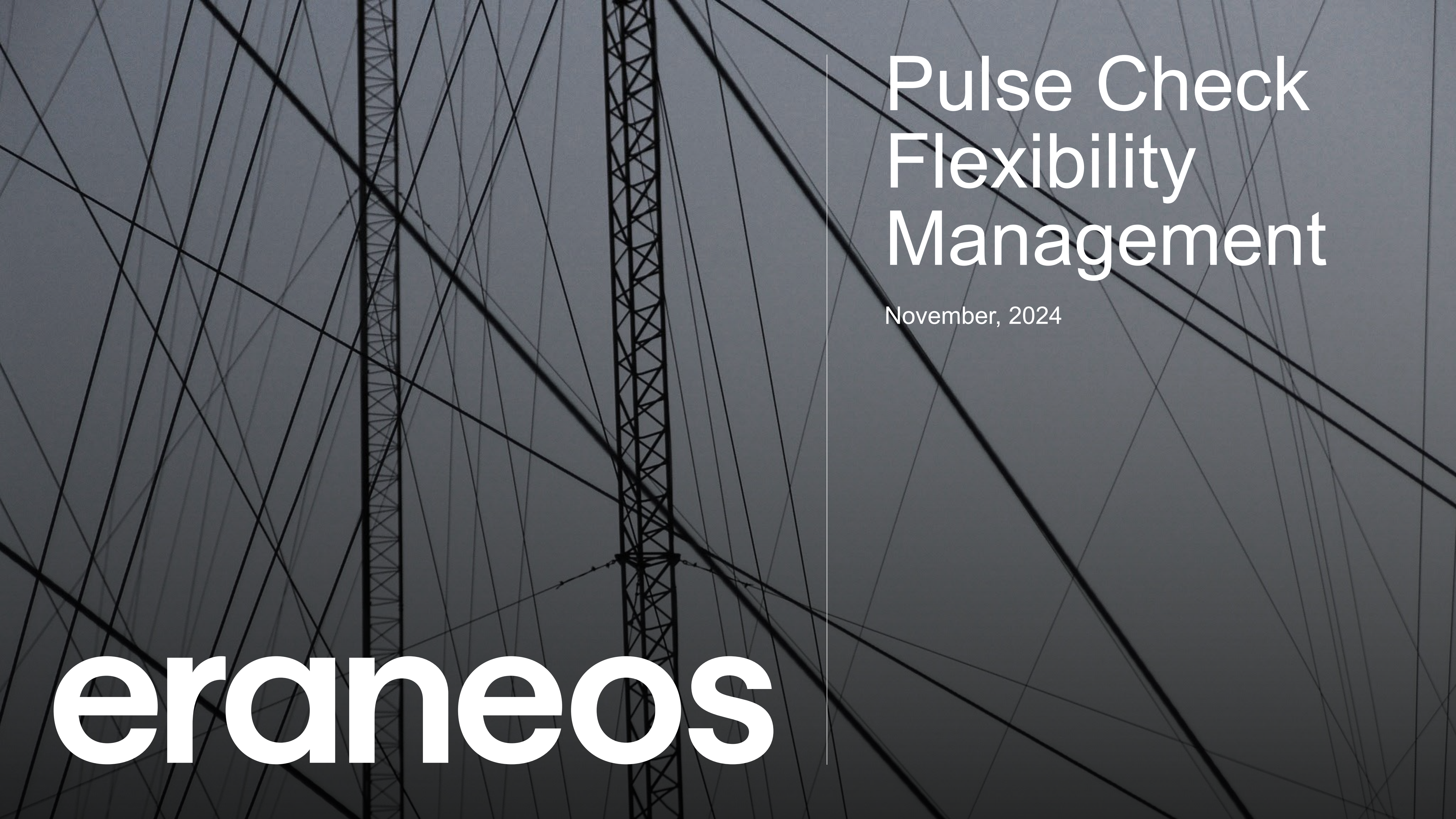

Pulse Check Flexibility Management

November, 2024

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FLEXIBILITY MANAGEMENT

Increasing volatility in energy generation through renewable energies

New requirements for consumption flexibility and grid stability

Competitive advantage through effective use of flexibility

The key to the future of the energy industry: **Managing flexibility, Seizing opportunities**

What do we mean by flexibility management and which offers and use cases are included?

→ **Definition**: By flexibility offerings, we mean product and service offerings that energy suppliers offer their customers to help optimize their own consumption and enable load shifting. For customers, this results in increased energy efficiency and possible cost reductions.

Excerpt flexibility offers in energy sales

HEMS
Systems for automatically controlling and optimizing energy consumption in the home

Energy monitoring and analysis tools
Software solutions and apps for monitoring, analyzing and visualizing energy consumption

Einbau Installation of smart meters on customer request
Use of modern meter technologies for precise measurement and optimization of energy consumption

Dynamic tariffs and time-variable pricing
Tariffs that vary the price of electricity depending on the time of day and grid load

Virtual power plants (VPP)
Integration of decentralized energy generation systems (e.g. solar systems, battery storage) into a virtual power plant

Direct Marketing
Optimization of revenues through the marketing of electricity from renewable energies on the free energy market

Excerpt use cases in energy sales

Smart Charging
Intelligent charging management for electric vehicles to optimize charging times and grid stability

Smart Heating
Efficient heating control through intelligent systems to reduce energy consumption

Self-consumption Optimization/intelligent self-generation
Maximizing the use of self-generated energy through intelligent control and storage to reduce energy costs and increase independence from the grid

Flexibility management is a hot topic in the media and in companies, but what is the real situation?

Why the pulse check?

Hardly any other topic is **discussed as intensively** in the energy industry as flexibility management. **Producers, consumers, politicians and the media** are all concerned with it, and the **Federal Network Agency** also **emphasizes** that **security of supply will be difficult to guarantee without flexibility management**.

Federal Network Agency
“Flexibilization of the players in the system is necessary in order to be able to guarantee security of supply efficiently“

E.ON Energie Deutschland GmbH
Süddeutsche Zeitung
11.10.2024 - 07:24 Uhr
E.ON Deutschland CEO Filip Thon in an interview with RND: “The future belongs to flexible tariffs”

The **ideal is the “flexsumer”** who uses his self-generated **solar power** efficiently - feeding it into **battery storage**, charging his **electric car** when **electricity is cheap**, **heating with his heat pump in an environmentally friendly way** and **relieving the grid through his overall behavior**. This ideal image promises a decentralized, flexible and sustainable energy future.

But how close are we really getting to this **ideal image for customers in the B2C and B2B sectors**? Where do companies stand today in terms of offering such flexibility solutions and how relevant is the topic for them? This is exactly what we wanted to find out with our Pulse Check.

What are the core results?

The topic is currently being **discussed intensively**, but the **actual implementation in the real economy** has so far **fallen short of expectations**

A **lack of customer understanding of Flex** and **high price sensitivity** on the part of customers make it difficult to achieve nationwide sales and rollout

HEMS is becoming the **central enabler** for flexibility management, especially in the B2C sector

The **biggest challenge** lies in the **numerous other priorities and issues** associated with flexibility management. **Partnerships** play a **crucial role** in mastering the complexity of flex

Our Pulse Check answers this question: We spoke to 21 companies about the relevance and maturity of flexibility management

What?

The key question: What relevance does the topic of flexibility management currently have in energy sales?

Who?

We interviewed **people from 21 companies** in various positions:

8 Energy companies / “8KU“
7 Regional / Public utilities
6 Start-Ups / Tech-Player

Head of Distribution / Sales / Marketing
Head of Product Management
(Partial) Managing Director

When?

The Pulse Check took place from **19.08 – 30.09.2024**

How?

We asked relevant questions on **five dimensions** in **30-minute interviews**:

Market
How important is flexibility management **for the current energy market**?
? **1 question**

Companies
How **strategically relevant** is flexibility management **for your company**? What does your current and future **offering** look like?
? **2 questions**

Customers
How advanced are **your customers** in terms of their **understanding** of and **demand** for flexibility management?
? **2 questions**

Maturity level
How would you rate your company's leve**l of maturity** in the area of flexibility management?
? **4 questions**

Success factors & challenges
What success factors have you identified and what **challenges** do you face in terms of flexibility management?
? **2 questions**

… and these are the results

Different classification of relevance, especially for energy companies

Start-ups are mostly convinced of the relevance, while **public utilities** fluctuate between undecided and convinced

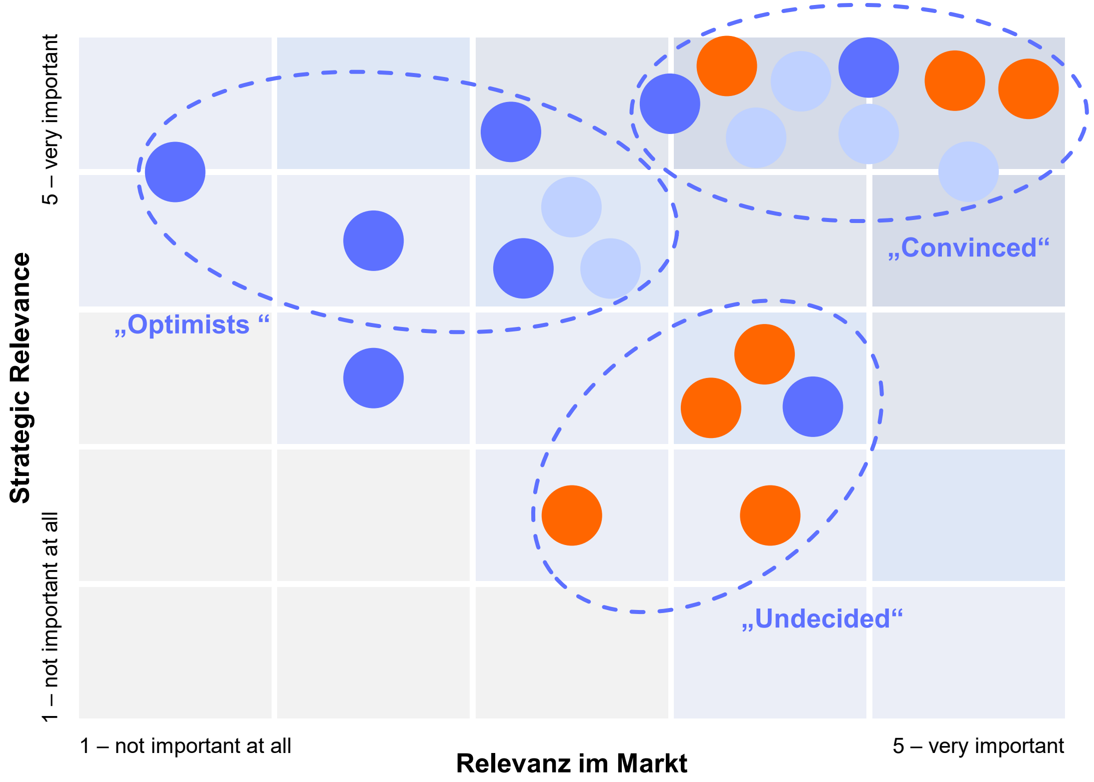
Assessment of strategic and market relevance - company vs. market

"Will significantly **increase resources**. From next year: **own flex budgets** and **own flex revenue planning**"

"**Projects** have been **initiated** internally, particularly in the B2B area, as there is **great potential** for the use cases here - also economically"

"Always of **varying importance**"

"It is an issue, but not the top issue. It **doesn't really play a central role** and has **not yet been implemented operationally**"



"In terms of results, it has **no relevance** whatsoever, but as far as appointments and discussions are concerned, there **seems to be no other topic**"

"Huge topic, but **not yet 'real'**"

"There is **hardly anything as important as** flex"

"Without Flexmgmt., the energy industry will **no longer function in future**"

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Energy companies / "8KU" Regional / Public utilities Start-Ups / Tech-Player

There is no way around flexibility management in the future – but demand has so far been primarily driven by regulation and infrastructure changes

Market

Ø Relevance rating participants (4,1)

Flexibility management is becoming increasingly relevant, especially for **decentralized energy generation.** Without flex, the energy business will not work in the future

Regulatory requirements such as Renewable Energy Act, dynamic tariffs, smart meters, etc. have a significant influence on development

Flexibility management has **not yet reached customers** due to a lack of knowledge and in some cases even fears ("switching off devices"). Demand is therefore currently low

The market is facing the **technical and strategic challenge** of adapting and developing solutions that involve customers more in flexibility management. The current focus is on other areas such as e-mobility and heat pumps

Currently a lower priority in sales, as there is little demand in the short term, mainly due to regulatory uncertainties. Flex is more of a future topic here

Primarily infrastructure and regulatory-driven demand

Relevance

Companies

Ø Relevance rating participants (3,6)

Flexibility management offerings are **not yet fully developed**, but will show great **potential** in the **next 3-5 years**, especially with dynamic tariffs

Flexibility management is economically **promising** in the **B2B sector**. **B2C**, on the other hand, is still **difficult to develop**

The **integration of Flex** into platform solutions, processes and existing IT (especially billing) is **crucial for future marketing success**

The strategic relevance and potential of Flex is perceived differently. Implementation of regulatory requirements makes consistent implementation and planning difficult. Flex therefore does **not yet have a leading role** in the **corporate strategy**

Flexibility management is **relevant for the entire value chain**, but the underlying **business model** often still needs to be developed

Top future topic - still without significant contribution to earnings

The customer perspective

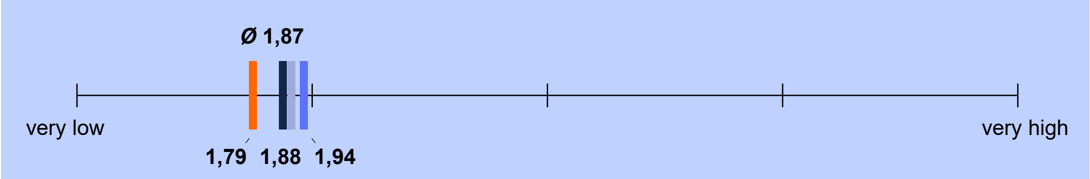
Few **B2C customers** with understanding and demand, broad masses currently rather uninterested

B2B customers already have a better understanding and demand

Customer demand and understanding – B2C vs. B2B

How pronounced are understanding and demand in the context of flexibility management among your B2C customers (“flexumer”) / B2B customers?

B2C

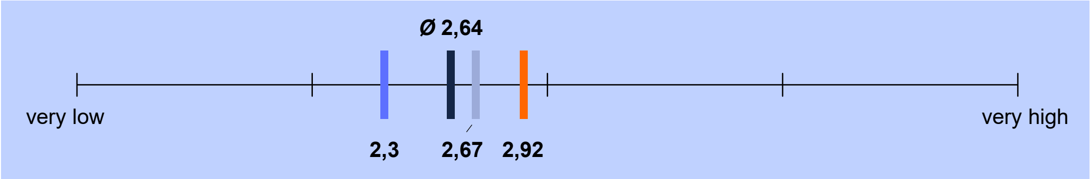


- Customers focus on **price**, show **little understanding** of the system and are often **skeptical** of new technologies (“switching off appliances”), while early adopters and e-car users are more open-minded
- Energy companies **struggle to communicate flex products**. Dynamic tariffs are slowly finding favor with younger generations and PV self-consumers

“Customers think from their **consumer perspective** - green, cheap, self-sufficient - but NOT how can I **stabilize the system**; no understanding of **different markets**.”

“Customers with **controllable devices** such as heat pumps or electric cars have a **high level of understanding** of flex management, but the **majority** (95%) **do not**.”

B2B



- B2B customers have a **better understanding** than B2C, but are **strongly price-driven**, which is why **self-consumption optimization** to **reduce costs** is particularly relevant
- Flexumer concepts are interesting for the **housing industry**, e.g. **first tenant electricity pilot** projects started, but overall less relevant than for larger commercial customers, where **load shifting** in particular is also interesting

“Large corporations have also **not yet arrived in the topic** (e.g. PPA)”

“**Demand** correlates strongly with **stock market prices**!”

Ø Market | Ø Energy companies / “8KU“ | Ø Regional / Public utilities | Ø Start-Ups / Tech-Player

Flex offerings not yet established across the board at companies, but planned for the future at almost all of them

	Today		Future
HEMS	**38%** offer the solution today	→	**90%** plan to actively offer the solution in the future
Energy monitoring and analysis tools	**71%** offer the solution today	→	**86%** plan to actively offer the solution in the future
Installation of smart meters in response to customer demand	**43%** offer the solution today	→	**62%** plan to actively offer the solution in the future
Dynamic tariffs and variable pricing	**33%** offer the solution today	→	**86%** plan to actively offer the solution in the future
Virtual power plants (VPP)	**43%** offer the solution today	→	**76%** plan to actively offer the solution in the future
Direct marketing	**48%** offer the solution today	→	**67%** plan to actively offer the solution in the future

Core trends in the Flex portfolio

Flex enabler

1 | As a **central enabler**, **HEMS** is becoming the **market standard** and an **integral part** of corporate portfolios

2 | Although the **installation of smart meters is a prerequisite for flex management**, only 60% of companies plan to offer this and therefore **rely** on the **grid providers**

Flex applications

3 | The **range of dynamic tariffs** will expand the most. The main reason for this is **regulatory pressure**

4 | Direct marketing and **VPP** are primarily **relevant in the B2B sector**. **Scaling** to the **B2C sector** is currently **failing** due to a **lack of economic and technical implementation**

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Overview of offers (1/3): HEMS and energy monitoring

HEMS

Systems for automatically controlling and optimizing energy consumption in the home

Solution offering	Today	Tomorrow
Energy companies / "8KU"	50%	100%
Regional / Public utilities	14%	86%
Start-Ups / Tech-Player	50%	83%
Overall	**38%**	**90%**

+138%

Key findings

Today
- Independent offering available, especially for start-ups and energy companies, where the offering is usually provided via partnering; public utilities with little offering
- Maturity level of start-ups significantly higher, in some cases even with AI; energy suppliers if more in MVP status

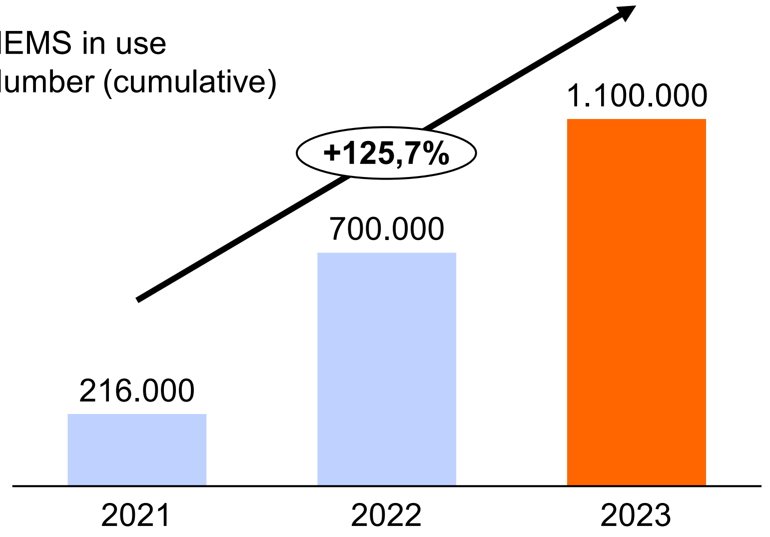
Tomorrow
- HEMS will be offered by most companies in the future, and HEMS will become the standard offering for large energy companies in particular

"HEMS as a **key technology**"

Energy monitoring and analysis tools

Market view

HEMS in use
Number (cumulative)



Demand for HEMS is rising rapidly – a quarter of German households intend to purchase HEMS in the next 1-2 years

"**Introduction** within the framework of HEMS"

"will **run via HEMS** (especially for dynamic tariffs)"

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Source: LichtBlick: "Prosumer-Report 2022", GridX: "HEMS Report 2024"

Overview of offers (1/3): HEMS and energy monitoring

HEMS

Systems for automatically controlling and optimizing energy consumption in the home

Solution offering	Today	Tomorrow
Energy companies / “8KU“	50%	100%
Regional / Public utilities	14%	86%
Start-Ups / Tech-Player	50%	83%
Overall	**38%**	**90%**

+138%

Energy monitoring and analysis tools

Software solutions and apps for monitoring, analyzing and visualizing energy consumption

Solution offering	Today	Tomorrow
Energy companies / “8KU“	88%	100%
Regional / Public utilities	57%	71%
Start-Ups / Tech-Player	67%	83%
Overall	**71%**	**86%**

+20%

Key findings

HEMS

Today
- Independent offering available, especially for start-ups and energy companies, where the offering is usually provided via partnering; public utilities with little offering
- Maturity level of start-ups significantly higher, in some cases even with AI; energy suppliers if more in MVP status

Tomorrow
- HEMS will be offered by most companies in the future, and HEMS will become the standard offering for large energy companies in particular

“HEMS as a **key technology**“

Energy monitoring and analysis tools

Today
- B2B offerings are established with almost all participants
- Some B2C offerings are not yet available or are currently being developed, often in conjunction with dynamic tariffs
- Several interfaces such as customer portals and apps are offered in some cases
- Some service solutions are realized through partnerships with SaaS providers

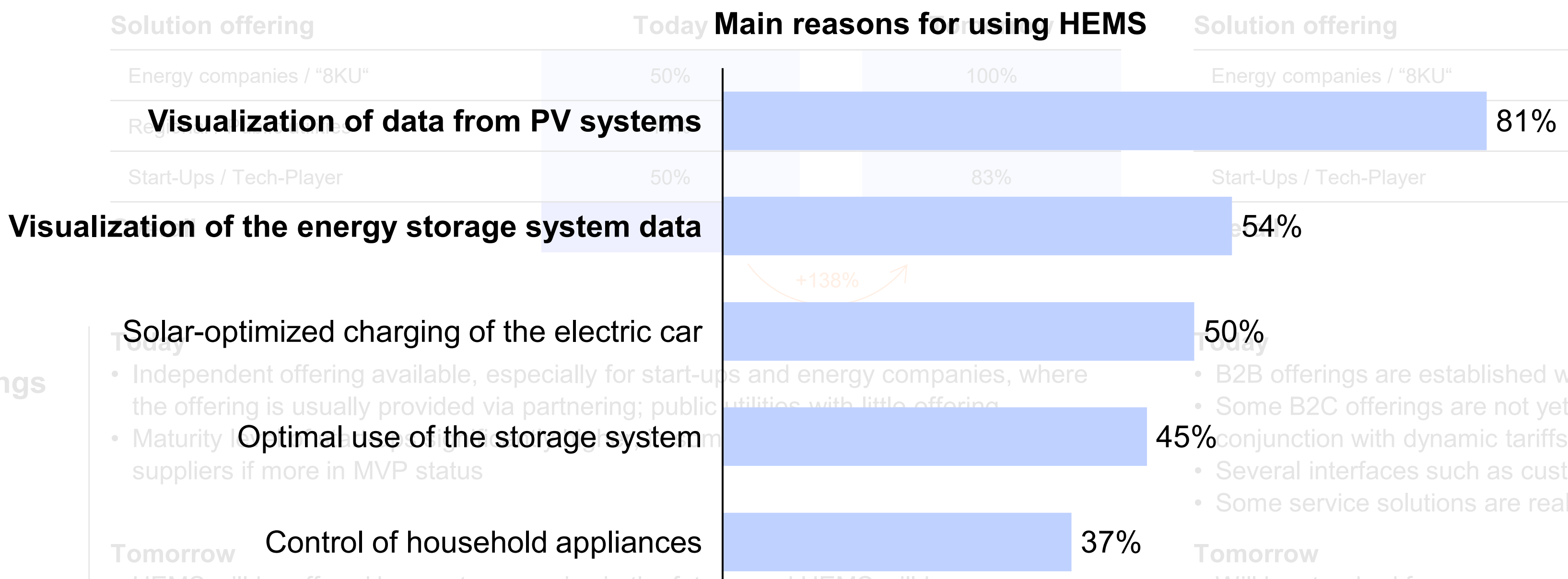
Tomorrow
- Will be standard for every energy company in the future
- On the B2C side, the topic will become standard as a combination with HEMS

“**Introduction** within the framework of HEMS”

“will **run via HEMS** (especially for dynamic tariffs)”

Overview of offers (1/3): HEMS and energy monitoring

Market view: HEMS



HEMS and energy monitoring go hand in hand
Customer use shows that energy visualization is currently the biggest use case for HEMS

Overview of offers (2/3): Installation of smart meters and dynamic tariffs

Installation of smart meters on demand

Use of modern meter technologies for precise measurement and optimization of energy consumption

Solution offering	Today	Tomorrow
Energy companies / “8KU“	38%	88%
Regional / Public utilities	71%	71%
Start-Ups / Tech-Player	17%	17%
Overall	**43%**	**62%**

+44%

Key findings

Today
- Currently being implemented either with the metering point operator with basic responsibility or through partnering with the competitive metering point operator
- The focus is on fulfilling regulatory requirements; beyond this, efforts to expand in-house are moderate
- Also seen as a challenge, as many stakeholders are involved, which hinder expansion

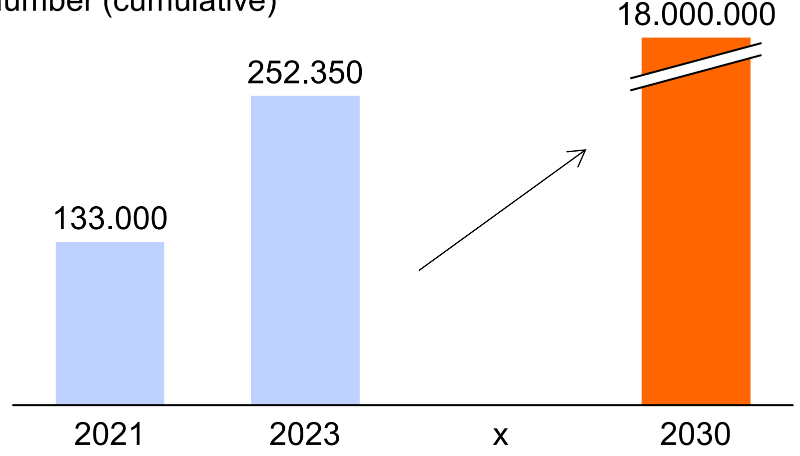
Tomorrow
- The range will expand under the pressure of regulation

“Enormous pain point: **cooperation** with several partners necessary, while in other countries the issue is **not a problem at all**.”

Dynamic tariffs and time-variable pricing

Market view

Smart Meter Development
Number (cumulative)



Smart meter is predicted to rise exponentially

“Only the **political minimum** today”

Overview of offers (2/3): Installation of smart meters and dynamic tariffs

Installation of smart meters on demand

Use of modern meter technologies for precise measurement and optimization of energy consumption

Solution offering	Today	Tomorrow
Energy companies / “8KU“	38%	88%
Regional / Public utilities	71%	71%
Start-Ups / Tech-Player	17%	17%
Overall	**43%**	**62%**

+44%

Dynamic tariffs and time-variable pricing

Tariffs that vary the price of electricity depending on the time of day and grid load

Solution offering	Today	Tomorrow
Energy companies / “8KU“	63%	88%
Regional / Public utilities	14%	86%
Start-Ups / Tech-Player	17%	83%
Overall	**33%**	**86%**

+157%

Key findings

Installation of smart meters on demand

Today
- Currently being implemented either with the metering point operator with basic responsibility or through partnering with the competitive metering point operator
- The focus is on fulfilling regulatory requirements; beyond this, efforts to expand in-house are moderate
- Also seen as a challenge, as many stakeholders are involved, which hinder expansion

Tomorrow
- The range will expand under the pressure of regulation

“Enormous pain point: **cooperation** with several partners necessary, while in other countries the issue is **not a problem at all**.”

Dynamic tariffs and time-variable pricing

Today
- B2C: Compliance with regulatory requirements, but often no active sales
- Energy companies and public utilities with billing challenges
- The limited availability of smart metering systems is problematic

Tomorrow
- Will be an integral part of all energy supply companies in future
- Partly planned in several variants and to different extents
- Active B2C sales planned by most participants
- Topic as potential for expanding platform approaches

“Only the **political minimum** today”

Overview of offers (3/3): Virtual power plants and direct marketing

Virtual power plants (VPP)

Integration of decentralized energy generation systems (e.g. solar systems, battery storage) into a virtual power plant

Solution offering	Today	Tomorrow
Energy companies / “8KU“	63%	88%
Regional / Public utilities	29%	86%
Start-Ups / Tech-Player	33%	50%
Overall	**43%**	**76%**

+78%

Direct marketing

Optimization of revenues through the marketing of electricity from renewable energies on the free energy market

Solution offering	Today	Tomorrow
Energy companies / “8KU“	63%	75%
Regional / Public utilities	43%	71%
Start-Ups / Tech-Player	33%	50%
Overall	**48%**	**67%**

+40%

Key findings

Virtual power plants (VPP)

Today
- Almost exclusively offers for B2B customers with large systems
- B2C only offered in connection with battery or e-mobility, if at all

Tomorrow
- The focus on B2B customers will continue in the future
- First projects already planned on the B2C side to be able to offer VPP in the future

“For years for business customer / established business; so far **no planned offer** for B2C / small consumers”

Direct marketing

Today
- Strong focus on B2B customers with a power requirement of > 100 kWp
- B2C offers (<100 kWp) partly declining due to lack of attractiveness or profitability
- Start-ups in particular often rely on partnering, but with little supply compared to the rest

Tomorrow
- Only sporadic efforts to expand the range or has low priority

“We did **not make a profit** in the major targets. **Significantly reduced** today”

Few use cases are currently offered to customers, but in future most companies will include use cases in their portfolio

Intelligent consumption / self-generation	**38%** offer the solution today	→	**90%** plan to actively offer the solution in the future
Smart Charging	**24%** offer the solution today	→	**86%** plan to actively offer the solution in the future
Smart Heating	**19%** offer the solution today	→	**86%** plan to actively offer the solution in the future

Core trends for flex use cases

1 | **Smart consumption and self-generation** is currently the top use case and is already offered by over a third of companies

2 | **Smart charging** is seen as a **central key** in flexibility management **- lots of capacity**, relatively “easy” to control, **great leverage**

3 | **Smart Heating** is planned **in cooperation with heat pump manufacturers** to develop a flex use case

4 | **Public utilities** do **not currently** offer any **flex use cases**, but want to **significantly expand** their offering in the future

Overview of use cases (1/2): Smart consumption and other Use cases

Intelligent consumption / self-generation

Maximizing the use of self-generated energy through intelligent control and storage to reduce energy costs and increase independence from the grid

Solution offering	Today	Tomorrow
Energy companies / “8KU“	50%	100%
Regional / Public utilities	0%	86%
Start-Ups / Tech-Player	67%	83%
Overall	**38%**	**90%**

+138%

Other Use cases

Key findings

Today
- Only occasionally offered by traditional energy suppliers
- Start-ups exploit this gap and build their business model on it

Tomorrow
- High relevance
- HEMS as a key enabler

Tomorrow
- Energy sharing (bundling of customers with many locations / PV systems)
- Smart home and household appliances
- Battery storage marketing

“It **doesn't matter** today, but it will be an issue **in the future**.”

“Energy sharing is currently **being prepared** and the first **research projects** have already been launched.”

Overview of use cases (2/2): Smart charging and smart heating

Smart Charging

Intelligent charging management for electric vehicles to optimize charging times and grid stability

Solution offering	Today	Tomorrow
Energy companies / "8KU"	25%	100%
Regional / Public utilities	0%	86%
Start-Ups / Tech-Player	50%	67%
Overall	**24%**	**86%**

+260%

Smart Heating

Efficient heating control through intelligent systems to reduce energy consumption

Solution offering	Today	Tomorrow
Energy companies / "8KU"	25%	100%
Regional / Public utilities	0%	71%
Start-Ups / Tech-Player	33%	83%
Overall	**19%**	**86%**

+350%

Key findings

Smart Charging

Today
- First offers tested with customers, but currently still too few incentives available

Tomorrow
- Topic becomes a central building block in B2C flexibility management
- Differentiation between PV charging, smart charging and flex charging
- HEMS as a key enabler
- Often implemented via strategic partnerships
- High synergy potential as a use case with dynamic tariffs

"Planned. Important, perhaps the most **important component** of flex management!"

Smart Heating

Today
- Offers not yet established, but in development
- Focus on cooperation with heat pump manufacturers

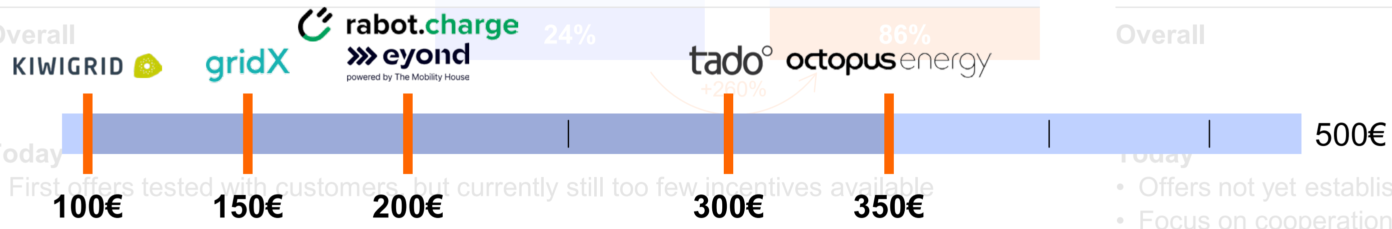
Tomorrow
- Key topic for the heating transition
- HEMS as a key enabler
- Implementation partly through partnerships
- High synergy potential as use case with dynamic tariffs

"In **cooperation** with a heat pump manufacturer"

Overview of use cases (2/2): Smart charging and smart heating

Market view: Smart Charging

Price advantages depending on the energy supplier passing on savings



Using or enabling the use of **flexibility** in the smart charging use case can mean annual **savings of over €350 for consumers**

Smart Charging

Intelligent charging management for electric vehicles to optimize charging times and grid stability

Solution offering	Today	Tomorrow
Energy companies / "8KU"	25%	100%
Regional / Public utilities	0%	86%
Start-Ups / Tech-Player	50%	67%
Overall	24%	86%

+250%

Smart Heating

Efficient heating control through intelligent systems to reduce energy consumption

Solution offering	Today	Tomorrow
Energy companies / "8KU"	25%	100%
Regional / Public utilities	0%	71%
Start-Ups / Tech-Player	33%	83%
Overall	[illegible]	[illegible]

+350%

Key findings

Smart Charging – Today
- First offers tested with customers, but currently still too few incentives available

Smart Charging – Tomorrow
- Topic becomes a central building block in B2C flexibility management
- Differentiation between PV charging, smart charging and flex charging
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"Planned. Important, perhaps the most **important component** of flex management!"

"In **cooperation** with a heat pump manufacturer"

Source: SMP Research

Excursus: Make, Partner, Buy as a way to implement offers & use cases

→ Prerequisites for flex management

As a company, you need to have the **right hardware and software solutions** to implement flex management use cases and offerings for your customers

Technological requirements (maximum level)

- HEMS
- Smart Meter / -Gateway
- Billing engine
- Decentralized assets (e.g. PV, heat pump, storage, etc.)
- Aggregation platform

Enable

Offering	Use Cases
HEMS	Smart Charging
Energy monitoring & analysis tools	Smart Heating
Installation of smart meters on demand	Intelligent consumption / self-generation
Dynamic tariffs and time-variable pricing	
Virtual power plants (VPP)	
Direct marketing	

→ Options for creating the necessary conditions

	Brief overview	Trends from the Pulse Check
Make	The **company develops** the necessary technologies, skills and systems **itself** + **Full control** over development and implementation, high flexibility for adaptations and all data remains within the company – **High time and cost expenditure**, need for internal resources and expertise, as well as longer implementation time	• **Start-ups and scale-ups focus primarily** on the **in-house development** of **specialized** software solutions • **Most participants' own contribution is low** and focuses on internal billing issues
Partner	**Cooperation with external partners** to jointly develop or offer necessary technologies or services + **Fast market access** through shared expertise and external know-how as well as shared costs and risks – **Dependence on partners**, complex coordination processes and possible compromises in terms of control and data sovereignty	• All participants **already have collaborations** and often **strive for more** • **Complexity** of **platform solutions forces cooperation** in order to meet technological requirements and customer wishes ("ecosystem partnerships") • **Cooperation covers different parts of the value chain** in order to make optimum use of synergies • **Trend towards "white labeling"** - companies with a strong brand sell hardware or software under their name, even though their own share is low "**Time for partnerships** - partner management is important"
Buy	**Purchase of ready-made solutions** or technologies from third-party providers + **Fast implementation**, low resource requirements in the company and access to tried and tested technologies – **Less flexibility and adaptability**, dependence on external providers	• **Hardware** such as storage systems, PV systems, meters etc. is purchased from **external providers** • **Competencies and strategic orientation** are **not** aimed at developing the value chain through to **hardware production**

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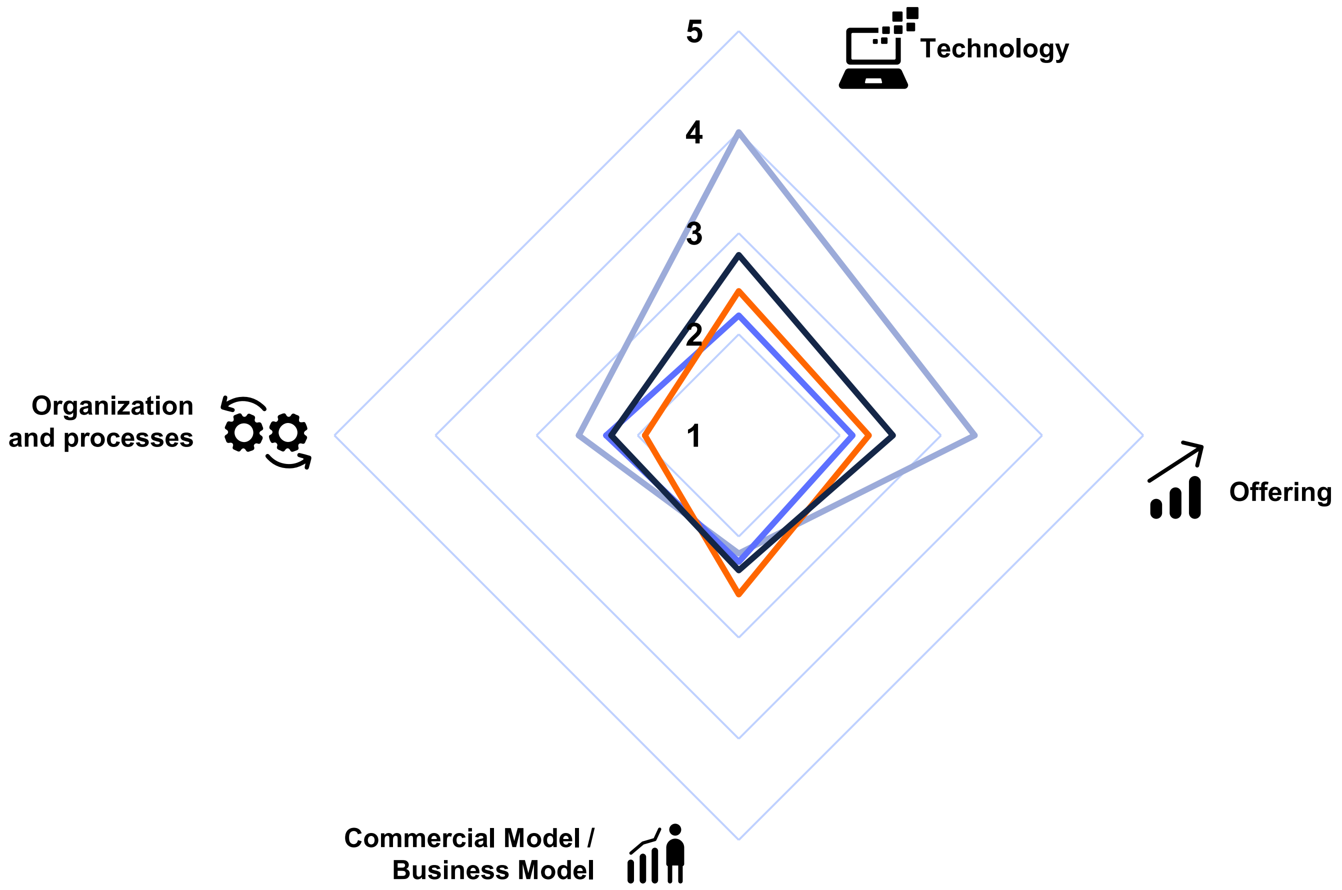
Maturity level

Technology and offering most mature, especially for start-ups / scale-ups

Commercial model least mature

Maturity level

How would you rate your company's level of maturity in the area of flexibility management along the following dimensions?



5 = highest degree of maturity
1 = lowest degree of maturity

Ø Market | Ø Energy companies / “8KU“ | Ø Regional / Public utilities | Ø Start-Ups / Tech-Player

Maturity level

B2B more mature overall than **B2C**

There is **potential for optimization** in scaling, customer focus and linking the dimensions

Maturity level – Market

Technology	• **B2C struggles with scaling issues** as platforms are still in the development phase and billing systems are difficult to work with Flex • **B2B well positioned**, but there is potential for further improvements	"... can move loads, but do not **yet have an aggregator**"
Offering	• **Regional energy suppliers** are taking the **first steps** towards integrating flexibility • **Large energy suppliers** have a **strong B2B offering**, but **weaknesses in the B2C sector** • **Start-ups and scale-ups** are **successfully mapping dynamic tariffs**	"...well developed on paper - **not yet implemented**"
Organization and processes	• **Cross-divisional coordination** required to efficiently offer and implement **E2E services** • The majority of the suppliers are not yet well positioned in this respect; the overall maturity level of start-ups/ scale-ups is rather low	"...however, this affects the entire **end-to-end value chain** (VAC), including district heating. The topic is extremely broad and **anchored throughout the entire Group**"
Commercial Model / Business Model	• Flex customer loyalty offers added value, but **lacks validated business models** • **Immature technologies and open pricing strategies** are slowing down progress • **MVP tests are underway**, but **monetization approaches** are still **unclear**	"**Added value** is created - but the question is: what is my **share of the cake**?"

Challenges

Management issues such as prioritization and strategy pose a **greater challenge** than technology and expertise

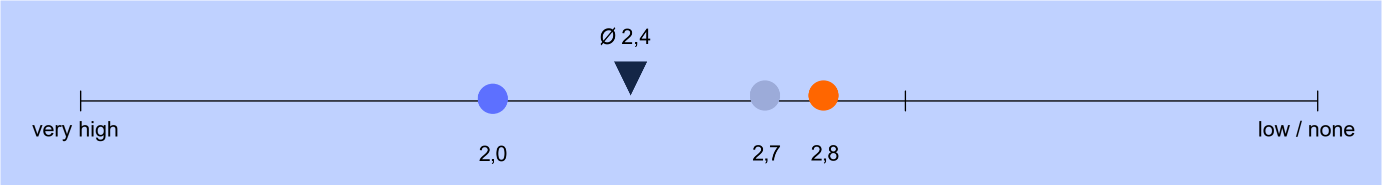
Public utilities face comparatively **more challenges** when it comes to technology and expertise

Challenges

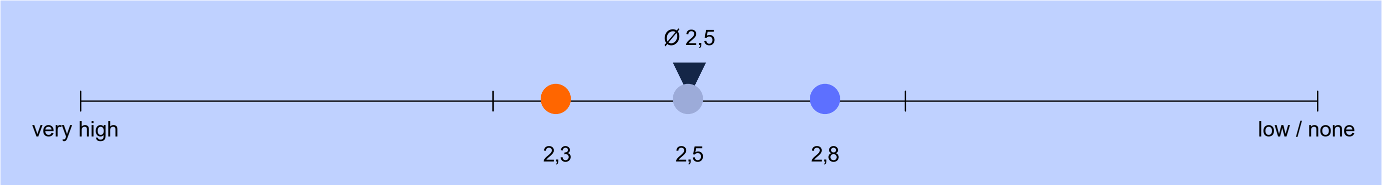
What challenges are you currently facing?

1
Many other priorities

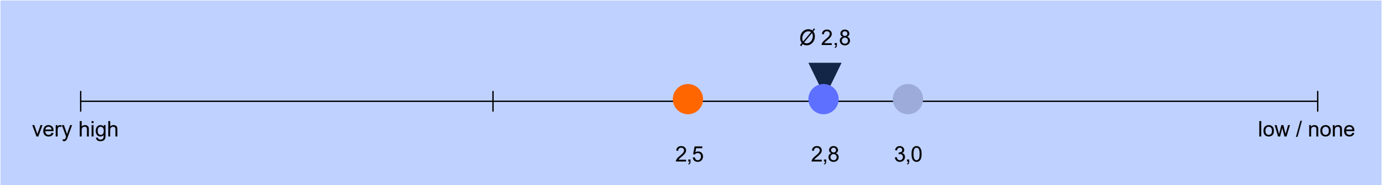
2
Lack of a holistic strategy



3
Technological implementation



4
Lack of know-how



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Ø Market | Ø Energy companies / “8KU“ | Ø Regional / Public utilities | Ø Start-Ups / Tech-Player

Keeping an eye on challenges: Implementing flexibility management in a targeted manner

Challenges

1 **Many other priorities**	There is **competition for resources** with other topics / departments, with the **implementation of regulatory requirements** often tying up relevant capacities	"Flex will **continue to be disorganized** for the next 1 to 2 years"	"**Technology and regulation** remain important topics that tie up resources for flexibility management"
2 **Lack of a holistic strategy**	A **different understanding** among many stakeholders and a **lack of strategic clarity** about what is actually being aimed for are key problems	"**Clarity**: what do I actually want, where do we want to go"	"**Marketability** as the biggest challenge!"
3 **Technological implementation**	The **integration into existing processes** and the **scalability of the systems and solutions** pose major challenges	"The challenge here is always that the use cases are **implemented** "**generically**". In other words, **without foresight** - e.g. is it scalable to other regions?"	"**Technical integration** into existing processes"
4 **Lack of know-how**	**Know-how** itself is **less of a challenge**, as it is often available; the **problem** is rather its **availability and uneven distribution**	"**Know-how** is there - just distributed"	"Time for **partnerships**!"
Other challenges	**Market access** via **partnerships** or **integration into third-party ecosystems** is particularly challenging for smaller companies *Also difficult*: marketability & test customers	"Every manufacturer is trying to establish its **own (closed) ecosystem**; it's not easy to access the data"	"It is difficult to **anticipate** now how suppliers will **link HEMS and the trading platform** in the future"

Flexibility management of the future: customer orientation, IT scalability, flexibility and strategic use of resources as the key to success

Success factors

Customer understanding	A **deep understanding of customer needs** and **clear communication** are key to **guiding customers through change** and making them **understand** the **benefits of flexibility solutions**	"The complexity must run in the **background** - it must be **simple and intuitive** for the customer to use" "A lot of **educational work** necessary"
IT infrastructure	The IT infrastructure must be **designed to be future-proof** in order to ensure the necessary data flows, billing processes and integrations through **scalable systems** and **optimized end-to-end processes**	"Energy supply companies must evolve into **technology-oriented** platform providers" "**Understanding** and **mastering** data flows" "**clean** architecture"
Commercial Model	A successful business model requires the close **linking of commodity and energy-related services** as well as **cross-departmental cooperation** in order to exploit synergies	"Holistic approach to **integrating all elements** with an end-to-end perspective"
Regulation	A **flexible and proactive approach** to the constantly **changing regulatory** environment is necessary in order to **meet legal requirements** and offer **customer-friendly solutions** at the same time	"Regulation, particularly with regard to the **smart meter rollout"**
Resources	The **availability of financial resources, manpower and strategic partnerships** forms the basis for the development of the necessary technologies and long-term growth in flexibility management *Also difficult*: marketability & test customers	"Staying power & **good financing**"

SMP Point of View: Our 7 “Lessons Learned” - points that are important for successful positioning in the context of flexibility management

The overall higher estimated **market relevance** is offset by lower **customer demand** (esp. B2C). The key to the breakthrough of flexibility management therefore lies all the more in **customer-centric** and **easy-to-understand communication**, which also emphasizes the **benefits for customers** in particular.

The **challenge** of **prioritization** and **strategy** can be solved primarily by **management** and can be tackled well by taking a **holistic view** of all issues.

Companies are working particularly hard on the **maturity of their technology and offering**. At present, it could be particularly crucial to invest here in order to **keep up with the market**. The improvement of processes and the business model can then be tackled **once customer demand** has also increased.

As a customer with greater understanding and demand, the **B2B segment** could be a good opportunity to economically expand offerings, processes and infrastructure, test concepts and then scale them up.

Although **energy companies / “8 KU”** have different opinions about the market and company relevance, they are nevertheless planning to offer all flex services and use cases as best as possible. These energy supply companies face particular **challenges** in prioritizing the topics, the offering and the technology, including scalable processes and IT infrastructure.

Regional / public utilities are either **skeptical** about flexibility management or **strongly** believe in its **relevance**. Flex offerings and use cases have a **B2B focus** here, although B2C business is also to be expanded. There is a lot of catching up to do in terms of **maturity**, particularly in terms of processes / organization.

Start-ups and tech players believe in the **relevance** of flexibility management. They usually focus on **core offerings** that are already mature and technologically underpinned. In addition to a large **number of priorities**, the development of business models is also challenging. The expansion of flex use cases is the main focus of **planning** here.

As SMP Strategy Consulting, we have been able to support a large number of different companies in the context of flexibility management in recent months

Strategy	Products & Offering	Digital Services	Network-oriented Control

SMP STRATEGY CONSULTING **SMP PROJECT EXPERTISE (EXCERPT OF CURRENT PROJECTS)**

Strategy	Products & Offering	Digital Services	Network-oriented Control
“8KU“ **Further development of energy services strategy with focus on HEMS** Top energy supplier **VPP and direct marketing strategy**	Top energy supplier **“Dynamic tariffs – perspective 2024”** Top energy supplier **“Target image and HEMS roadmap”**	Top energy supplier **“Way Forward - visualization solution for energy consumption”**	Distribution system operator **“Flexibilization of controlVE[1] in the low voltage”**

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