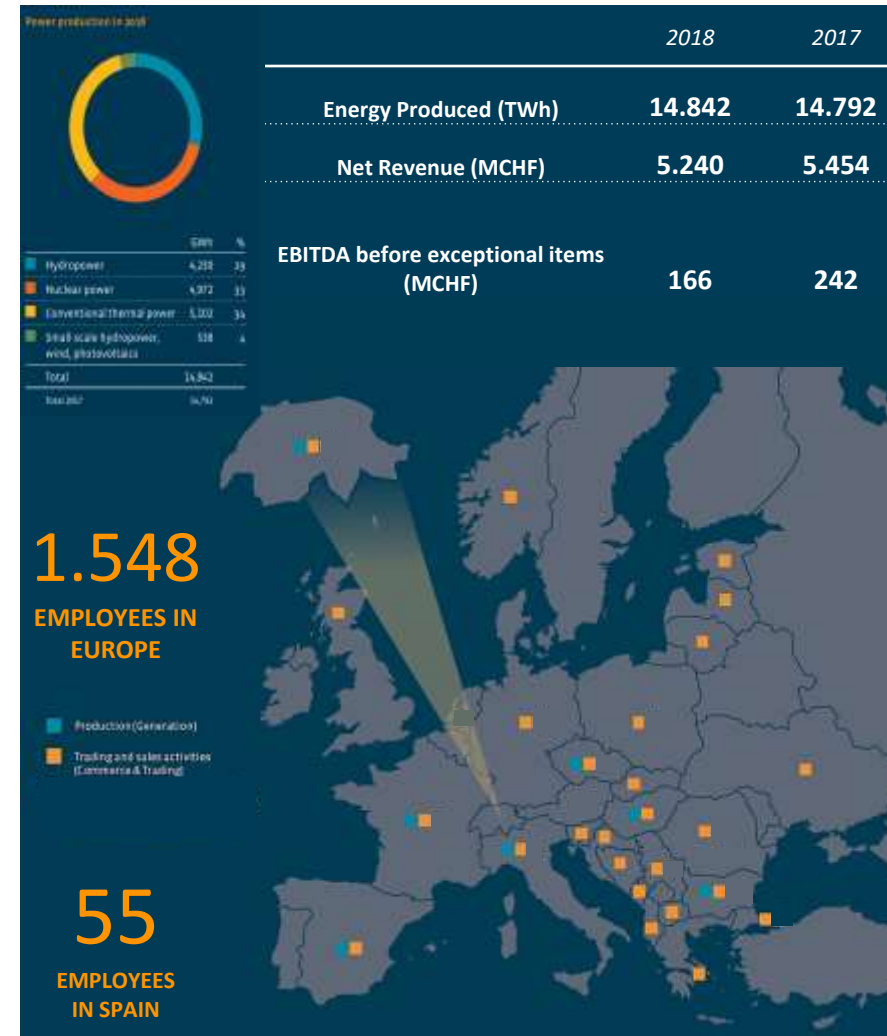


Alpiq: Flexibility Optimization in European Markets



Alpiq is a Swiss company with activities all over the electricity and gas value chains.

- Diversified generation portfolio, including hydroelectric plants, nuclear plants, combined cycles, conventional thermal plants, wind power plants and solar PV.
- Gas and electricity supply to end customers.
- Wholesale operator linked with both commodities and with presence in the main European hubs.
- Commitment with digitalization of every operation, the introduction of algorithms and demand side management.



** Note: CSA Energy Infrastructure Switzerland (Credit Suisse) financed the acquisition of 25% share to EDF Investments on 05-Apr-2019

The power market is undergoing a major transformation

ALPIQ



Core elements

“Decarbonuke”

- Shift to **renewable generation** technologies, increased **energy efficiency** and **electrification across sectors** (sector coupling)
- **Reduction of nuclear capacity**

Drivers Selection

- **Political push** towards less carbon-intensive economies
- **Technological progress**, e.g., increase of electric vehicles
- **Customer behavior**, such as the push for sustainability
- **Risk management strategies** of producers and customers as key driver of Forward price dynamic

Major implications

- **Decrease of base load** production in Europe
- High wholesale power price **volatility**
- **Increase of gas to power**
- Increased incentives for energy efficiency

Decentralization

- Shift to many **small energy generation assets**, such as solar PV panels, wind farms, and CHPs, and to **multi-directional power flows** (prosumers)

- **Political push** towards market liberalization
- **Technological progress, incl.** cost decline and output growth for new generation technologies
- **Customer behavior**, such as search for energy autarky

- Increased **number of generation assets require fundamental different management**
- Prosumers drive **multi-directional energy flows**

Digitalization

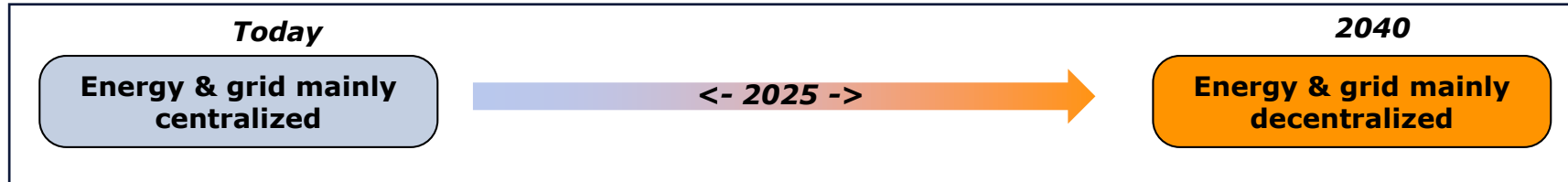
- Shift to a digitalized energy value chain, resulting in increased **automation** and **data flows**

- **Technological advancements**, such as improved data processing
- **New market entrants** and **business models**, e.g., from kWh to service- and data-based business models
- **Customer behavior**, e.g., move to online channels

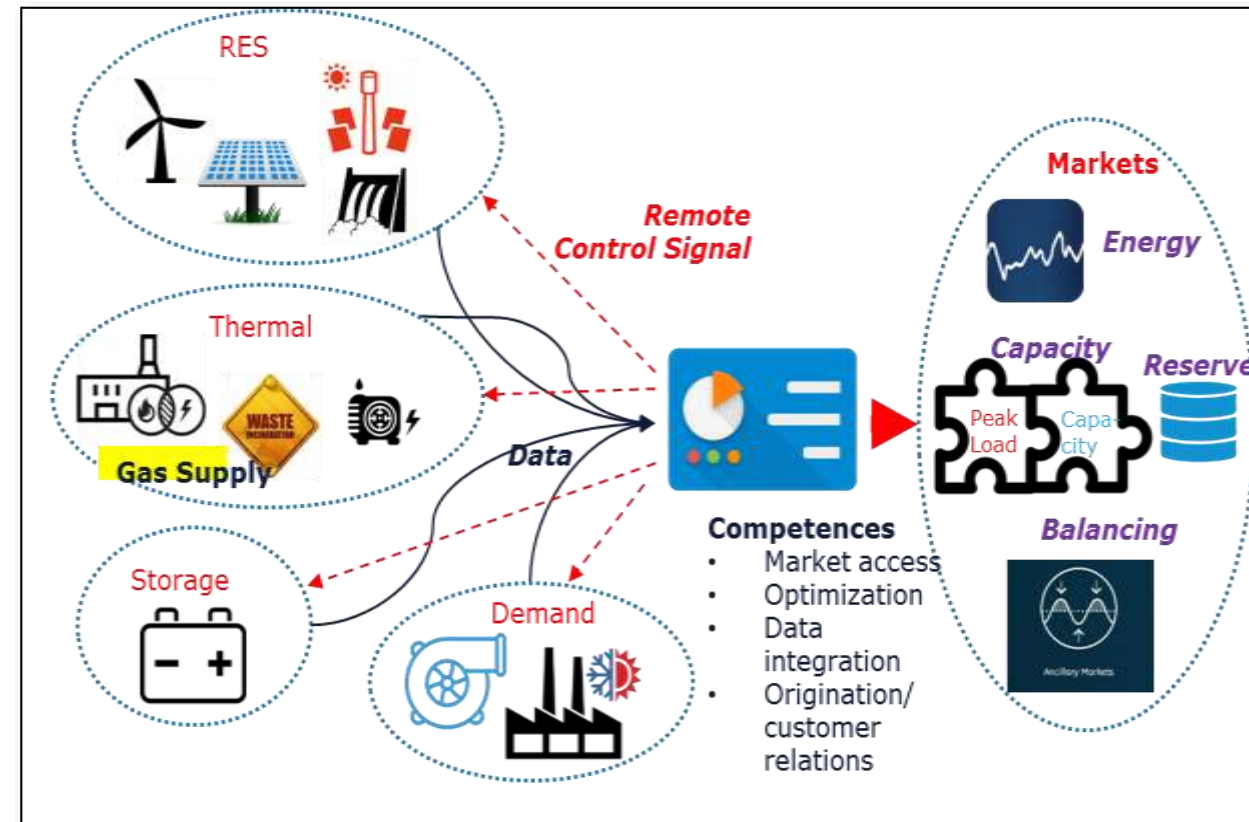
- Need to manage markets in **real-time** to extract additional optimization value
- Need to develop new digital **capabilities**

2025: major change will be on flexibility market

Emergence of (real time) flexibility/virtual capacity markets



1. Reserve margins are progressively decreasing following the reduction of conventional power plants (see examples in DE, FR, UK)
2. The reserve margin decrease favors the development of new flexibility providers, such as demand response and batteries



Our product offering

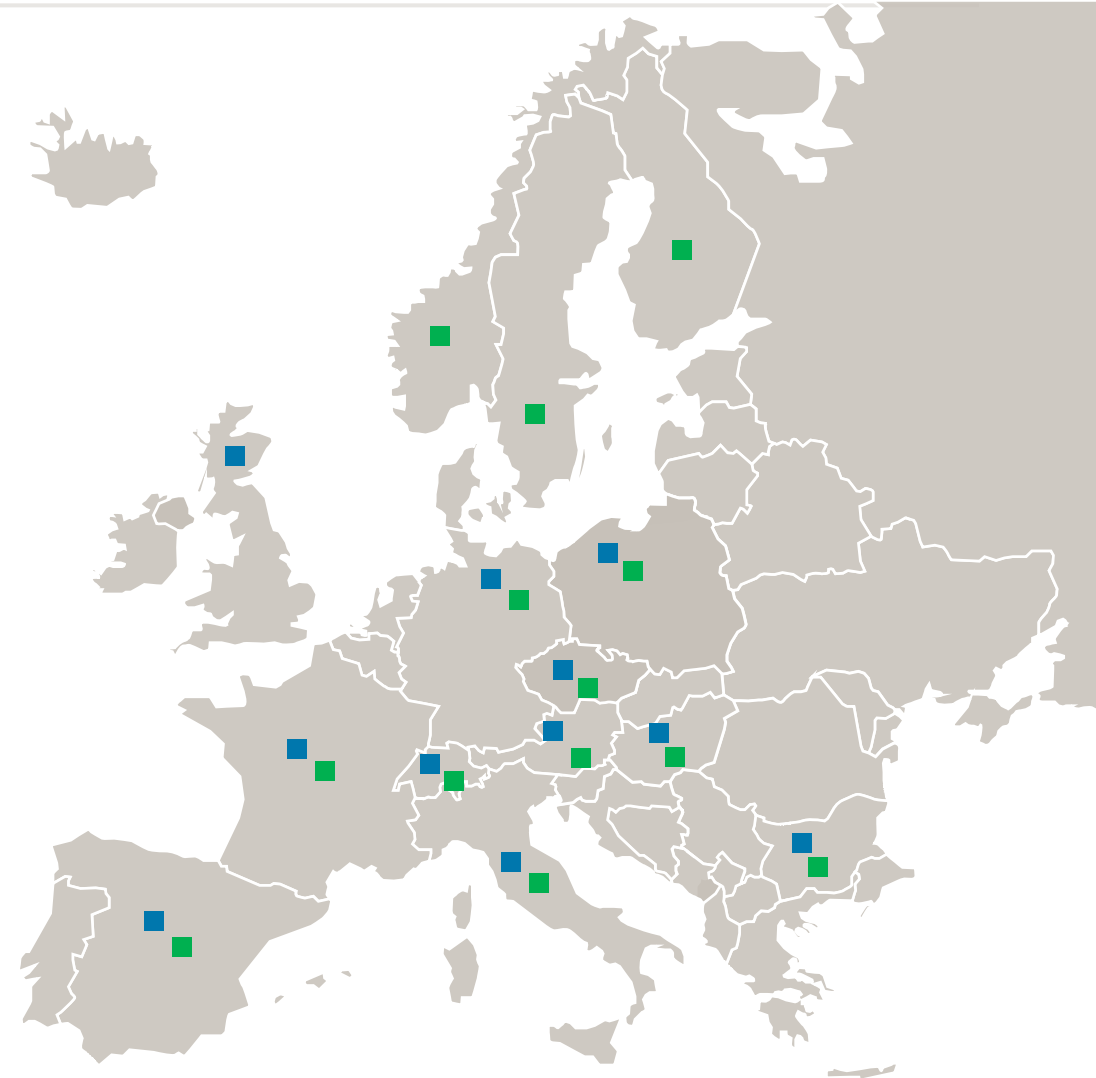
Flexibility and renewables marketing across Europe

Management of flexible assets

- Tailor-made products range from pure market access to optimize and manage the entire energy market risks across all time horizons
- Marketing and optimization of flexibility and underlying commodities (Power, Gas...) on all relevant routes to the market guarantees maximum value for our customers

Management of renewables

- Wind product range for wind, solar, biomass and hydro assets
- PPA products for both, new non-subsidized assets as well as old assets leaving the respective subsidized scheme
 - Tailor made, market and customer specific
- Direct marketing products for subsidized assets
 - Alpiq is off-taking balancing risk
 - Alpiq is off-taking market value risk (in specific markets)
- Management of guarantees of origin



Why partnering with Alpiq?

Our vision: "Connecting our customers to the market – in real-time"

- Historically grown expertise - Management of **flexibility** on energy markets **is our DNA**
- **Optimization and trading** of **5.5GW** of own assets and **+2.5GW on behalf of our customers** on the European energy markets
- Risk Management and **revenue optimization** across **all time horizons** and **all relevant routes to the market** (Spot and intraday markets, ancillary service markets, long-term hedging, multi-commodity...)
- **Competitive and tailor-made product offering** by connecting new technologies and small scale assets to our digital platform. We are **continuously extending the number of connected assets** and technologies (batteries, renewables, Power2x...) to extract additional value due to a portfolio optimization
- Combination with other Alpiq products such as power and gas supply



Thanks

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