



# ENERGY CRISIS CHALLENGES AND MITIGATION STRATEGIES

HOLCIM (SCHWEIZ) AG

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# HOLCIM

## GLOBAL LEADER IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS



**~70**  
Countries



**~2,300**  
Plants



**~70,000**  
Employees



**26.8**  
Billions Net Sales

*All figures Full Year 2021*

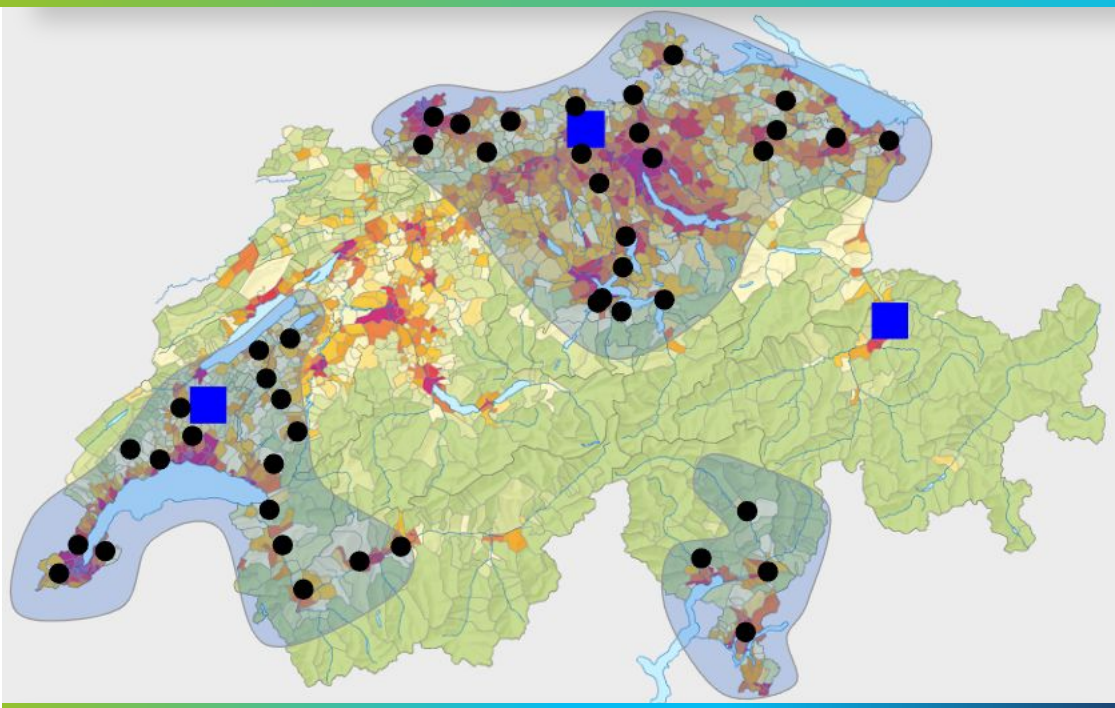


Quoted on **SIX** and  
**Euronext**








# IN SWITZERLAND HOLCIM IS PRESENT NATIONALLY WITH A NETWORK IN CEMENT, READY-MIX CONCRETE, AND AGGREGATES

Population density, construction spending, and Holcim footprint are well aligned



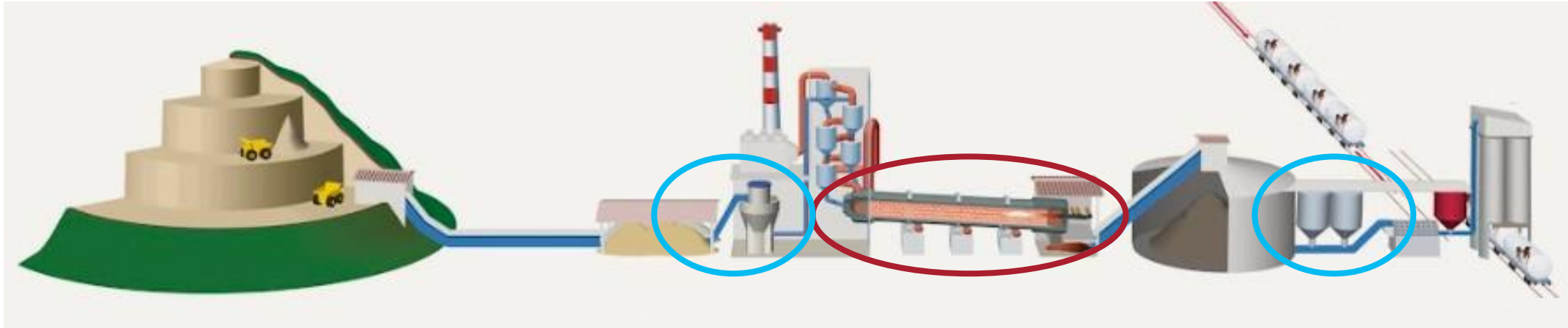
■ Cement plant      ● AGG / RMX plant

Source: Federal Statistical Office (BFS)

	Present in all of Switzerland	55 sites in the main consumption centers
	Close to the market	We produce where construction takes place
	Network	We have a network and are integrated across business lines
	Sustainable logistics	We are connected to railways enabling sustainable logistics; >40% CEM on rail
	Our expertise	1'200 employees

# TO START: HOW IS CEMENT PRODUCED?

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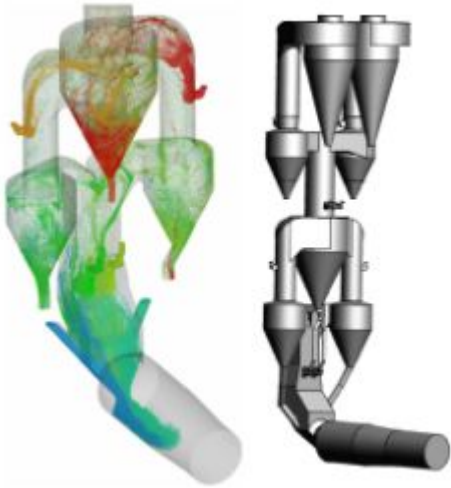


**Challenge:** To steer and optimize the **thermal** and **electrical** energy requirements

# PREVENTIVE MEASURES: THERMAL ENERGY



- Investments into **energy efficient equipment**, e.g.
  - High efficiency clinker cooler
- Energy efficiency through **process optimizations**, e.g.
  - Energy efficiency analysis reducing energy consumption of each plant
  - Usage of waste heat for various purposes, including pre-drying of raw materials
- Energy efficiency through **digitalization**, e.g.
  - Digital twin of preheater and rotary kiln allowing for stable and optimized operations
  - Statistical demand forecasting for sales & production planning
- Replacement of traditional fuels through usage of **alternative fuels** like dried sewage sludge or shredded plastic residues
  - In 2021, thanks to our subsidiary Geocycle, we have used 160,000 tons of combustible waste in clinker production



# PREVENTIVE MEASURES: ELECTRICAL ENERGY

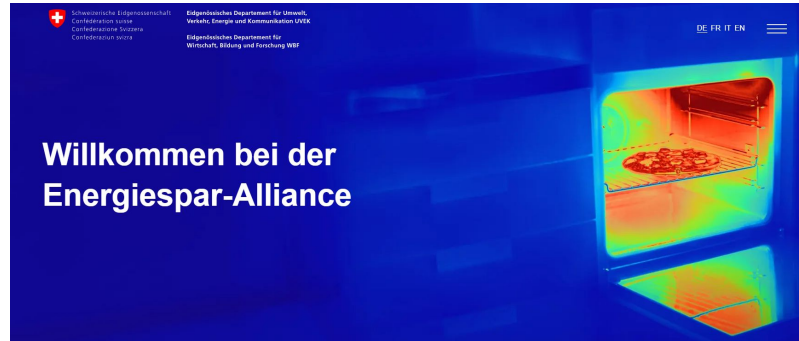


- Investments into **efficient equipment** and **own electricity production** through
  - Waste heat recovery
  - Solar plants
- Electricity efficiency through **process optimizations**, e.g.
  - Efficiency analysis reducing electrical energy consumption of each plant
- Energy efficiency through digitalization, e.g. Digital twin





# MEASURES TO AVOID AN ELECTRICITY SHORTAGE



Measures in the context of the Swiss **energy saving alliance**:

- Through optimal maintenance cycles in the critical winter period can we save 15-20% of our planned electricity consumption



**Short-term measures** if an electricity shortage is close:

- Enhanced sales & production planning tool to facilitate data driven decisions
- Short term turn-off of big electricity consumers possible for several hours



**HOLCIM**