

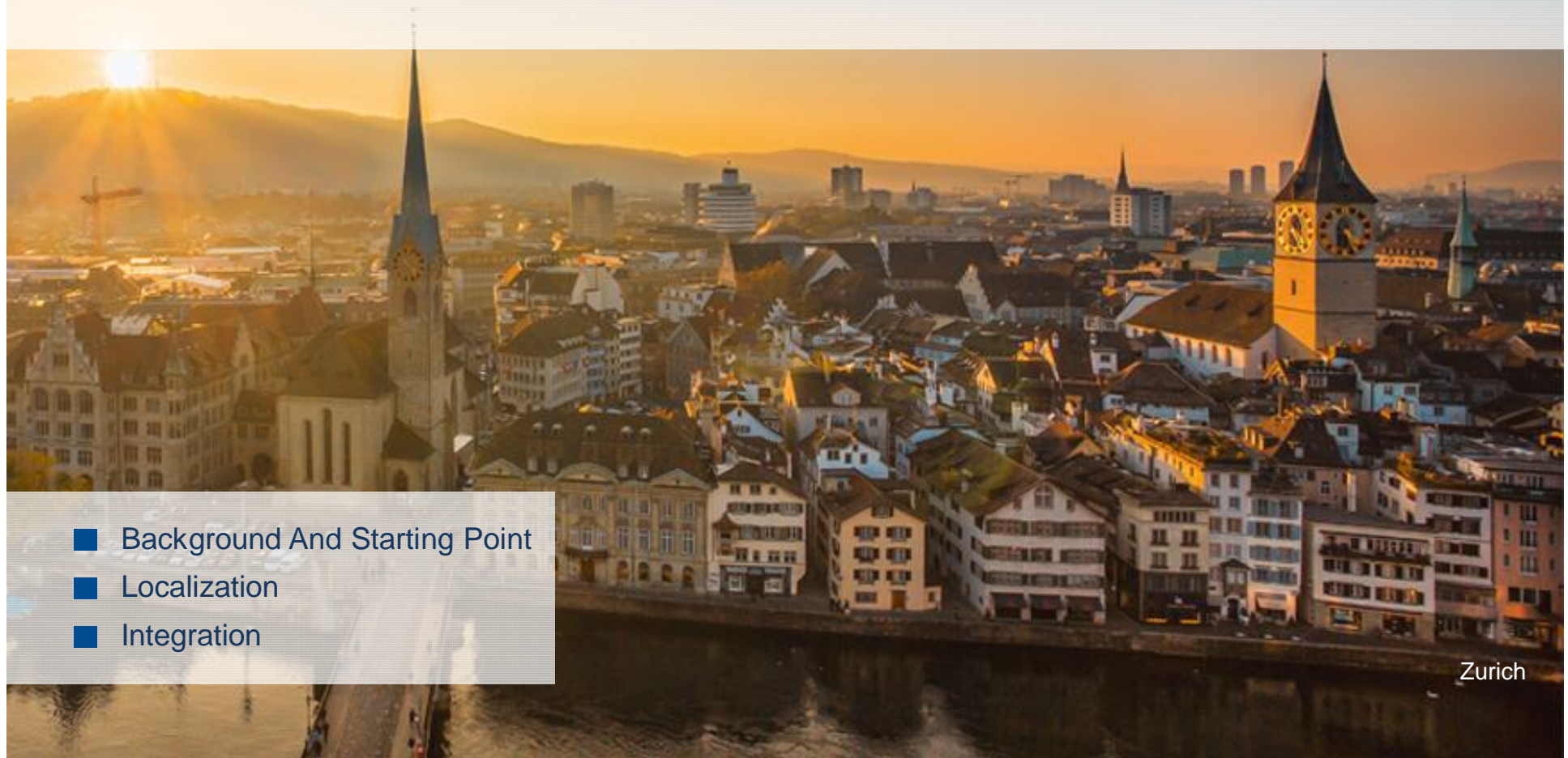
Utilities Business Models in Switzerland

ewz PV Solar Business Model Evolution – One Example

Stefan Niesler, 14.09.2015



Buyers - Owners - Operators



- Background And Starting Point
- Localization
- Integration

Zurich

Fostering The Offspring

- Technology Becomes Available
- Limited Experience

■ Background And Starting Point

Technology

Technology becomes commercially available
Generation cost not competitive - yet
Support schemes not implemented yet
Regional meteo data - at best - only limited available
Lack of long-term performance and durability experience

Customers

Growing interest in renewable energy from customer
Increasing energy costs
Birth of mainstream sustainability movement (CDP, GCP, GRI)

Approach

Initiate construction of pilot plants and leading capacity
build up by providing long-term power purchase
agreements
Meet new customer demand for non-traditional energy



Local, Long-Term And Price Competitive

- Regionalisation
- Participation

■ Regionalisation And Participation

Advance Technology

Improving technology economics and performance
Detailed operational experience

Changed Customer Requirement

Supply economics gain focus
Low financial cost and decreasing energy cost environment

Approach

Cost effective long term participation to optimise scarcely available local productions sites, supplementing existing energy supply contract, available in varying sizes to accommodate different customer groups

Integration And Sophistication

- Total Energy Solutions
- Prosumer Approaches
- Flexibilisation
- Market Integration

■ Background And Starting Point

Market Developments

Decreasing communication, computation and storage costs
Establishment of universal communication interfaces and languages

Customer Trends

Market liberalisation and integration offers increasing number of decision alternatives
Growing complexity of individual systems
Increased comfort requirements
Growing system customization
Advancing automatisisation and digitization
Trend toward decentralised and grid-independent solutions

Approach

Integral part of interactive and interdependent utility infrastructure (water, heating, cooling, electricity, communication, lighting, security)
Increase of component flexibility and modularization
Enabling multipurpose functionality for cross optimization over competing markets (own vs. external market supply, short vs. longer term market)



Thanks You For Your Attention

ewz

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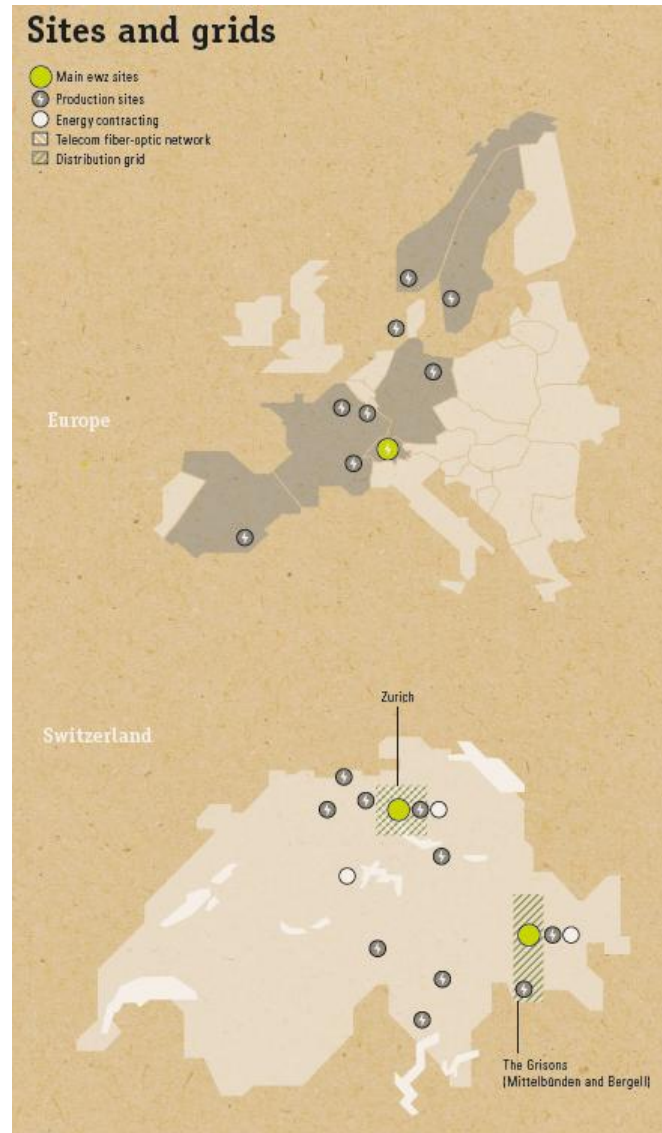
Arial 11 Punkte



Appendix

Facts & Figures - ewz

■ Company profile (2014).



ewz is the municipal utility of the city of Zurich and one of the top ten energy providers in Switzerland in terms of turnover, supplying the city of Zurich and parts of Grisons with power since 1892.

Turnover (EUR):	~650 Mio.
Employees:	1188
Customers:	224 K
Generation (GWh):	5585
Overhead grid (km):	414