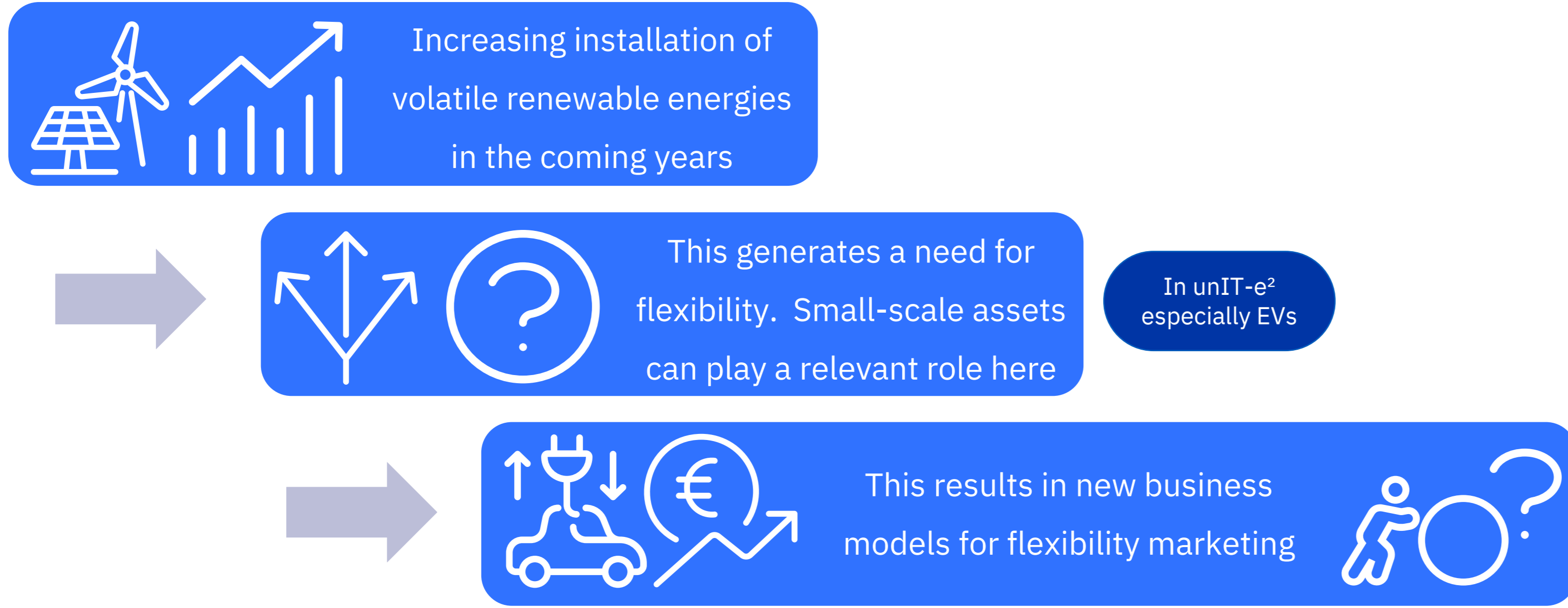
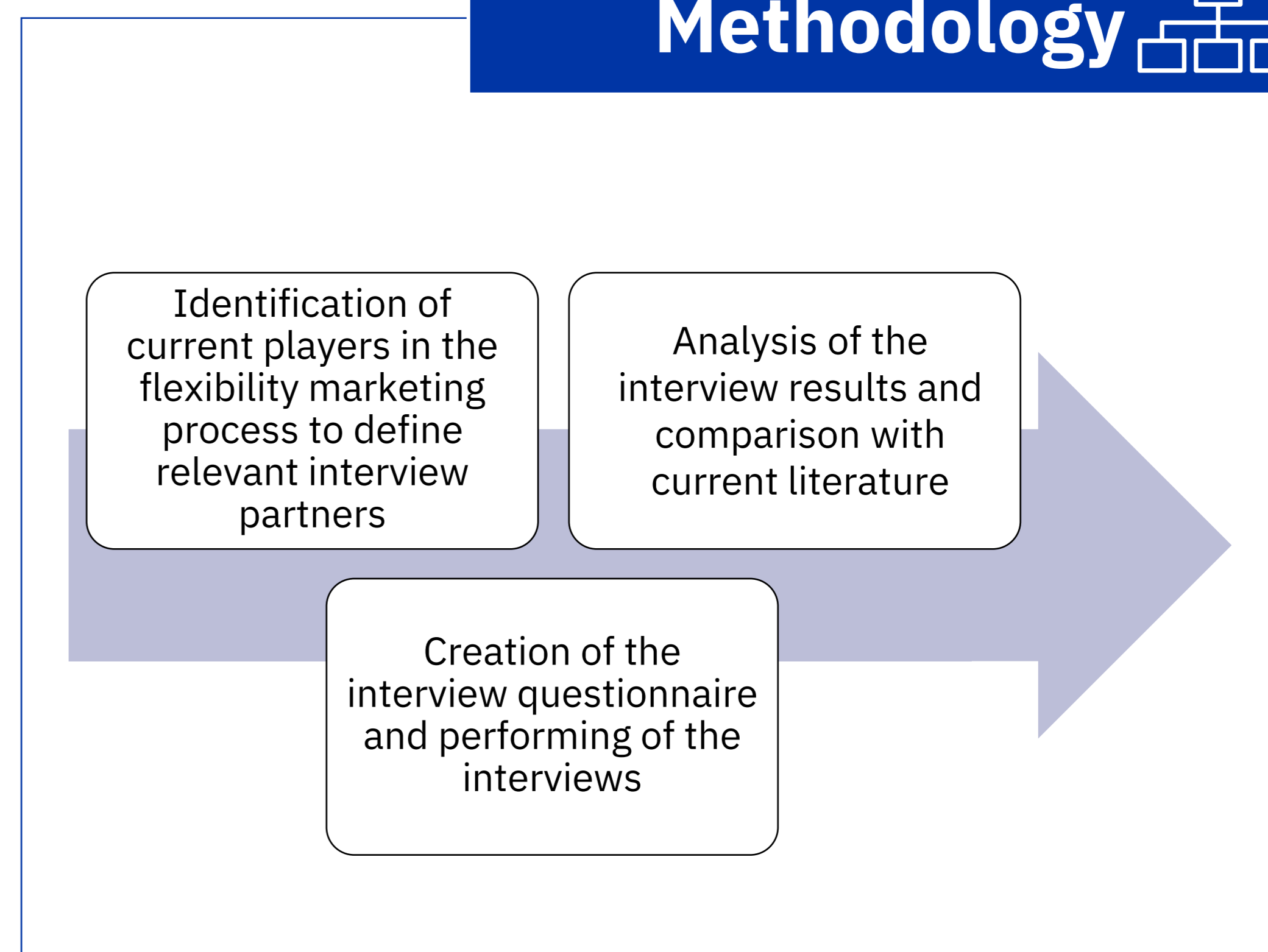


Motivation



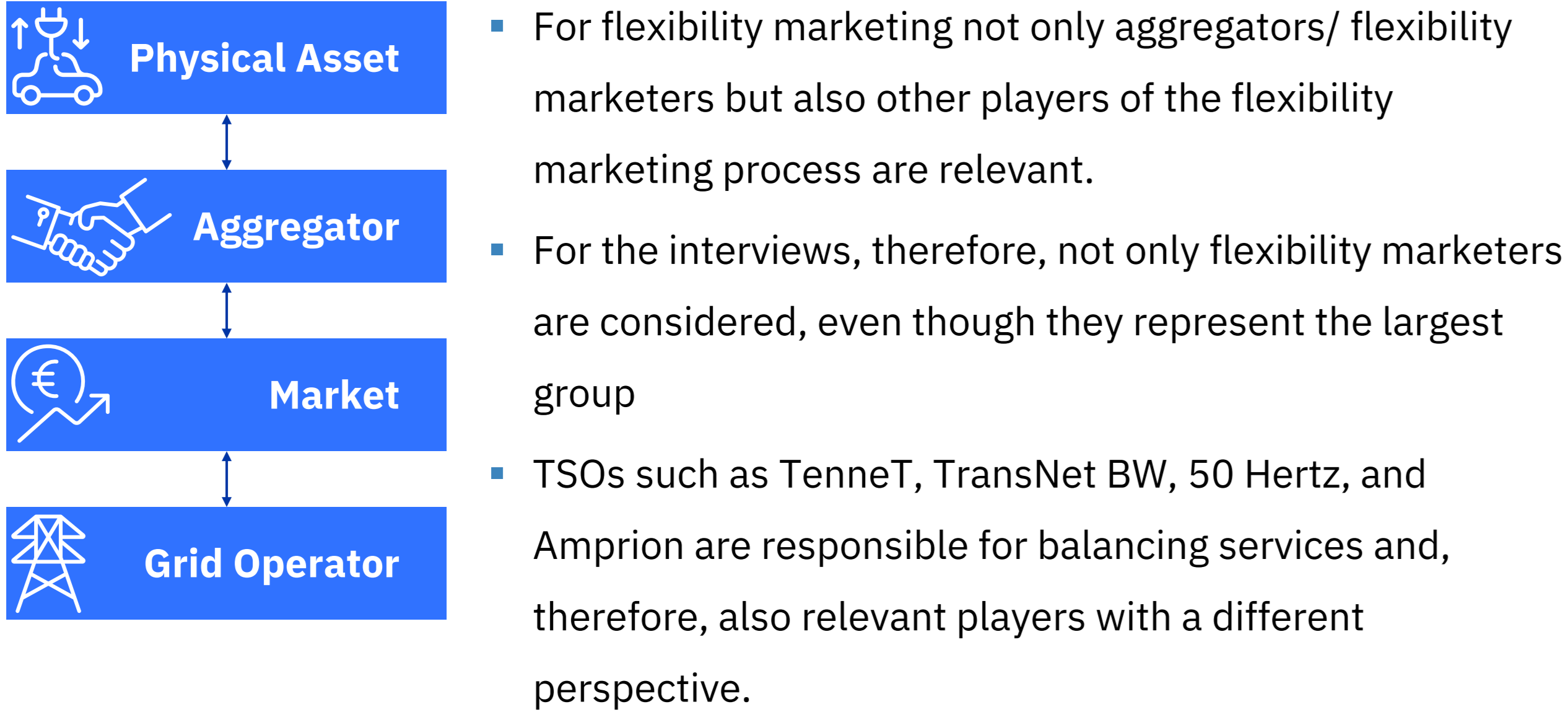
Research Question:
Which barriers and opportunities arise for players of flexibility marketing in the current German energy system?

Methodology



Results

Flexibility Marketing Process



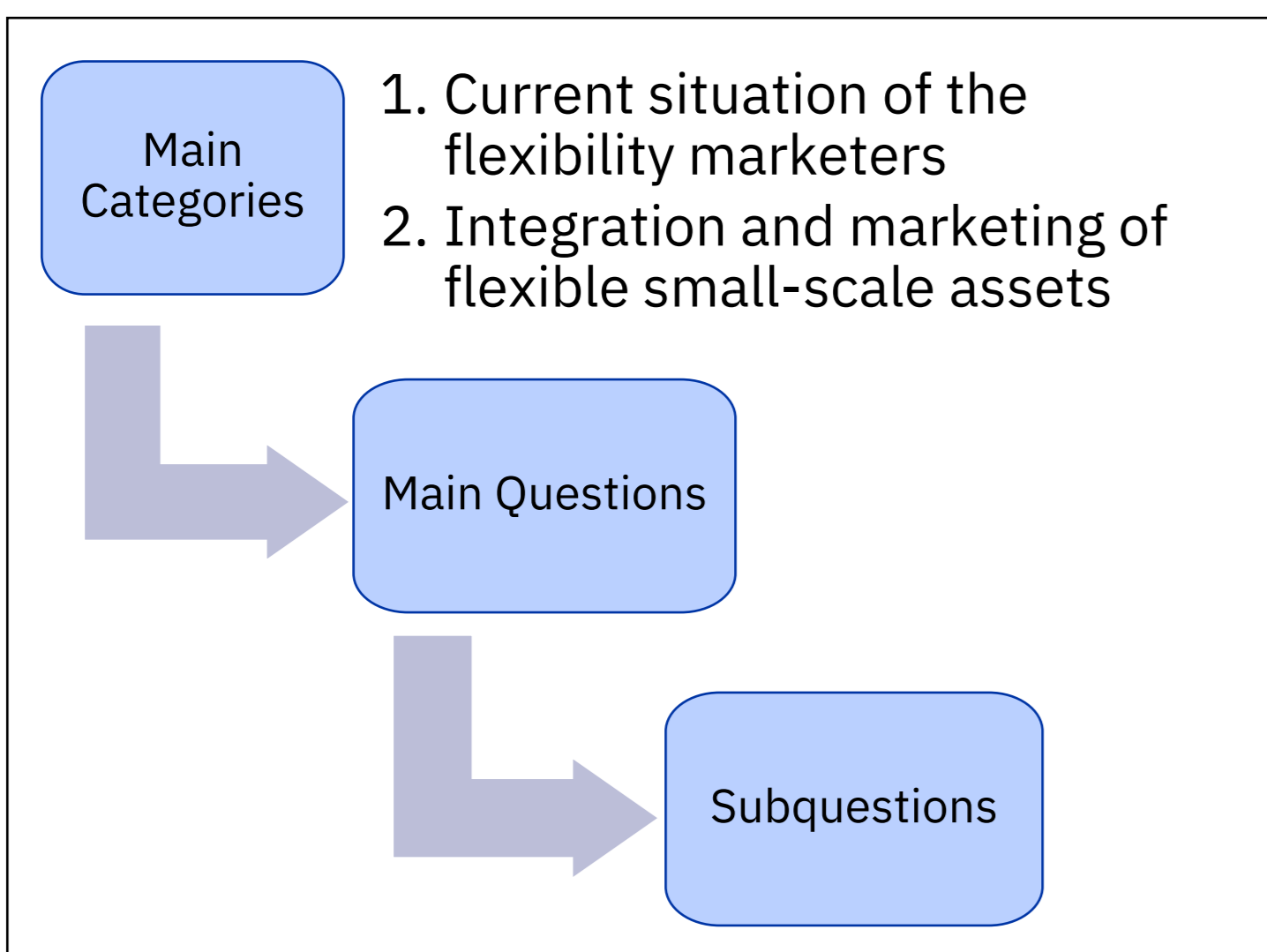
Interview Partners

- To be suitable for the interview, the interviewee has to work at an organization which is part of the flexibility marketing process for at least 2 years
- From several interview requests in total 7 interviews could be arranged:
 - 5 Flexibility Marketers
 - 1 TSO Representative
 - 1 Software Provider for VPPs

Active Flexibility Marketers in Germany

Aggregator	Generation	Load	Storage	Type of aggregator
NextKraftwerke	X	X	X	Independent
Entelios	X	X	X	Independent
EWE	X	X	X	Integrated
The Mobility House	-	-	X	Niche
SWM	X	X	X	Integrated
BayWa.re	X	X	-	Integrated
Energy2market	X	X	X	Independent
e.on	X	X	X	Integrated
BalancePower	X	X	-	Independent
MVV	X	-	-	Integrated
Getec Energie GmbH	X	X	X	Integrated
Tiko energy	X	X	X	Independent
Open energi	-	-	X	Independent
Mark-E	X	-	-	Integrated
Sonnen	-	-	X	Niche
Lichtblick	X	X	X	Independent
Axpo Deutschland GmbH	X	X	X	Integrated
Alpiq Deutschland GmbH	X	X	X	Integrated

Interview Guideline / Questionnaire



Interview Results

- Regulatory Barrier:** Main obstacle are high market entry barriers for balancing services. In general, there is no beneficial regulatory framework for marketing of small-scale assets
 - Technical Barrier:** High degree of digitalization and automatization is necessary which is challenging especially due to the delay in the smart meter rollout
 - Economic Barrier:** Lack of price signals from the markets and generally high costs which are then scaled with the numbers of assets result in low revenue potential
 - Social Barrier:** Lack of customer trust and acceptance as well as very complex business cases result in high sales and services costs for customer acquisition
- Due to competition with other technologies and use case with lower requirements no extensive implementation of small-scale assets so far

Conclusion

- Despite a high interest in flexibility marketing of small-scale assets, there is to date almost no marketing, and several challenges could be determined.
- The main challenges for flexibility marketing of small-scale assets are large technical and organizational costs with low revenues leading to low-profit potential and a lack of acceptance
- It should be noted that only a small number of interviews could be realized. To address this issue the results were compared with existing literature. In general, the interview results are confirmed by the literature.

Further Research

- As further work in unit-e², simulations of marketing EVs in a linear optimization tool are planned, taking into account
- not only revenues but also costs
 - not only spot markets but also balancing services
 - revenues from behind-the-meter use cases as comparison

