

Climate Neutrality in Switzerland –The 2000-Watt-Society and its application on new and existing urban Districts

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- The Vision of a 2000-Watt-Society (pre and beyond 2020)
- The Standard 2000-Watt-Building
- The Certificate 2000-Watt-District
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Energy and climate policy objectives in CH

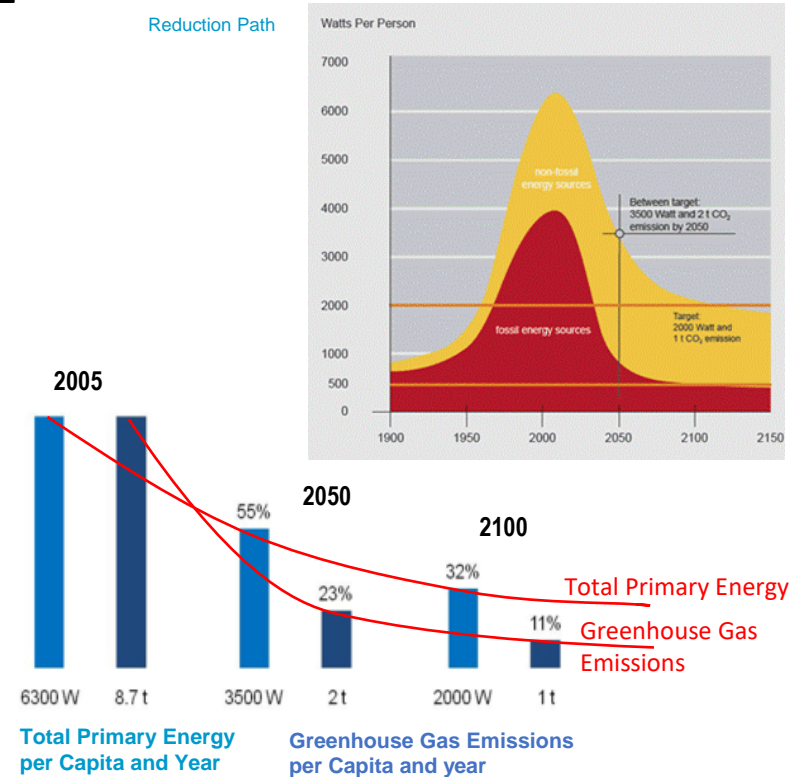
- Energy Strategy 2050 und the new Energy Law
 - Significant reduction in average energy consumption per capita compared to 2000
 - Significant reduction in average electricity consumption per capita compared to 2000
- Paris Agreement 2015
 - Target: Max. global warming of 2 C° compared to pre-industrial times (max. temperature increase of 1.5 C° is aimed for)
 - National CO₂ law in preparation
- 2000-Watt-, 1-Ton CO₂-Society (pre 2020) resp. 0-Ton CO₂-Society (beyond 2020) -> Compare next slides

The Vision of a 2000-Watt-Society (pre 2020)



Planning the descent before the ascent

Reduction Path

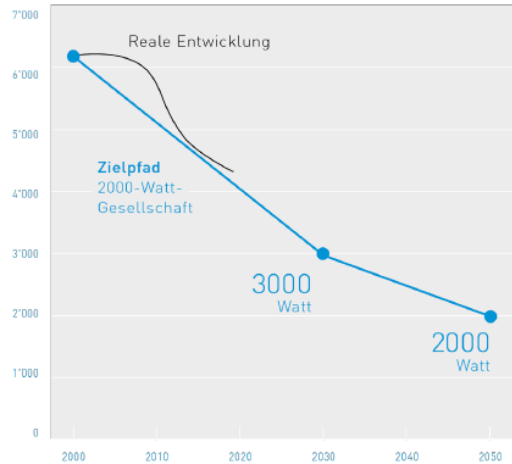


The Vision of a 2000-Watt-Society (beyond 2020)

Objective 1: Energy efficiency

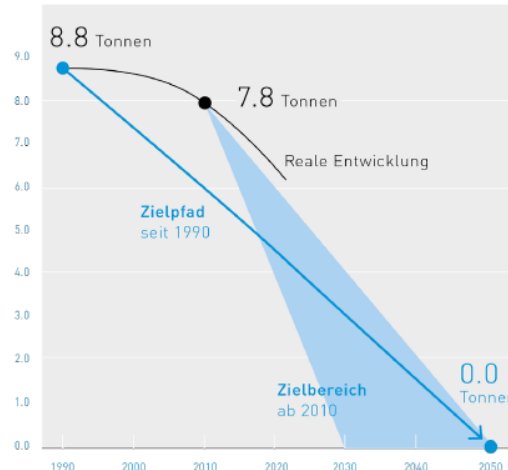
2000 Watt primary energy

Continuous output



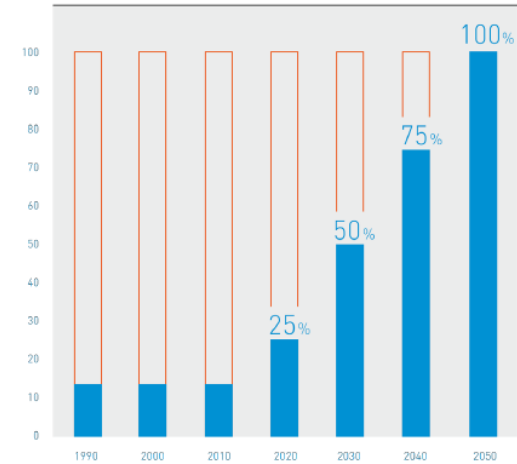
Objective 2: Climate neutrality

Zero energy-related greenhouse gas emissions



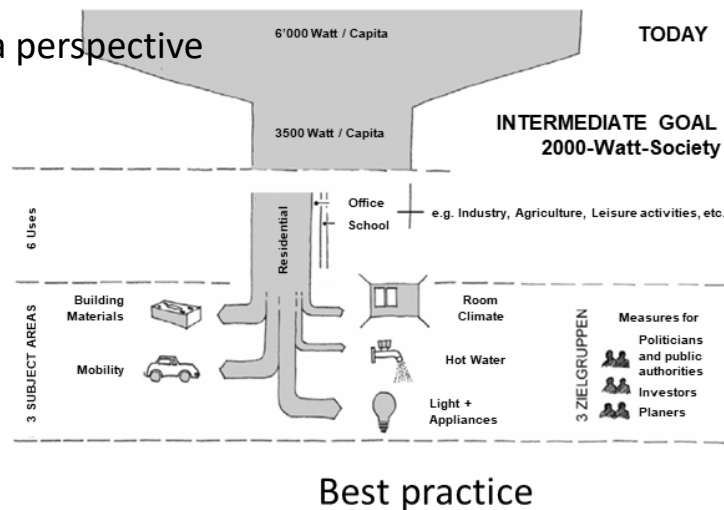
Objective 3: Sustainability

100% renewable energy



The Standard 2000-Watt-Building

- Still **based on the vision 2000-Watt-Society** «pre 2020» (Work on update version started)
- Basis: **Energy Efficiency Path** from SIA (Swiss Engineer and Architects)
- From per capita to per m² heated floor area perspective
(Target values for planners and architects)
- **Indicators:** Primary Energy non renewable and Global Warming Potential
- **Including:** Materials, daily Mobility and operational Energy
- **6 uses** (Homes, Schools, Offices, Restaurants, Retailers and Groceries)

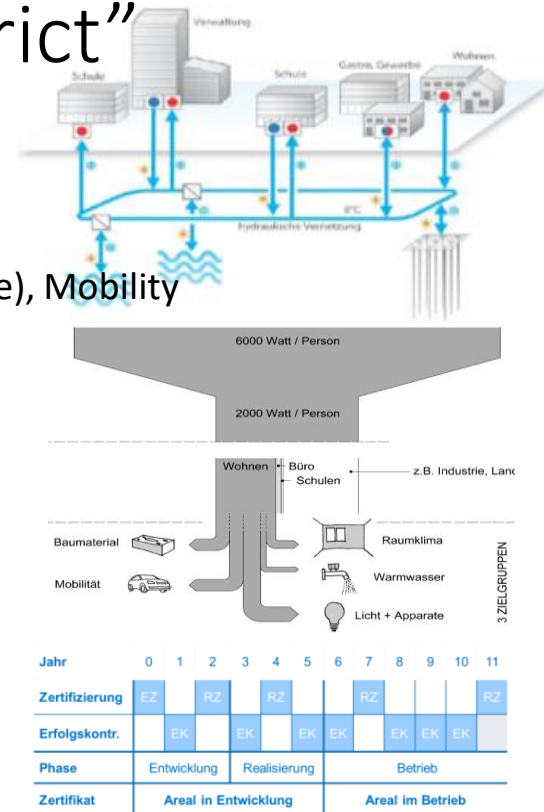


The Certificate 2000-Watt-District



Introduction to “2000-Watt-District”

- Districts instead of Buildings
 - Mixed uses, Densification, Connectivity (Supply/Production/Storage), Mobility
- Total Energy Balance instead of only Operation
 - Operational Energy, Embodied Energy and daily Mobility
 - Strategies: Efficiency, renewable Energies, Sufficiency
- Planning and Life Cycle
 - Planning, Construction, Operation, Transformation
 - From Cradle to Grave
- Community with high quality of Life
 - Sharing-Supply, value-added Services, collaborative used spaces, activities, etc.



3 Specifications of a “2000-Watt-District”

Development:

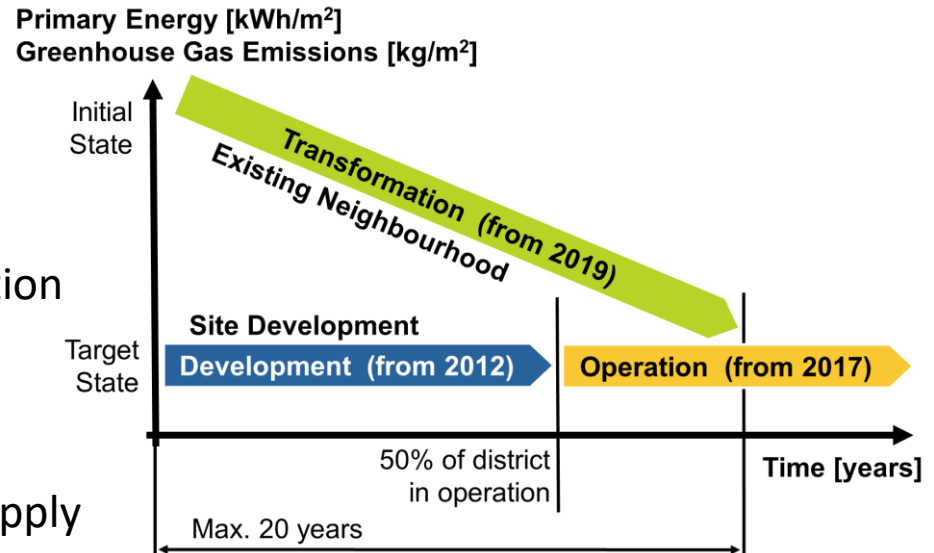
- Mainly new buildings

Operation:

- After 50% has been put in operation

Transformation:

- Mainly existing buildings to be retrofitted and/or new energy supply (renewable)



Quantitative Requirements

- Indicators:

- Primary energy total
- Primary energy non renewable
- Greenhouse gas emissions

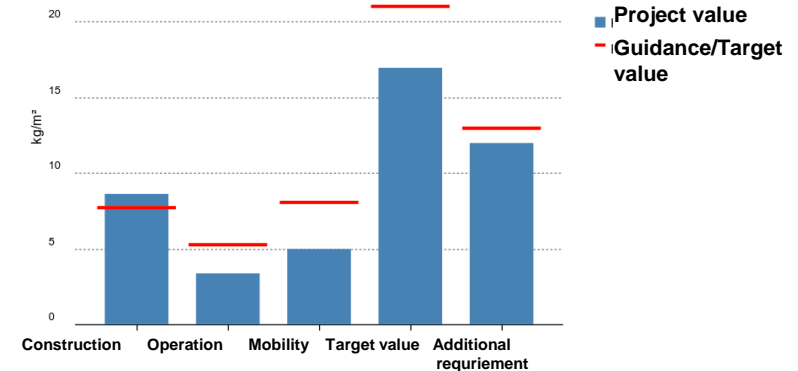
- Taken into account:

- Construction (Embodied Energy and GHG Emissions)
- Operation
- Daily mobility

- Instrument: Tool (Rechenhilfe II) for calculation of project- und target values

Greenhouse Gas Emissions

| THGE | Erstellung | Betrieb | Mobilität | Zielwerte | Zusatzanforderungen |
|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|
| Richt-/Zielwert | 7.7 kg/m ² | 5.2 kg/m ² | 8.0 kg/m ² | 21.0 kg/m ² | 12.9 kg/m ² |
| Kennzahlen | 8.6 kg/m ² | 3.3 kg/m ² | 5.0 kg/m ² | 16.9 kg/m ² | 12.0 kg/m ² |
| Anteil/Erfüllungsgrad | 111.7 % | 63.9 % | 61.8 % | 80.7 % | 92.4 % |



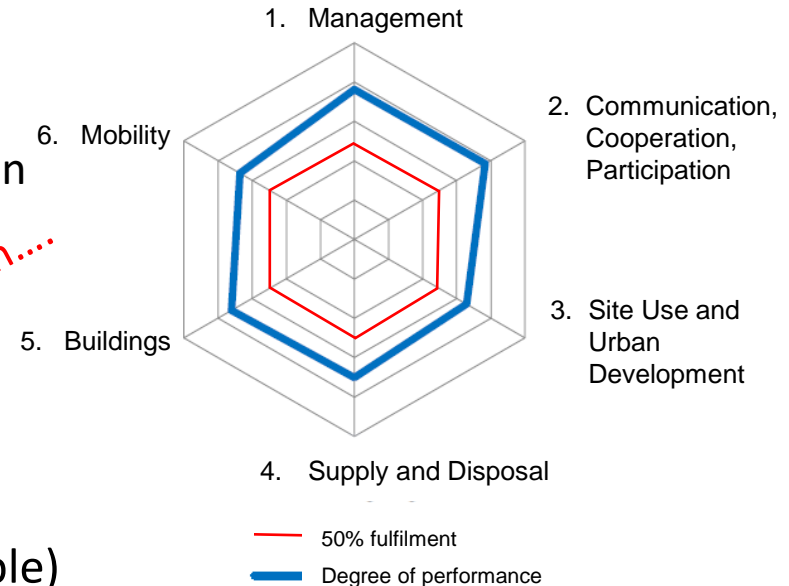
The goal is set, not the path....

Qualitative Requirements

- Criteria within six subject areas :
 - Management
 - Communication, Cooperation, Participation
 - Site Use and Urban Development
 - Supply and Disposal
 - Buildings
 - Mobility

The goal is set, not the path....

- Instrument: Management-Tool (Excel-Table)



Summary of Benefits

- Confirmation that the project is planned, developed and operated **in accordance with the objectives of the 2000-Watt-Society** (important for municipalities and government)
- Continuous **quality assurance of the quantitative verification** of compliance with the requirements of the 2000-Watt-District certificate based 2000-Watt-Buildings
- Continuous **quality assurance of the qualitative assessment** for compliance with the minimum requirements in terms of the subject areas
- **Individual support by accredited 2000-watt-district consultant** for at least 2 working days per year (service provided by the government)
- **Marketing:** Public honouring and label handover, support of the governments media office in the handover of the site on site, presence of the project on the website www.2000watt.swiss, individual fact sheet with own logo.

Switzerland will not reach its political goals without the transformation of a larger number of existing Buildings through retrofitting





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