endustries

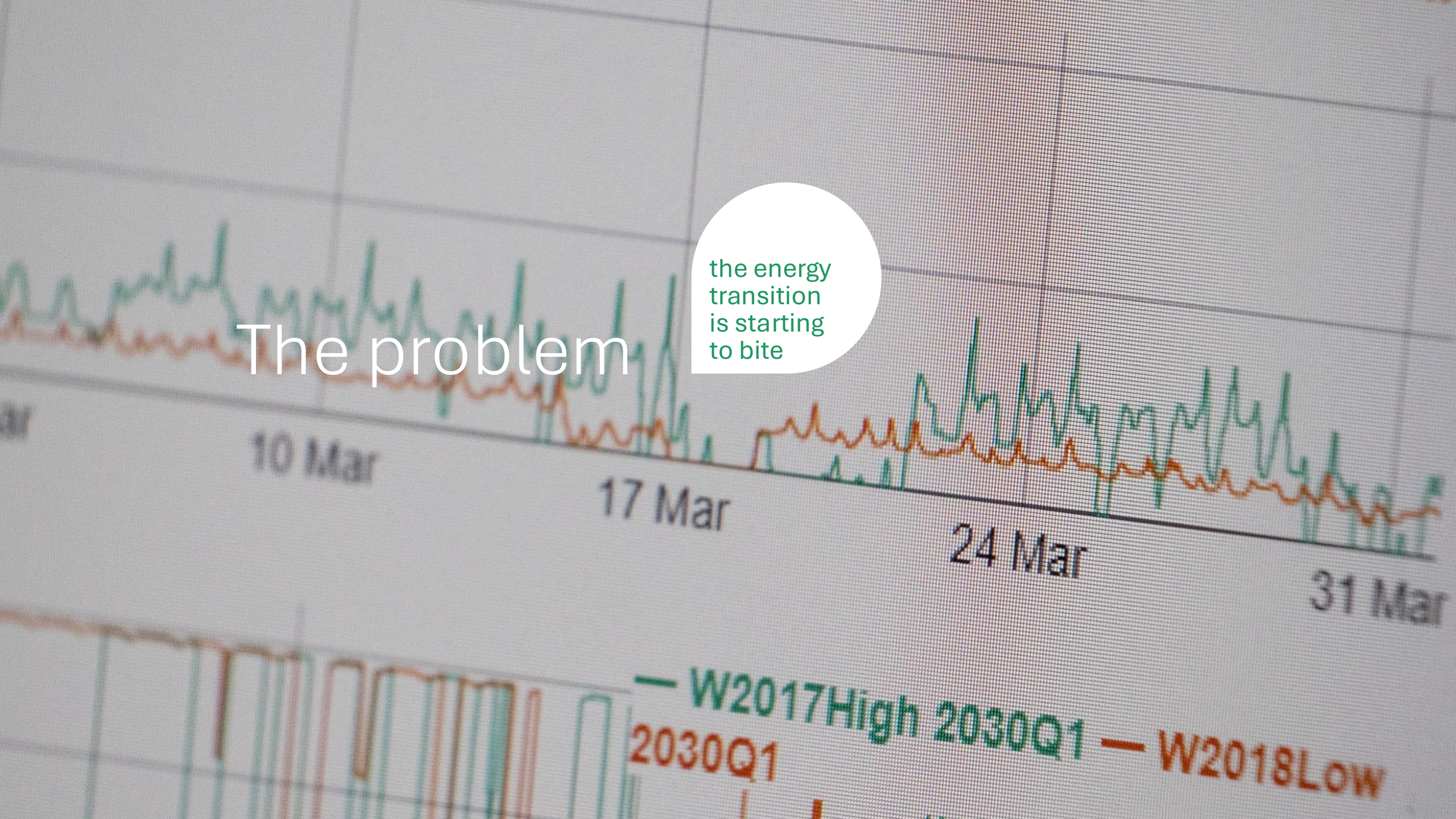
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Software for Industrial Flexibility

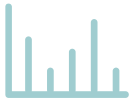


The problem

the energy transition is starting to bite



The problem



the energy transition is increasing the **volatility** of market prices



increasing electricity **grid fees** & complex fee structure



magnified by net-zero policy push increasing **electrification** of industry

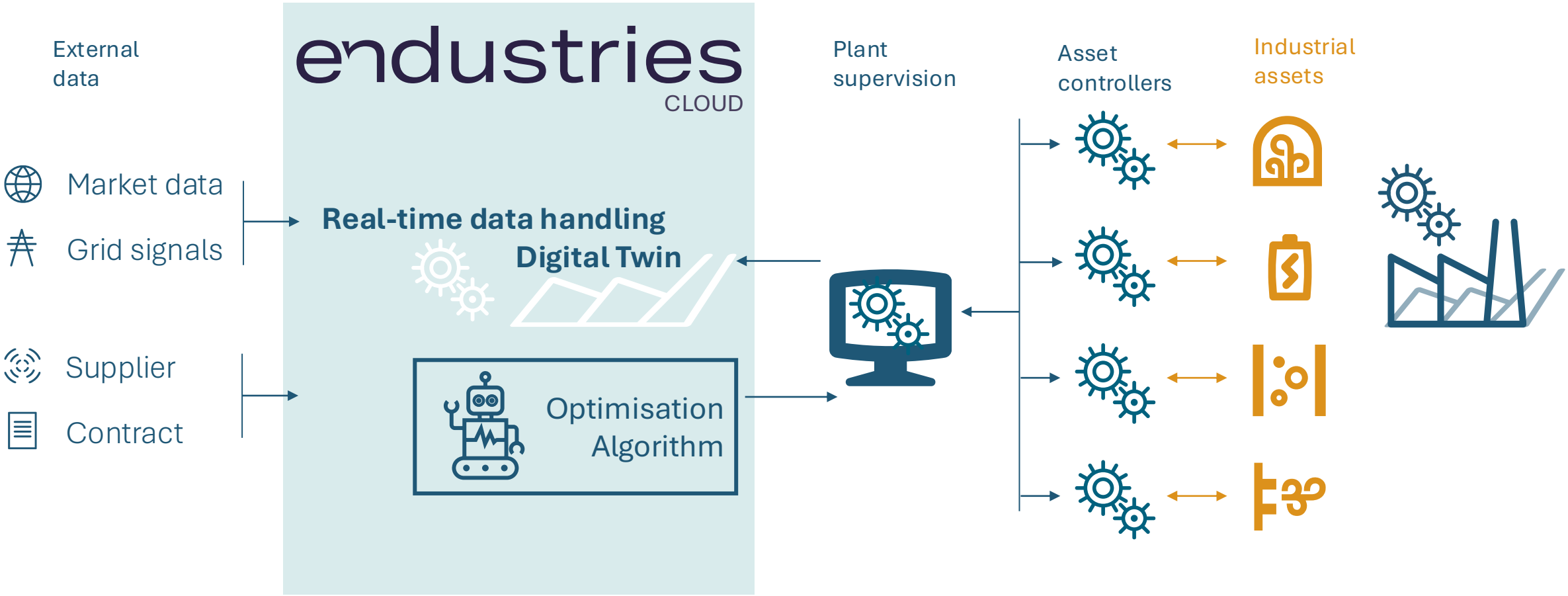
Our solution

Real time steering of industrial assets on market prices



Our solution

- Real time steering of industrial assets on market prices
- Digital twin
- Cloud based software platform



Benefits

- **5%-15% reduction** of total energy cost (!)
- Turning uncertainty due to volatility **into opportunity** by riding the price waves
- **Less scope 1 emissions** due to electrification
- Integration of **more renewable energy** in the system

PRAYON

puratos
Food Innovation for Good

KWEKERIJ
Dirk Mermans

Tessenderlo Group
EVERY MOLECULE COUNTS

To unlock industrial flex

What we think is critical

#1 › **Process first**

all technical & operational constraints are respected by the algorithm - *the digital twin*

#2 › **Integrated**

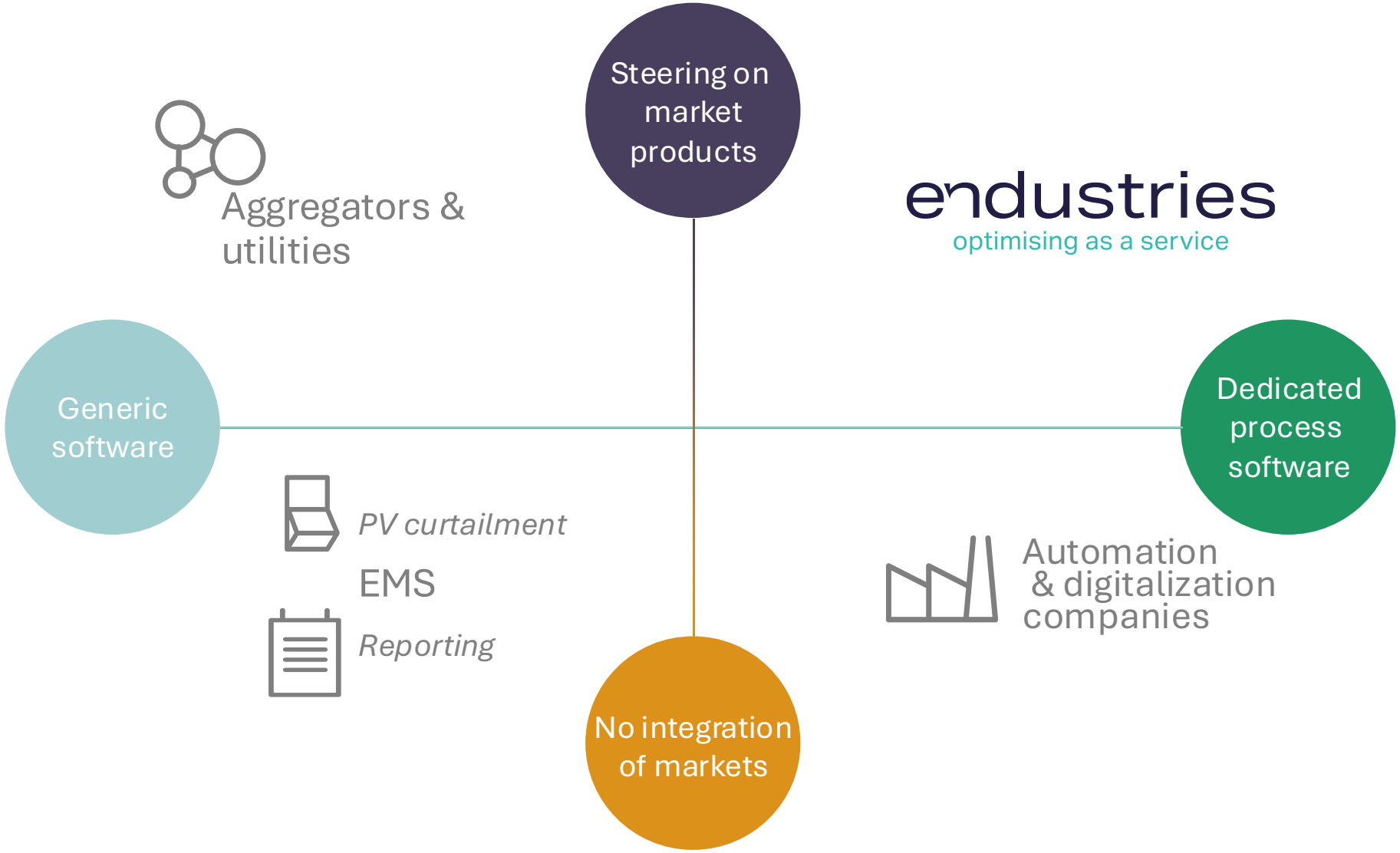
optimizes process *and* economics - easy integration with existing EMS and local control & safety logics

#3 › **Independent**

customer freely chooses energy supplier & aggregator

The product

Unique **positioning** to unlock industrial flexibility



The product

Unique **product features** to unlock industrial flexibility

	Entras	Utilities & aggregators	advanced aggregators	EMS reporting	Vertical solutions	Automation cpy	Customer internal
Real-time steering on prices	✓	✓	✓	±	✓	✓	✓
Dedicated process, digital twin	✓	✗	✓	✗	✓	✓	✓
Multi-asset, behind-the-meter (grid costs)	✓	✗	✗	✗	✗	✓	✓
Optimize margin, incl. all opportunity costs	✓	✗	✗	±	✗	✓	✓
Independent	✓	✗	✗	±	±	✓	✓
Fixed fee subscription model	✓	✗	✗			✗	✗
Professional services	✓	✗	±	±	✗	✓	✗
Quick setup	✓	✓	✓	±	✓	✗	✗
Evolves over time	✓	±	✓	±	±	✗	±

Dispatching models for energy-intensive industry

Behind the meter – multi-asset optimization – a library of assets



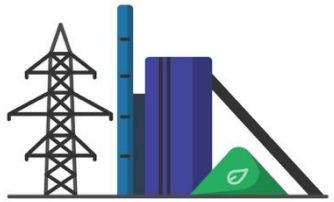
Renewables

- physical
- PPA



Power Plant

- CCGT, OCGT
- engines
- cogeneration



Biomass

- Fuel variance
- Sootblow

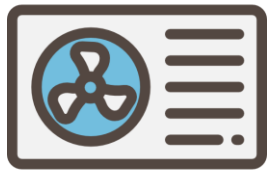


Electrolysis

- Cl-alkali
- Power-2-X

Your Process

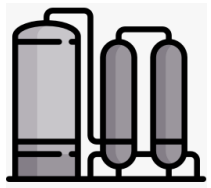
Demand
Schedule
Constraints
Grid Connection
Contract



Heat pumps

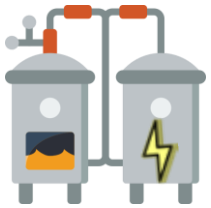


Storage



Buffers

- water
- product



E-boiler


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