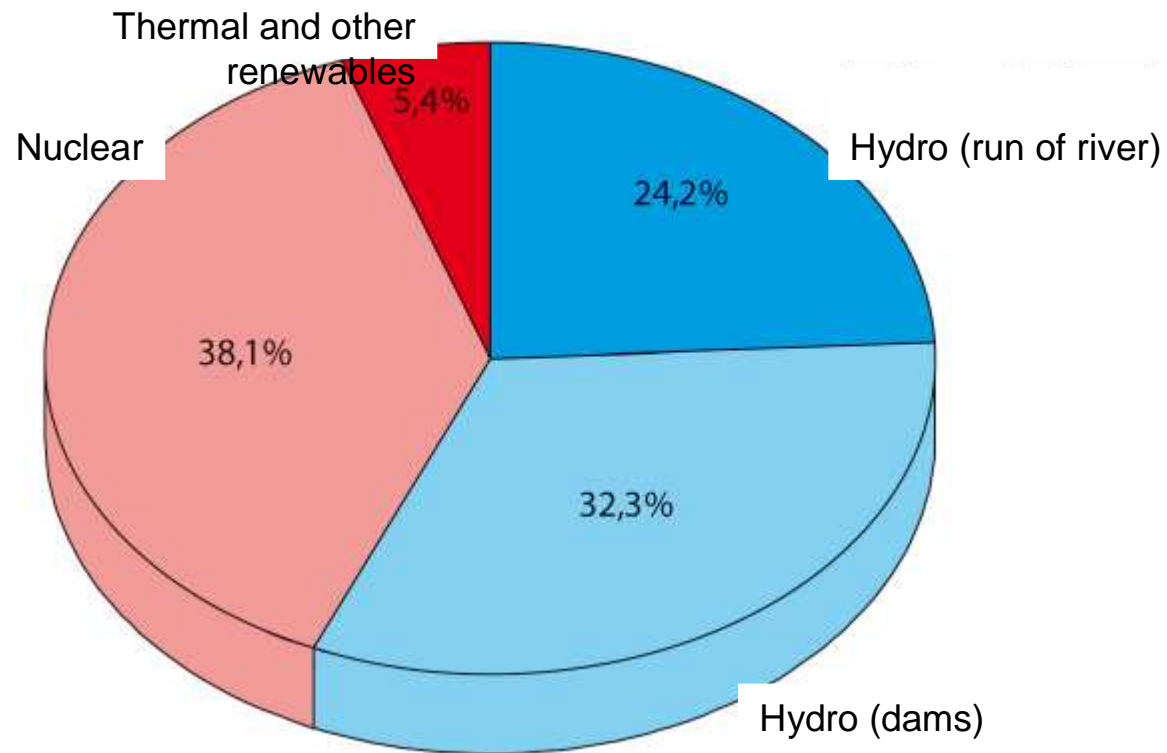
Swiss Hydro Power - Relevance of Swiss Hydro Power energy consumption and energy source



Source: SFOE Energy Statistics for 2010



Swiss Hydro Power - Relevance of Swiss Hydro Power type of power plants

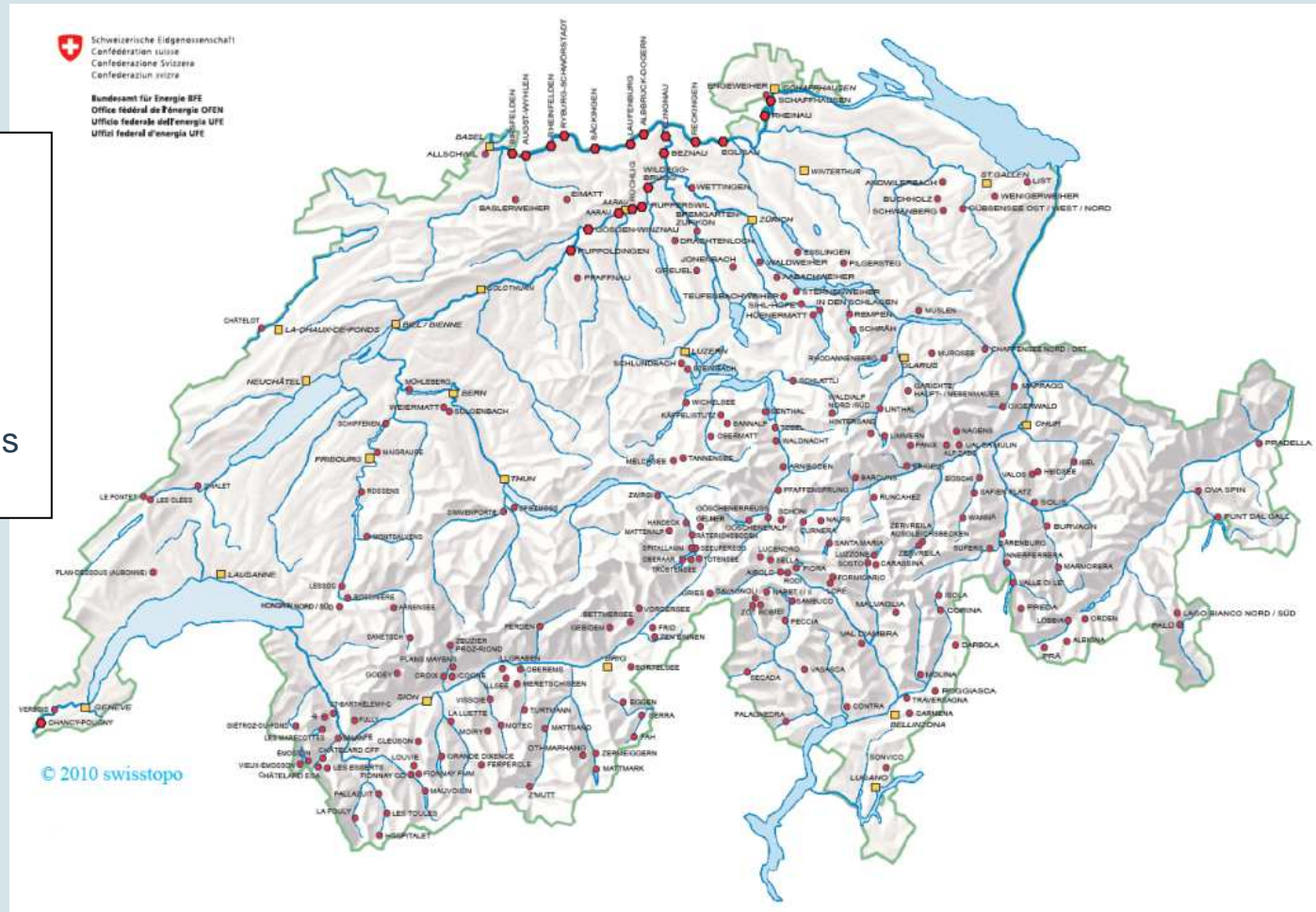


Source: SFOE Energy Statistics for 2010



Swiss Hydro Power Dams - overview

- 222 larger dams (altitude: 4 over 200m, 25 over 100m)
- 20 river dams
- 955 smaller dams registered





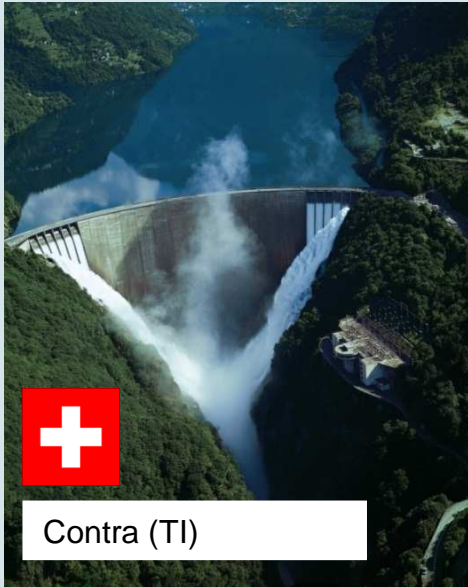
Swiss Hydro Power Dams – Grande Dixence (Canton Valais)

- www.grande-dixence.ch
- operating since 1961
- construction type:
heavy weight / gravity dam
- altitude: 285m
- volume: 400 million m³
- catchment area: 340 km²





Swiss Hydro Power Dams – other examples

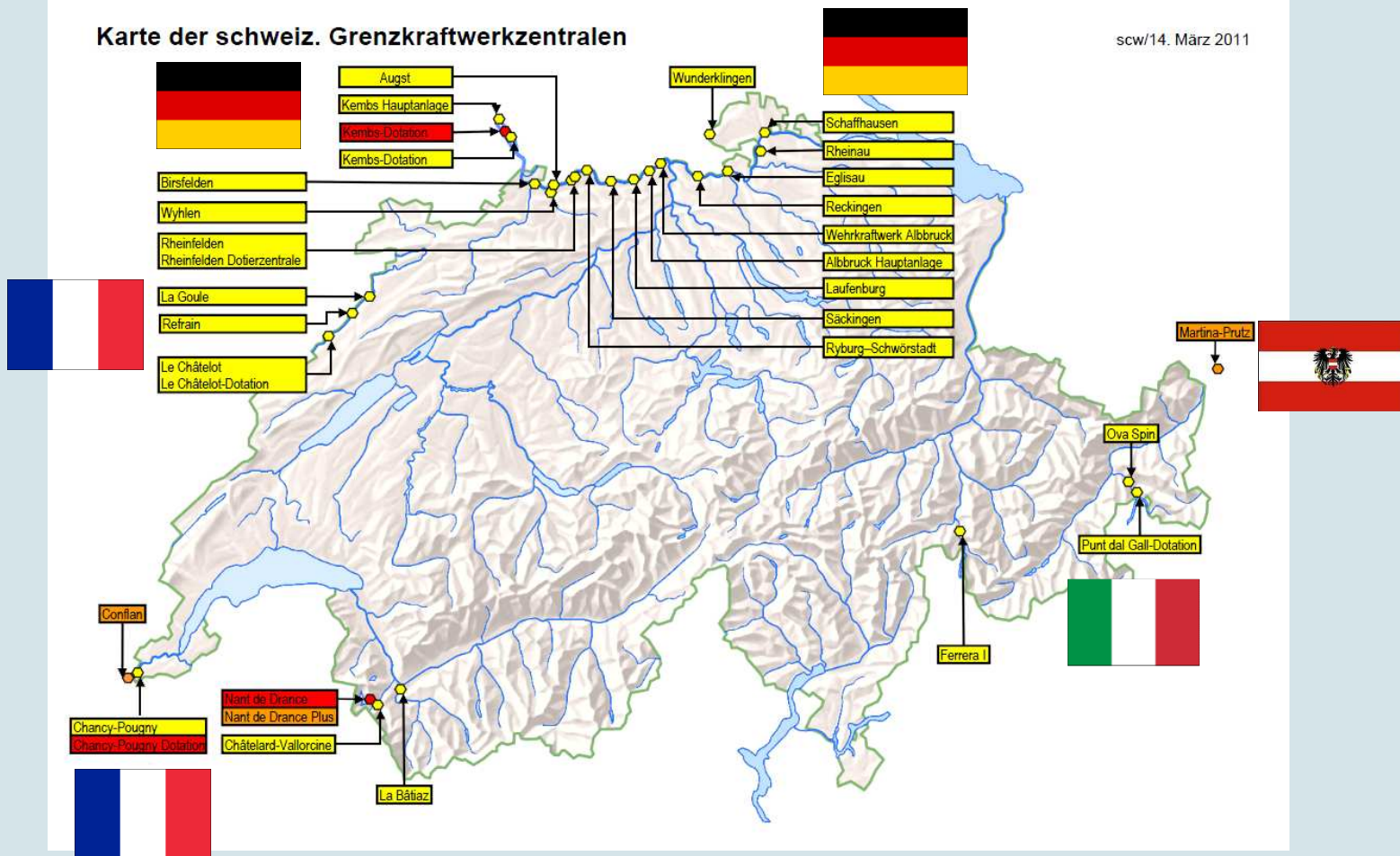




Swiss Hydro Power International relations - overview

Karte der schweiz. Grenzkraftwerkzentralen

scw/14. März 2011





Swiss Hydro Power International relations – relations with Germany (example)

- legal base:
- customary international law
(no-harm-rule, obligation to inform ...)
- international conventions:
- UN-Convention on the law of the non-navigational uses of international watercourses (not yet entered into force)
- Convention on Environmental Impact Assessment in a Transboundary Context (Espoo-Convention; Europe)
- bilateral agreements:
- regulation of the river Rhein
- shipping
- (other themes like taxes, fishing)
- coordinated concessions



Swiss Hydro Power International relations – relations with Germany (example)

- commissions:
- international commission called „Hochrheinkommission“ (established in 1920 for building new power plants)
- working-groups for above all environmental aspects during the construction phase (participation of local and cantonal authority, non-governmental organisations, appellants and so on)

- daily business:
- contacts nearby every day on the operational level
- information exchange
- common activities



Swiss Hydro Power Swiss Experience

- international cooperation is needed for (goal):
- avoiding political distress
- building legal power plants
- solving environmental problems (above/onshore)
- solving energy problems (stability of grids, achieving international aims (for example CO₂-aims Kyoto))
- improving power plants (technical aspects, more energy, cf. <http://www.energiesdienst.de/cms/unternehmen/wasserkraft/neubau.php>)
- improving the safety situation by developing safety standards



Swiss Hydro Power Swiss Experience

- international cooperation needs (resources):
- mutual agreement (diplomacy)
- cooperativeness of the concern countries (not blind trust)
- time
- manpower