DATA CENTERS IN SWITZERLAND
ENERGY RELATED FACTS AND FIGURES
SWISS DATA CENTERS - POWER CONSUMPTION

- 2.1 TWh in 2019, or
- 3.6% of Switzerland’s electricity consumption*

Source: Rechenzentren in der Schweiz - Stromverbrauch und Effizienzpotenzial, BFE Report 2021
**SWISS DATA CENTERS - EFFICIENCY POTENTIAL**

**Data centers (DC) and server rooms (SR) – distribution of power consumption**

**Efficiency potential**: Power consumption could be decreased by around 46% through suitable measures:

- **~20% on DC infrastructure**
  - High system temperatures
  - Rack enclosure
  - Separation of warm and cold isles
  - Free cooling

- **~26% on IT infrastructure**
  - Virtualization
  - Utilization
  - Efficient IT-equipment
SWISS DATA CENTERS – EVOLUTION

Past development
- Power consumption of Swiss DC/SR:
  - moderate increase since 2013, above average compared to the EU

Outlook
- Many new DCs in planning - especially in the Zurich and Lake Geneva areas;
- Large public-cloud providers entering the market (e.g. Microsoft, Oracle, Amazon etc.);
- Power consumption DC/SR **could increase from 2.1 to around 3 to 4 TWh in the next 5 years**

Digitalization effects – positive or negative?
- Direct consumption
- Efficiency gains
- Production and consumption patterns
- Rebound
- Substitution
ENERGY PERSPECTIVES 2050+

- **Hydrogen production** at run-of-river sites (7 PJ)
- **1.5 million** heat pumps
  (today 0.3 million)
- **Wind and geothermal energy**
  with attractive generation profile
- **3.6 million** battery-powered cars
- **45 TWh** from hydropower
  (53% of production)
- **High levels of efficiency**
  in industrial processes
- **34 TWh** from PV systems,
  40% of production (today 2 TWh)

- **Waste incineration with CCS**
  (3.6 Mt CO₂ pa)
- **Biomass** for process heat
- **Expansion of heat grids** in urban areas
- **Cement and chemical plants**
  with CCS (2.9 Mt CO₂ pa)
- **Well insulated** buildings
  with low heating demands

www.energy-perspectives.ch
Production d’électricité selon les technologies
Évolution de la production d’électricité annuelle selon les technologies, en TWh

Scénario: Zero Basis
Variante stratégique: Bilan annuel équilibré en 2050
Durée de vie centrales nucléaires: 50

- Force hydraulique
- Énergies renouvelables
- Centrales nucléaires
- Centrales fossiles
- Solde importateur

2000 2010 2020 2030 2040 2050

TWh