



Current and Improved Business Models of Aggregators in European Target Countries

Themenbereich 2: Strom- und Wärmeerzeugung sowie Speicher

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Motivation and Central Question

The main objective of the BestRES project[1] is to investigate the current barriers and to improve the role of Energy Aggregators in future electricity market designs. In the first stage, the project is focusing on existing European aggregation business models (BM) taking into account technical, market, environmental and social benefits. In the second stage, we will develop improved business models that are replicable in other countries in the EU considering market designs and with a focus on competitiveness. These improved business models will then be implemented or virtually implemented with real data and monitored in the following target countries: *United Kingdom, Belgium, Germany, France, Austria, Italy, Cyprus, Spain and Portugal*.

Methodology

The role of an aggregator can be taken up by a combination of different roles such as an incumbent energy supplier offering aggregation services, a service provider specialized in aggregation services collaborating with a supplier or a joint venture between a traditional supplier and a service provider or by an independent market actor. Independent means in that case that the aggregator is able to act independent from the (usual) supplier and the supplier's balance responsible parties (BRP). An important advantage of the independent aggregator is that his presence can create more competition in the market whereas combined aggregators are often more compatible with existing market design but hamper competitiveness. Within the BestRES project six business models for aggregators have been defined[2]:

- Combined aggregator – supplier: Supply and aggregation are offered as a package and there will be one BRP per connection point.
- Combined aggregator – BRP: There are two BRPs on the same connection point, the BRP (independent aggregator) and the BRP (supplier). The supplier is compensated for imbalances.
- Combined aggregator – DSO: NOT tackled, because regulated and unregulated roles should not be combined.
- Independent aggregator as a service provider: The aggregator is a service provider for one of the other market actors but does not sell at own risk to potential buyers.
- Independent delegated aggregator: The aggregator sells at own risk to potential buyers such as the transmission system operator (TSO), the BRP and the wholesale electricity markets.
- Prosumer as aggregator: Large-scale prosumers choose to adopt the role of aggregator for their own portfolios.

As written above, within the project's second stage improved business model will be developed. Although this improvements are mainly focused on enhanced competitiveness, other parameters like environmental and social benefits are taken into account too.

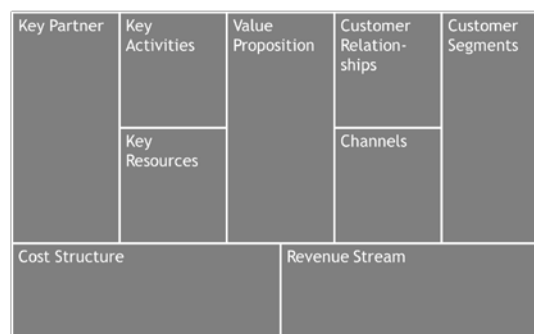


Figure 1: Graphical representation of Business Modelling via Canvas adapted from [3]

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For deeper understanding of the aggregators' individual business models, Canvas Models [3] of six types of aggregators has been developed. As shown in Figure 1 the company's canvas model consists of 9 blocks, structuring and explaining the aggregators individual BM [3]. BM improvements are achieved by adding or removing new elements into the Canvas BM (as shown in Figure 2), e.g. by adding new technologies to the aggregator's portfolio.

Because new technology options change the aggregators BM profoundly, interactions between the Canvas's models blocks are monitored. For example, demand response can participate at spot markets and/or balancing markets, resulting in different kind of costs, revenues, key partners and customers. Another example are electricity storages, rented or constructed by the aggregator. If storages are rented, the storage's operation capability may be restricted (due to the owner's interest²). On the other hand, newly built storages (associated with higher costs) have to provide a high degree of investment security, otherwise the investment won't be conducted. Subsequently in a later stage of the project, techno-economic models will be used to show advantages of improved BM in a quantitative way.

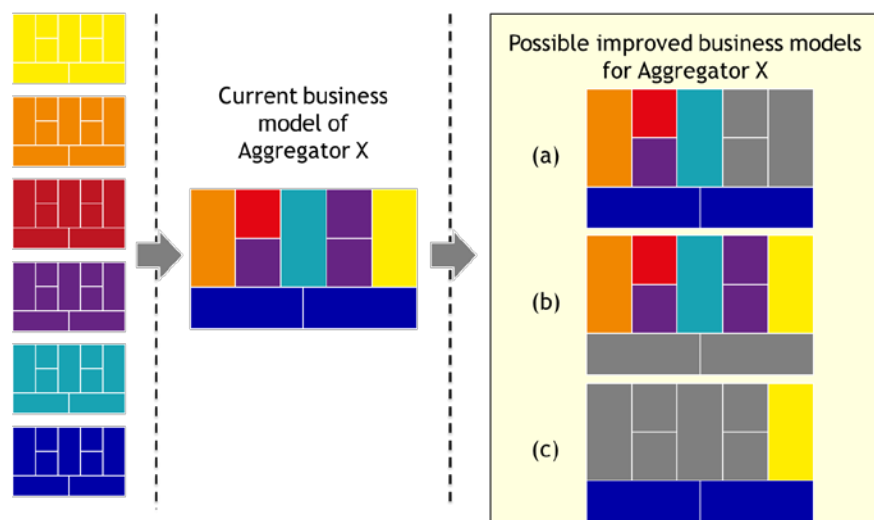


Figure 2: Possible improved business models via Canvas

Results and Conclusions

Due to the reason, that the BestRES project is in an early stage (started in spring 2015 and last until end of 2018), currently only preliminary and qualitative results could be presented. First conclusions are that the business models of aggregators as well as revenues stream and cost components within the consortium and European countries varies a lot. BM improvements mainly are achieved by implementing new technologies in the aggregator's portfolio or participating new markets.

Literature

- [1] Best practices and implementation of innovative business models for Renewable Energy Aggregators, <http://bestres.eu>.
- [2] Verhaegen, R.; Dierckxsens, C.; Lettner, G.; Fleischhacker, A. „Define and classify existing European aggregation business models (BMs) within and outside the consortium“, 2016. http://bestres.eu/wp-content/uploads/2016/08/BestRES_Existing-business-models-for-RE-aggregators.pdf.
- [3] Osterwalder, A. and Pigneur, Y. „Business Model Generation“, Hoboken, New Jersey: John Wiley & Sons, 2010. ISBN 978-0470-87641-1

² If storages are rented from a prosumer, the customers usually insists on low electricity procurement costs and a high degree of self-consumption. This kind of restrictions may lead to a limited operation range.