



tiko –  
Delivering Value  
as Virtual Power Plant &  
Home Energy Management  
System

tiko Energy Solutions AG  
13 February 2020  
2nd Workshop on Flexibility Markets  
and TSO-DSO Cooperation  
EU Commission - Brussels

**tiko**



# tiko Energy Solutions

- a Swiss startup with technology aggregating household and business loads into some of Europe's biggest virtual power plants.
- tiko was formed in 2012 as a joint venture between Swisscom and Repower
- Engie has taken a majority share in tiko in 2019
- Business in Switzerland, Germany, Austria, France, Belgium, and Austria
- In Switzerland: aggregator
- International: technology provider

# Agenda

1

Introduction to tiko Energy Solutions

2

Experience with Virtual Power Plants (VPP)

3

tiko recommendations for TSO DSO cooperation

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Experience with Virtual Power Plants (VPP)

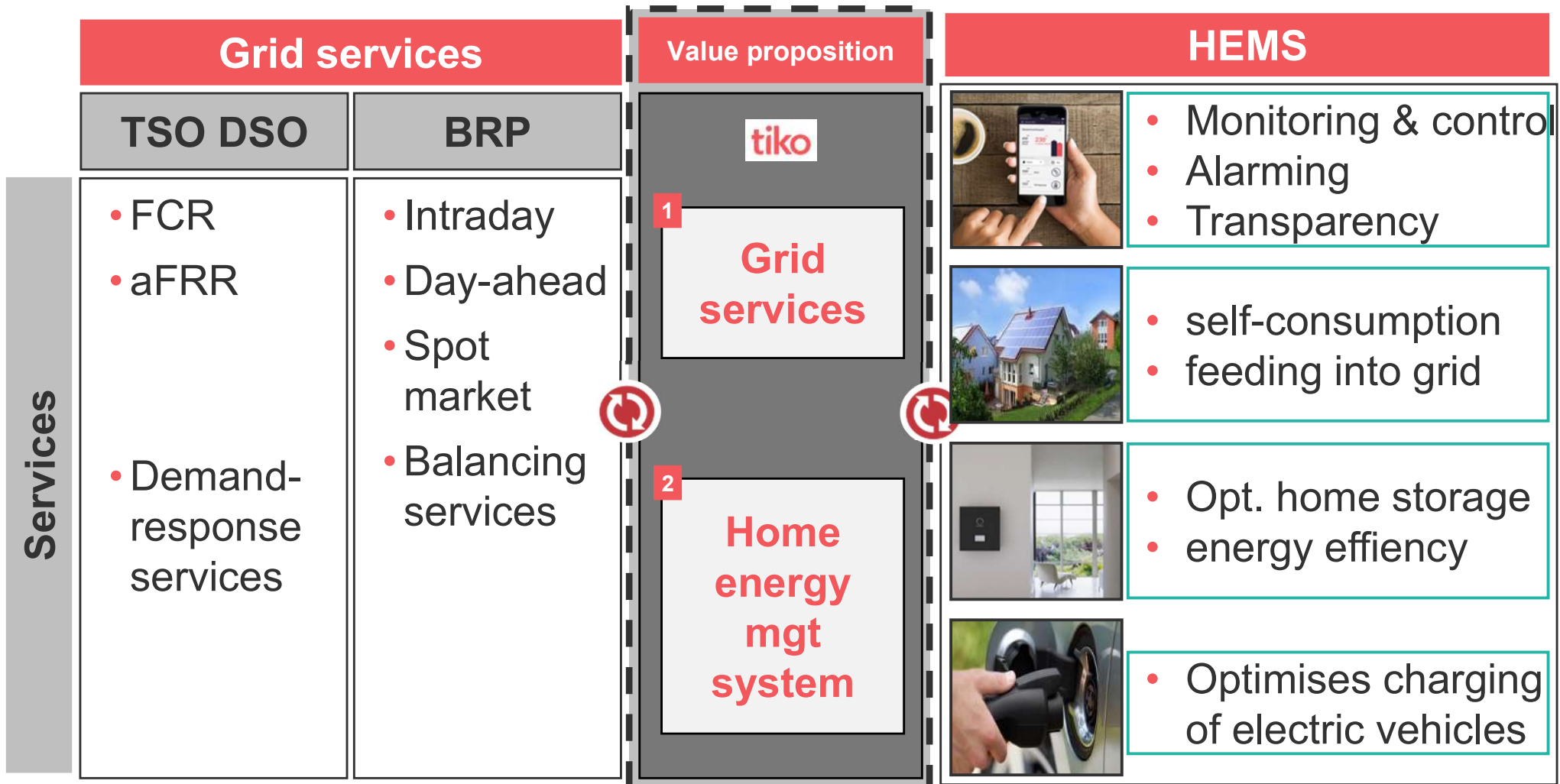
3

tiko recommendations for TSO DSO cooperation

tiko aggregates residential assets for grid services (VPP)  
providing home energy management systems (HEMS)



# tiko's platform controls residential assets almost real-time - on the basis of one second



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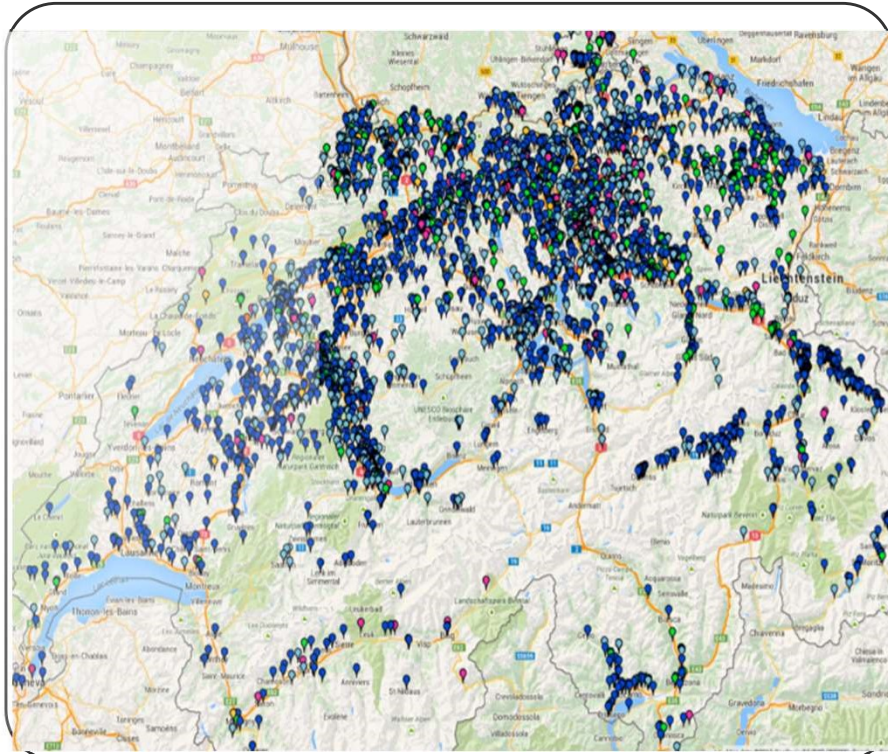
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tiko recommendations for TSO DSO cooperation

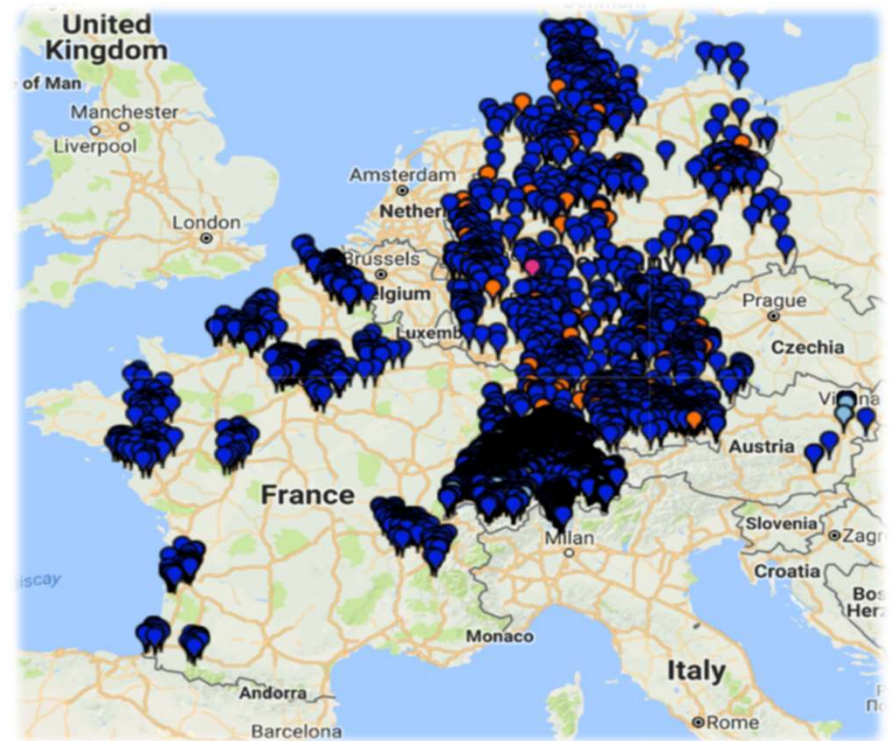


# tiko operates in Switzerland and in the EU

tiko delivers aFRR since 2014  
and FCR since 2016



tiko expanded to the EU since  
2016 as technology provider





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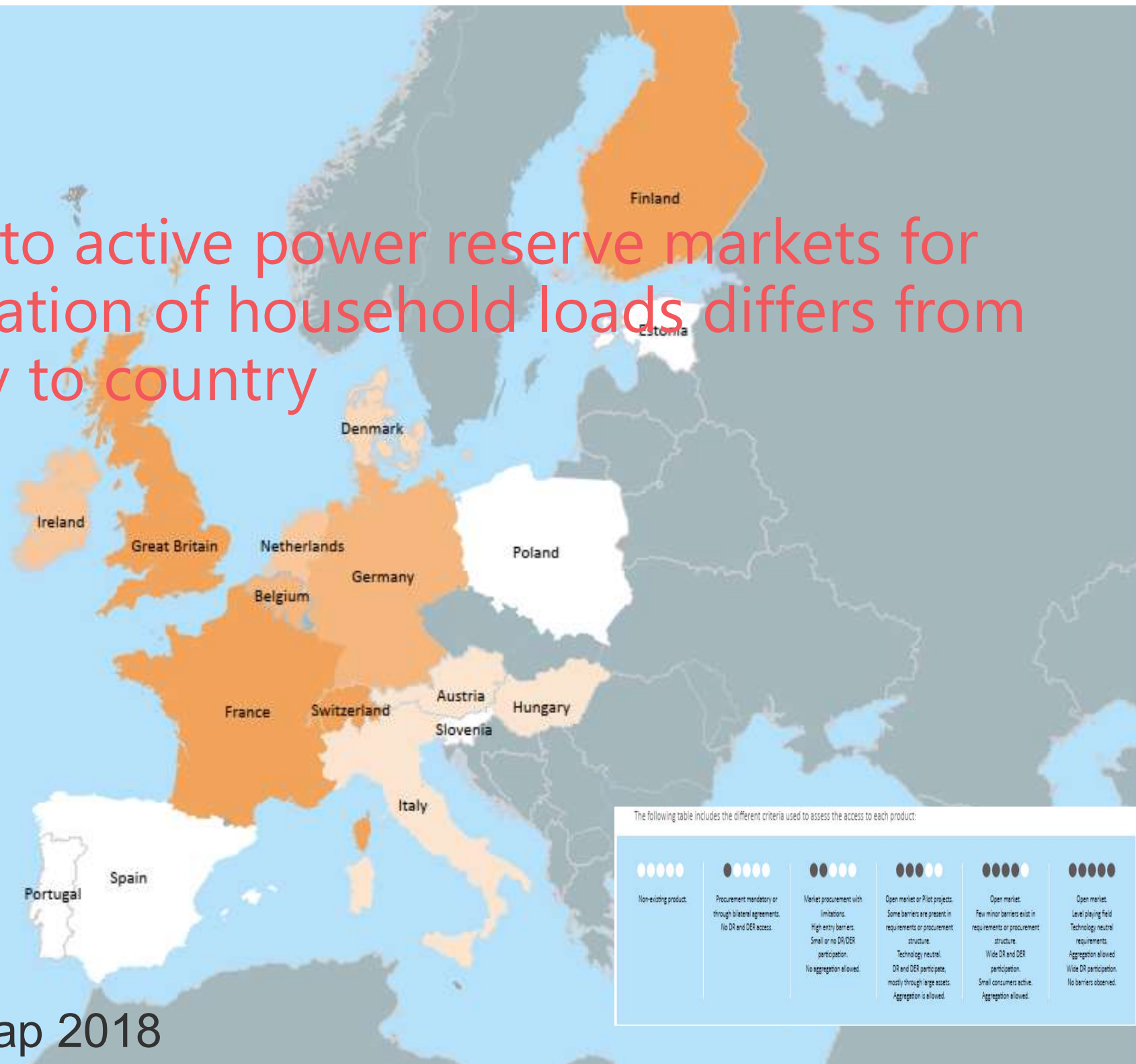
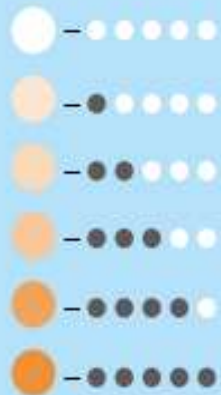
tiko recommendations for TSO DSO cooperation

FCR

Primary Reserve



# Access to active power reserve markets for aggregation of household loads differs from country to country



The following table includes the different criteria used to assess the access to each product:

●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Non-existing product.	Procurement mandatory or through bilateral agreements. No DR and DER access.	Market procurement with limitations. High entry barriers. Small or no DR/DER participation. No aggregation allowed.	Open market or Pilot projects. Some barriers are present in requirements or procurement structure. Technology neutral. DR and DER participate, mostly through large assets. Aggregation is allowed.	Open market. Few minor barriers exist in requirements or procurement structure. Wide DR and DER participation. Small consumers active. Aggregation allowed.	Open market. Level playing field. Technology neutral requirements. Aggregation allowed. Wide DR participation. No barriers observed.

# National freedom vs. scalability of business models

tiko energy solutions recommends for ancillary services market :

PQ  
process

- Harmonisation of PQ processes (e.g. Regional handbooks by ENTSO-E or EU guidelines) to reduce costs and time for PQ for flexibility providers

location  
measurement

- Central frequency measurement (heating)
- Harmonisation of location of frequency measurement

IT  
requirements

- Harmonisation of IT requirements  
(D: IT concept (“Medienbruch”); others: not defined)

combined  
assets

- Enforcement of operation guidelines  
(PQ of combined assets theoretically possible since 2019)

## Questions on design of markets (I)

How do you assess the impact of design choices on existing markets (day-ahead, intraday, ancillary services...) and on harmonisation, integration and interoperability of markets?

→ cf. above.

How do you ensure that flexibility markets, dynamic connection agreements and dynamic grid tariffs fit together? Where do you see synergy potentials for consumers and system operators?

→ flexibility providers are interested in clear rules for the use of flexibility by DSOs as it decreases the potential for its use in other markets (e.g. ancillary services markets),

What cannot be solved by the market, i.e. which products/services should be tackled via regulated systems?

→ Procurement of flexibility services, including congestion management, by DSOs according to Art 32 (1) of Directive 2019/944



## Questions on design of markets (II)

How transparent is your market? What data do you provide? (e.g. electricity flows, grid observation data, availability and impact of different grid assets)?

→ A real-time TSO/DSO platform would be recommendable

How are the different tasks – especially the running of a platform - split between the regulated and the commercial area and why? If running a platform is not a regulated activity, how do you prevent market abuse?

→ Unbundling between DSO and Supplier activities in this area are essential to allow market access to independent flexibility providers.

# Thank you

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