





Smart Energy Service Provider

Implementing local energy markets in the Swiss context
#REMforum 2017

Workshop 4 – Business models for local Flexibility co-creation

St. Gallen, May 12 2017
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Our insights for the workshop session

1. «ABC» of local energy markets

- Key enabler
- Roles & players
- Geographical scope

2. Example of a successful implementation in Norway

- Situation
- Business model
- Information technology

3. Potential & barriers in Switzerland

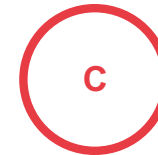
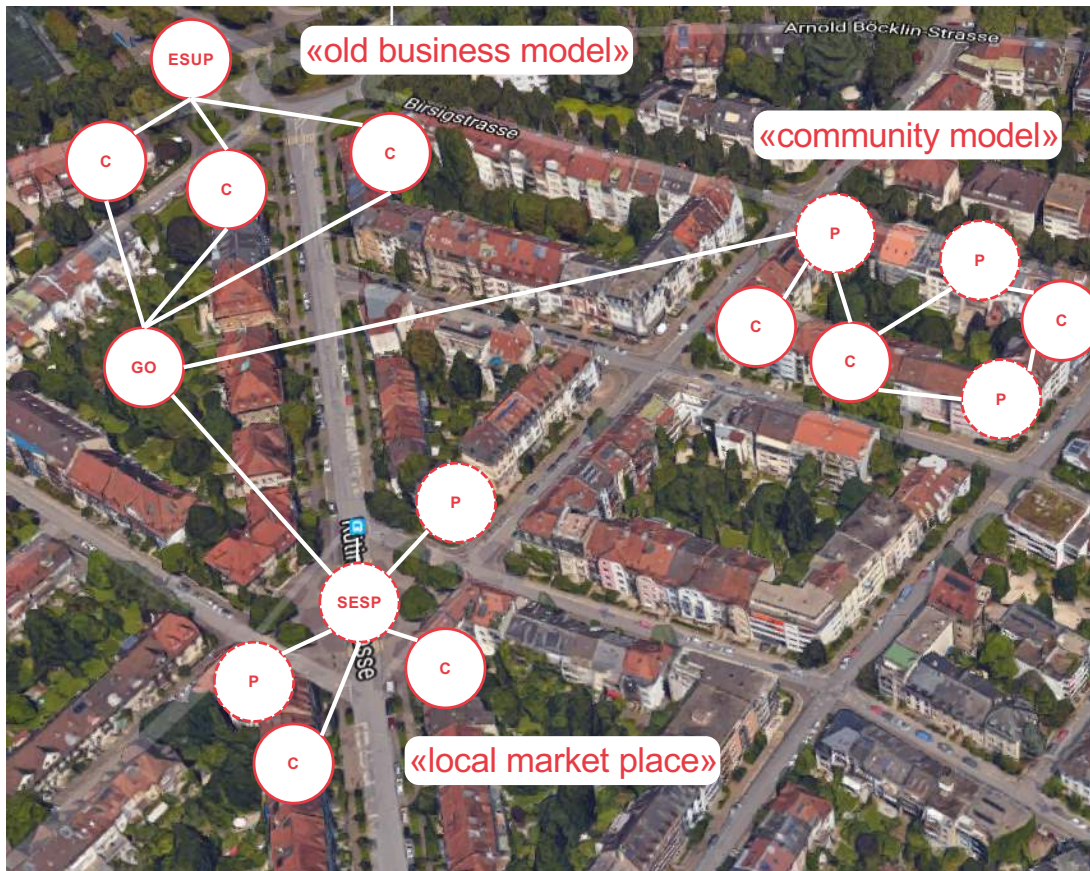
- Prosumer & flexibility
- Barriers
- Existing and future business models for local energy market places

Prosumers are the key enabler for local energy market places

Prosumer eco-system



Incumbents and new entrants are the key players in local energy market eco-systems



Electricity Consumer



Traditional Energy Supplier



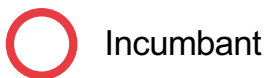
Local Grid Operator



Prosumer



Smart Energy Service Provider



Incumbant



New Entrant

Local energy markets are scalable



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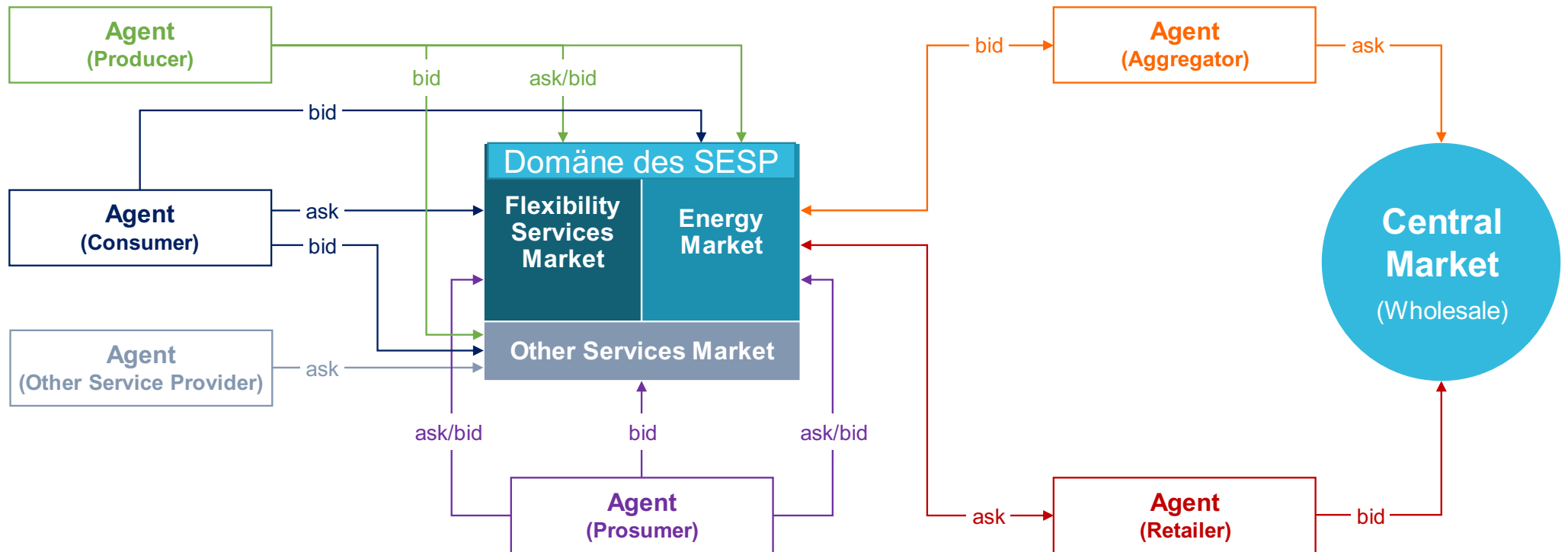
- Prosumer & flexibility
- Barriers
- Existing and future business models for local energy market places

A local energy market place was successfully tested in a research project (Horizon 2020) on the Norwegian island of Hvaler



- Hvaler is located east of Oslo at the entrance to the Oslofjord
- Normally, about 7'000 people live on the 86 square kilometer island, but in the summer it can also be 40'000 people
- As a result of the sharp increase in the number of solar panels and charging stations for electric cars, the energy consumption forecast for the grid operator "Norgesnett" was more and more difficult
- Due to rising peak load in the network, Norgesnett decided to search for an intelligent solution instead of just build a new, stronger power line
- This resulted in a research project with the Norwegian Center of Expertise (NCE) Smart Energy Markets
- Focus of the project: solve the problem with a local energy market approach

New business model: Smart Energy Service Provider (SESP) coordinates the newly created local energy market



Quelle: EMPOWER Projektdokumentation an das EU Horizon 2020 Programm, Deliverable D6.3, Trading Concept Development, September 2016, Seite 24.

ICT is the key enabler for the new business model



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We have huge potential in Switzerland for local energy production and ...

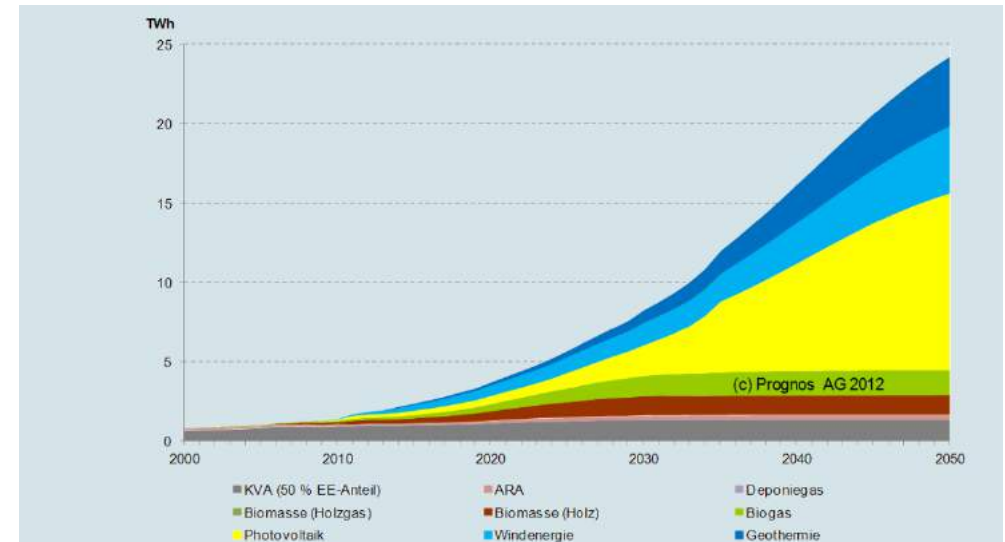
1.7 Mio. buildings = 1.7 Mio. potential local market participants

Gebäude nach Kategorie

	1990	2000	2010	2015
Gebäude mit Wohnnutzung	1'292'502	1'462'167	1'642'622	1'712'893
Reine Wohngebäude	79,4%	80,7%	83,1%	83,7%
Einfamilienhäuser	53,8%	56,2%	57,5%	57,4%
Mehrfamilienhäuser	25,6%	24,5%	25,6%	26,3%
Wohngebäude mit Nebennutzung	14,0%	13,6%	11,9%	11,5%
Gebäude mit teilweiser Wohnnutzung	6,6%	5,8%	5,0%	4,8%

Quelle: BFS - Volkszählung, Gebäude- und Wohnungsstatistik

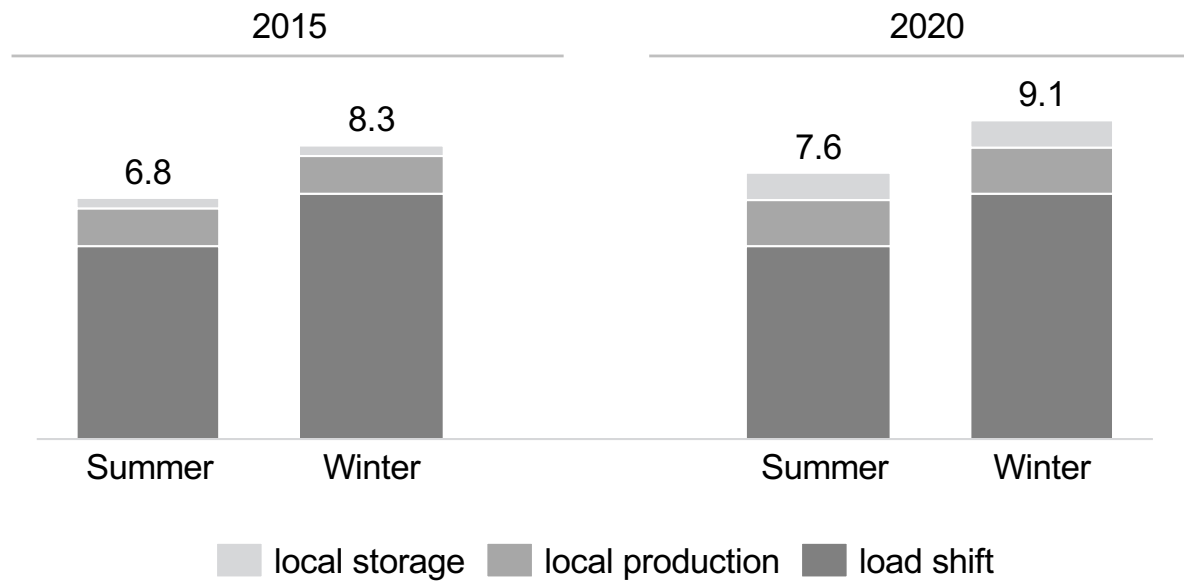
12 GWp installed solar capacity in 2050



Source: BFE

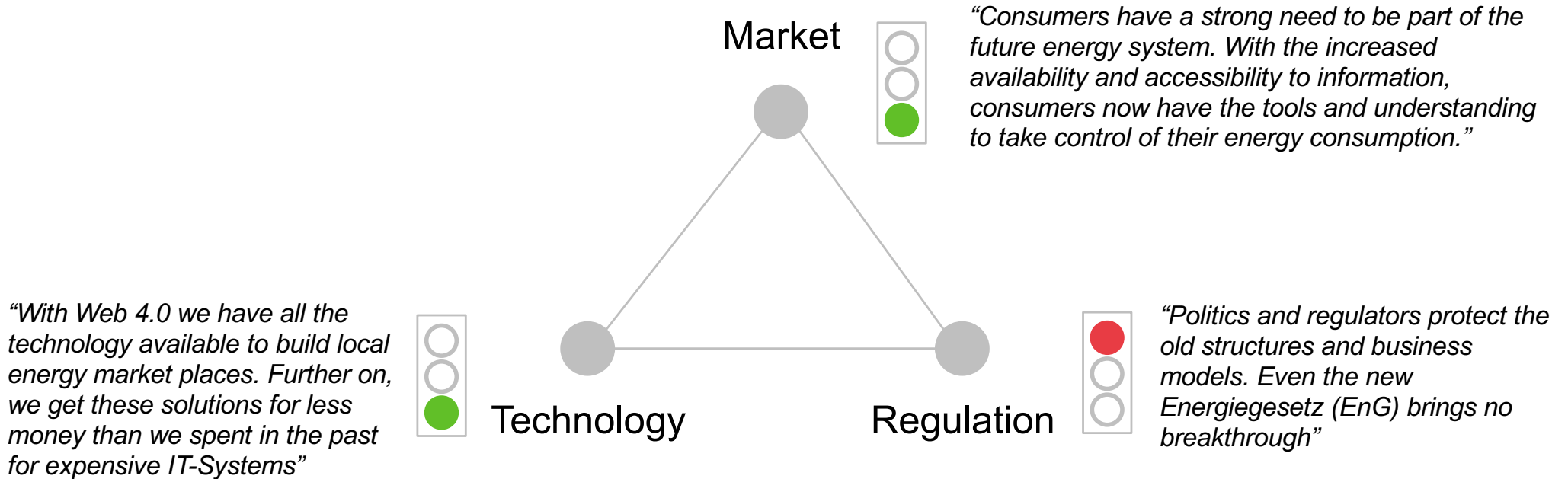
... local consumer and prosumer flexibility

7.5 – 9.0 GW technical flexibility potential at the consumer / prosumer side




Source: Multi-Client-Studie Endkundenflexibilität in der Schweiz, 2016, EnAdvice et al

The closed electricity market is the main barrier to local energy markets and to unlock the potential of flexibility on the consumer / prosumer side



But even with these conditions, we can build local energy market places in Switzerland – not in a few years, not next year, NOW

Tier One		Yes we can – no restrictions
Tier Two		Yes we can – no restrictions*
Tier Three		Yes we can, but consumer with a energy consumption less than 100 kWh per year are excluded
Tier Four		Yes we can, but consumer with a energy consumption less than 100 kWh per year are excluded

* If the new EnG is accepted by the Swiss people

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