



Factory Automation Tour

Sustainable production with
smart Energy Management

siemens.dk/energy-management

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Who are we...?



Erik
Systemintegrator
Bit & Byte A/S

Per Hemmingsen
Technology Specialist

Jakob Nordtorp
Technology Specialist

Who are we...? Søde Sager A/S



Erik
Systemintegrator
Bit & Byte A/S

Per
Produktionschef
Søde Sager A/S

Jakob
Maskinbygger
Dream Machine A/S

Søde Sager A/S – uhhh det smager



**Hos Søde Sager A/S
leverer vi alle slags kager!**

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Virksomheden Søde Sager A/S – Søde Sager leverer alle slags kager!



Vores hovedaktionær har gennem sit netværk fået kontakt med potentiel ny kunde

MADgrossisten
DIN FØDEVARELEVERANDØR



12345 MG Kagen

Lækker kagen med

CO₂e 2,22

Enhed ÆSK (1260 G) Ant. 1

CO₂e-beregner

Værdien angiver, hvor mange kilo CO₂/kuldioxid, der er udledt ved fremskaffelse af 1 kg drænvægt af den pågældende råvare.

Værdien er baseret på sparsomme datakilder på området og kan være unøjagtig. Vi håber løbende at kunne forbedre datakvaliteten. Det er et skridt i den rigtige retning og vi håber at kunne give dig et mere oplyst valg, når du handler fødevarer.

Vi påtager os intet ansvar for de præsenterede data og den efterfølgende anvendelse heraf.

[Se mere her om beregningerne og værdierne](#)

TILBUD ÆSKE

DKK 150,00

[TILFØJ](#)

Næringsindhold & ingredienser Allergener Enheder Yderligere info [Print](#)

Næringsindhold pr. 100g

Energi

Fedt

- Heraf mættede fedtsyrer

Kulhydrater

- Heraf sukkerarter

Protein

Salt

Søde Sager A/S SKAL levere CO₂-tal for at kunne levere til MADgrossisten!

Virksomheden Søde Sager A/S – Søde Sager leverer alle slags kager!



Bestyrelsen har besluttet følgende:

- Vores produkter skal mærkes med CO₂-aftryk
- Energidata skal godkendes af revisionen
- Energiforbrug skal reduceres med 2 % pr. år
- Nye driftsmidler skal energimærkes.

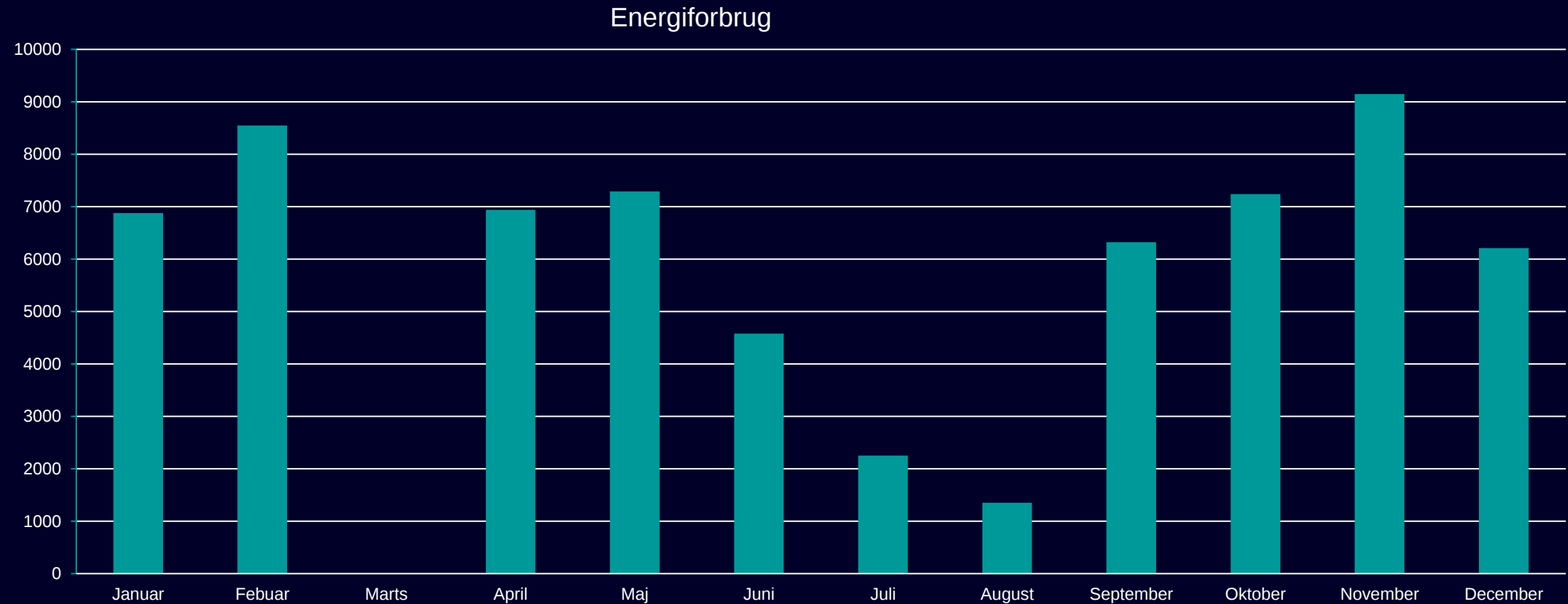
Virksomheden Søde Sager A/S – Søde Sager leverer alle slags kager!



Vores aktuelle situation er følgende:

- Vi har energimålinger på 6 fordelingstavler i produktionen
- Bent indsamler energimålinger på ugebasis
- Else på kontoret samler de ugentlige tal i et Excel-ark, der kan bruges generelt i forretningen.

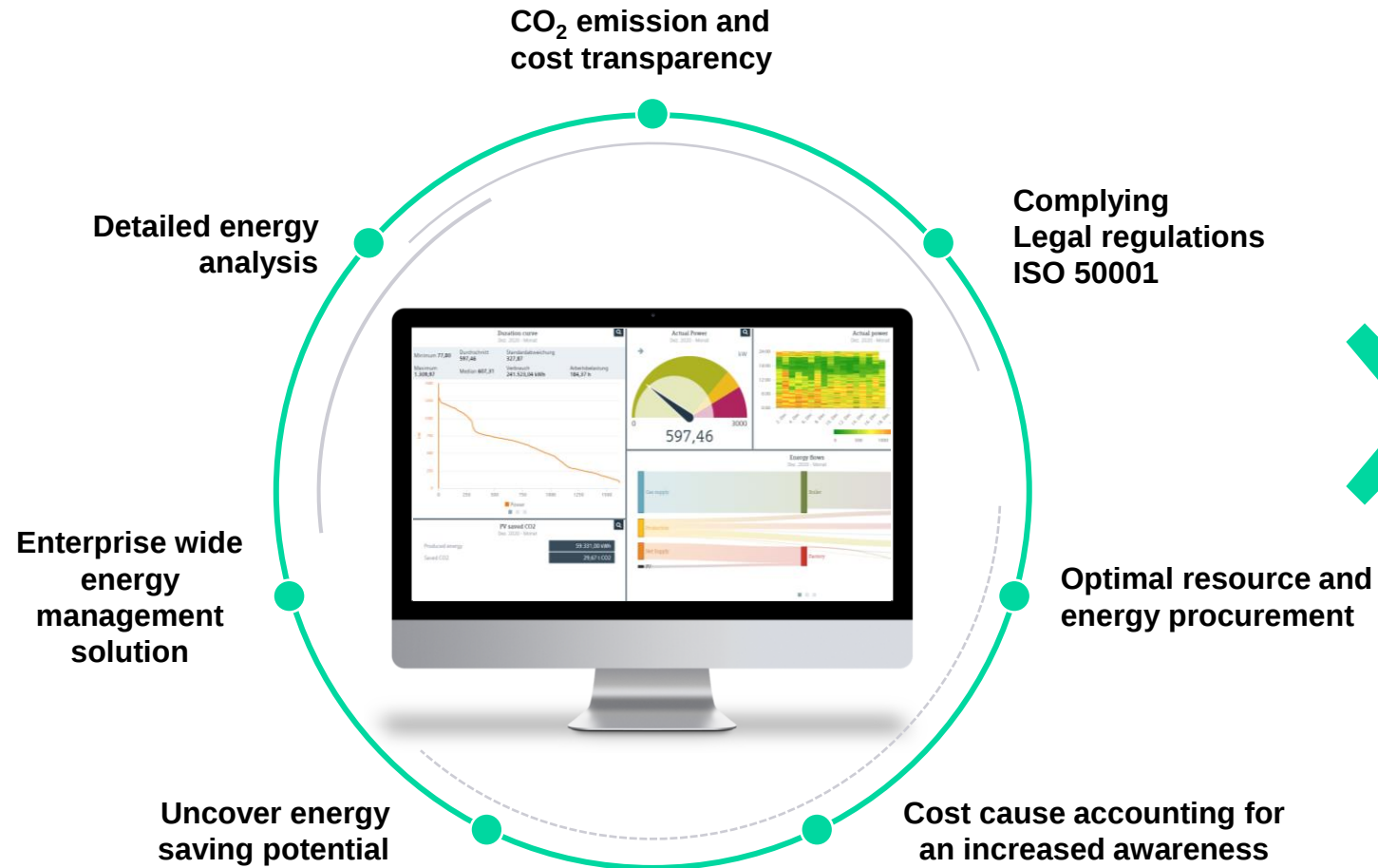
Virksomheden Søde Sager A/S – Søde Sager leverer alle slags kager!



Hvad kan vi gøre?

“Der må findes smartere og mere automatiske løsninger!”

Obtain the greatest value from transparency



SIMATIC Energy Manager - www.siemens.com/energymanager



Legal
regu-
lations



Carbon
Foot-
print



Optimized
use of
resources

Situation

- Insufficient data and analytics
- Inability to conduct detailed energy analysis

Requirements

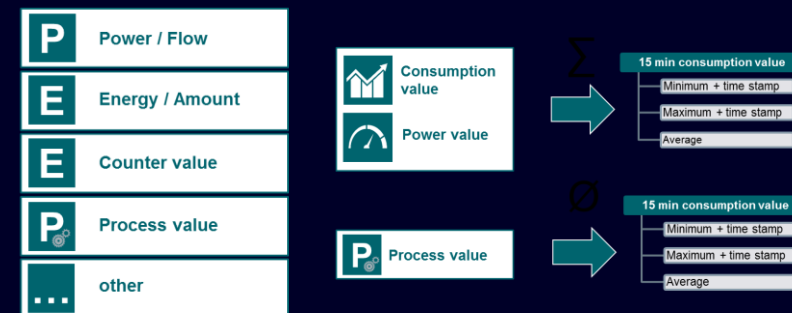
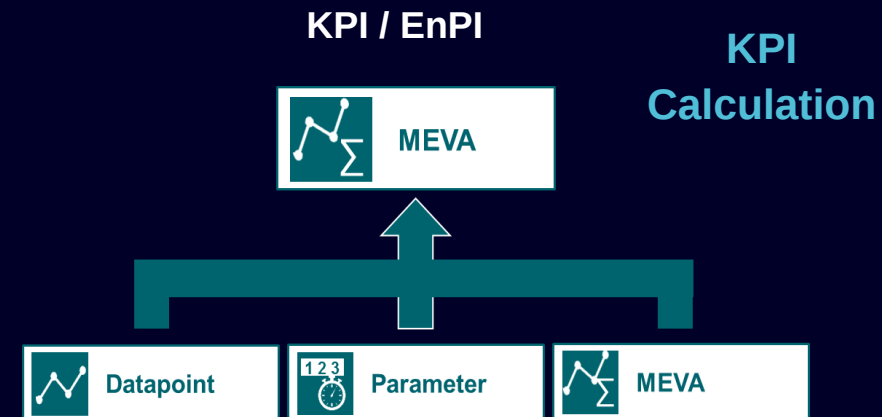
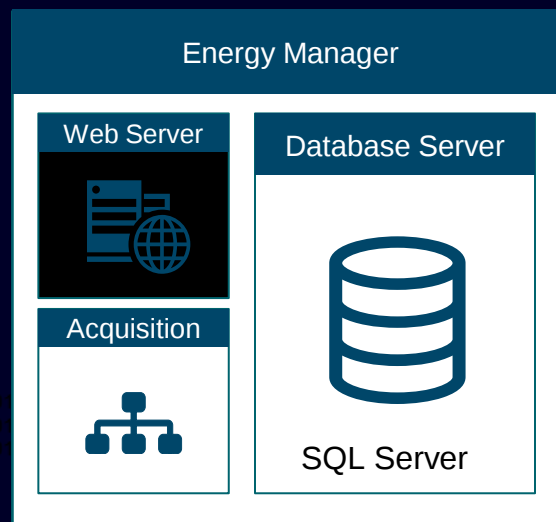
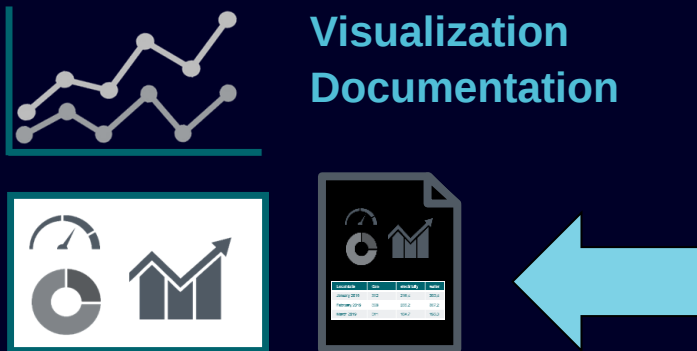
- Enterprise wide energy management solution
- Complying legal regulations ISO 50001

Benefits

- Providing a holistic view about the energy and resource consumption
- Comprehensive analysis functions to investigate and improve of energy efficiency
- Transparency of energy costs and CO₂ emission from different plants worldwide

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SIMATIC Energy Manager Supported Functionality

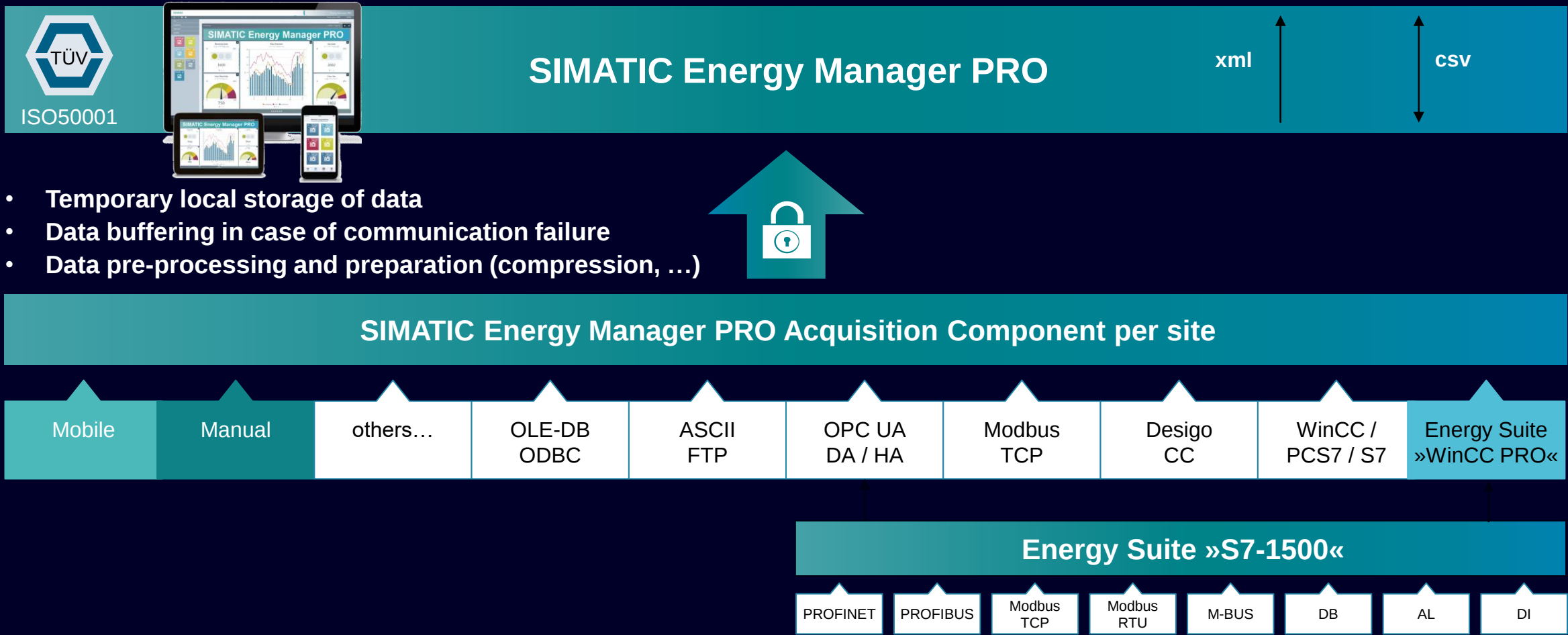


Datapoint Configuration

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Corporate Wide Energy Management

Plenty of interfaces



Corporate Wide Energy Management

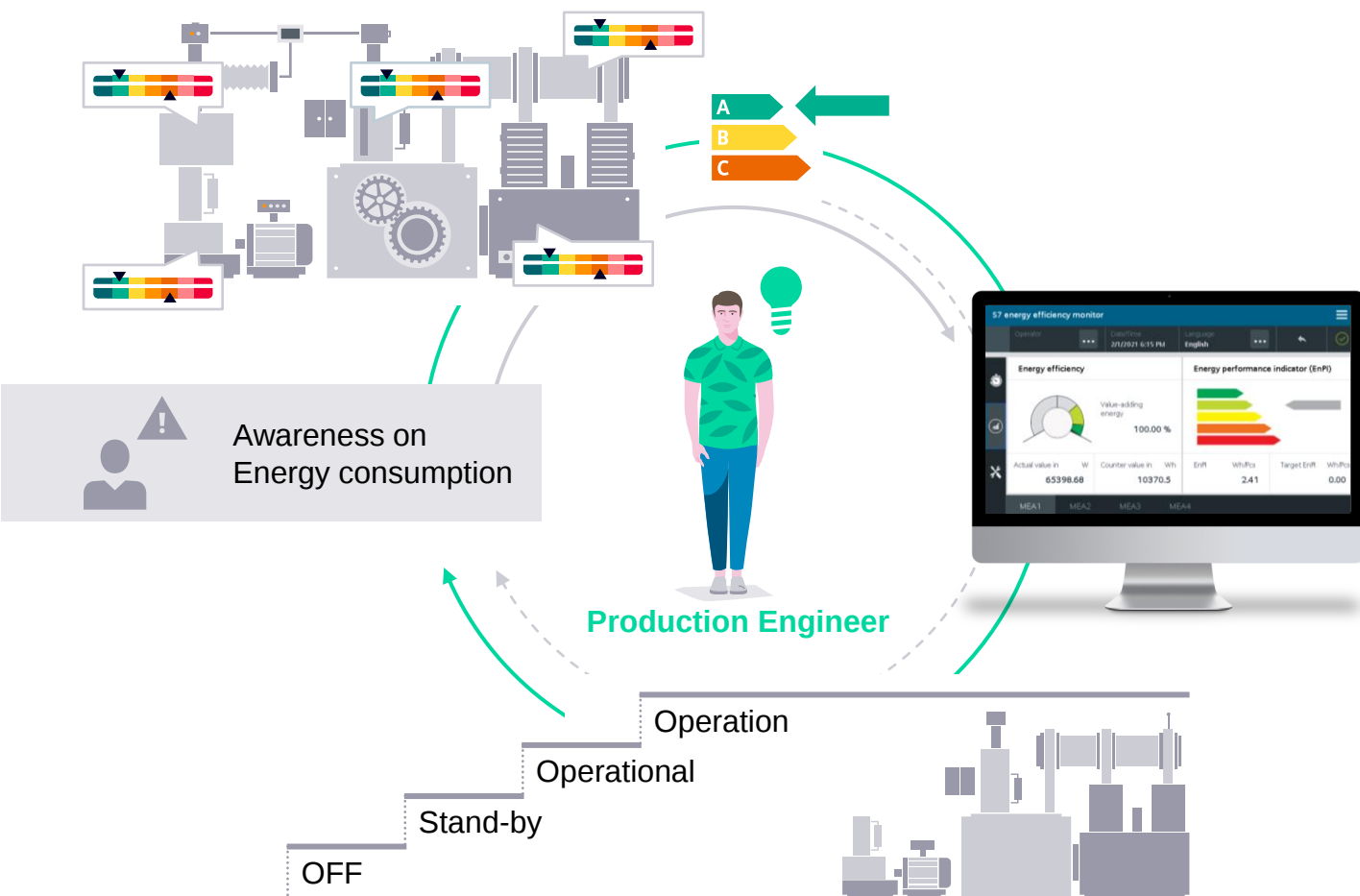
Plenty of interfaces



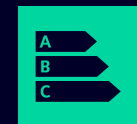
| Ny produktionsmaskine

Production-related energy monitoring

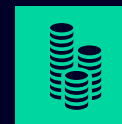
Efficiency evaluation of machines



SIMATIC Energy efficiency monitor - www.siemens.com/energysuite



Energy
Efficiency



Cutting
energy costs

Situation

- How can the efficiency of an industrial machine be determined?
- How can the energy efficiency of machines be compared?

Requirements

- Vendor-independent machine analysis in accordance with specification VDMA 34179
- Easy energy acceptance process due to standardized evaluation and uniform acceptance form

Benefits

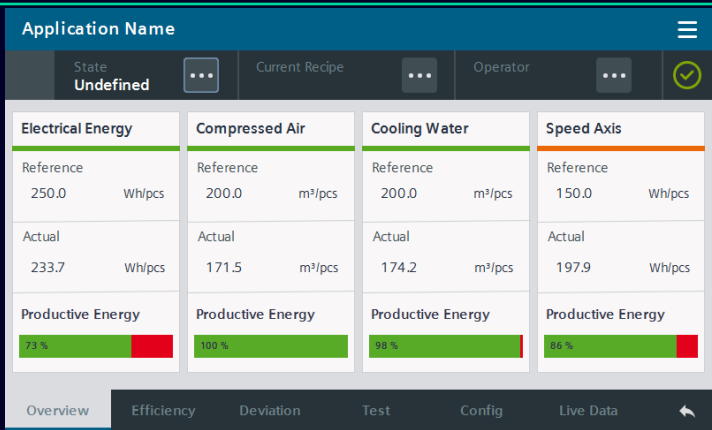
- **Identification of savings potentials** through status-related analysis
- **Increase employees awareness** of energy consumption

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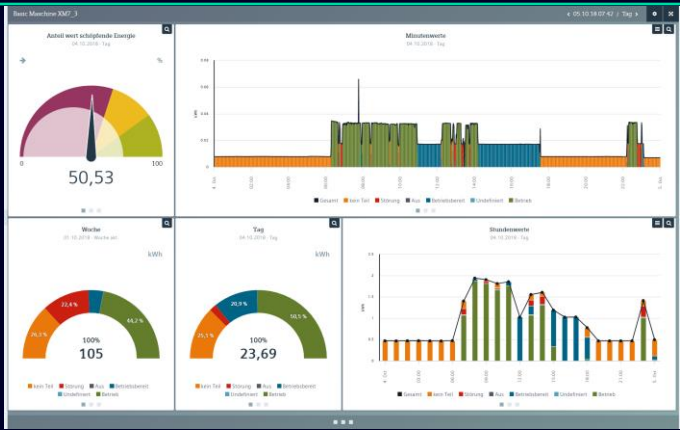
Machine Analysis

2-stage concept

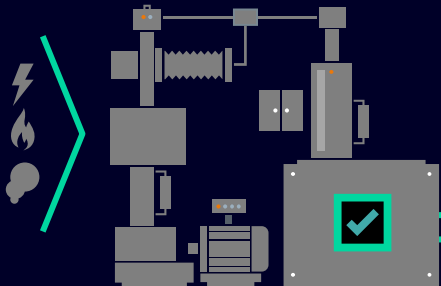
1. Local (HMI panel)



2. Central (Energy Manager PRO)



Production Machine



Local Analysis



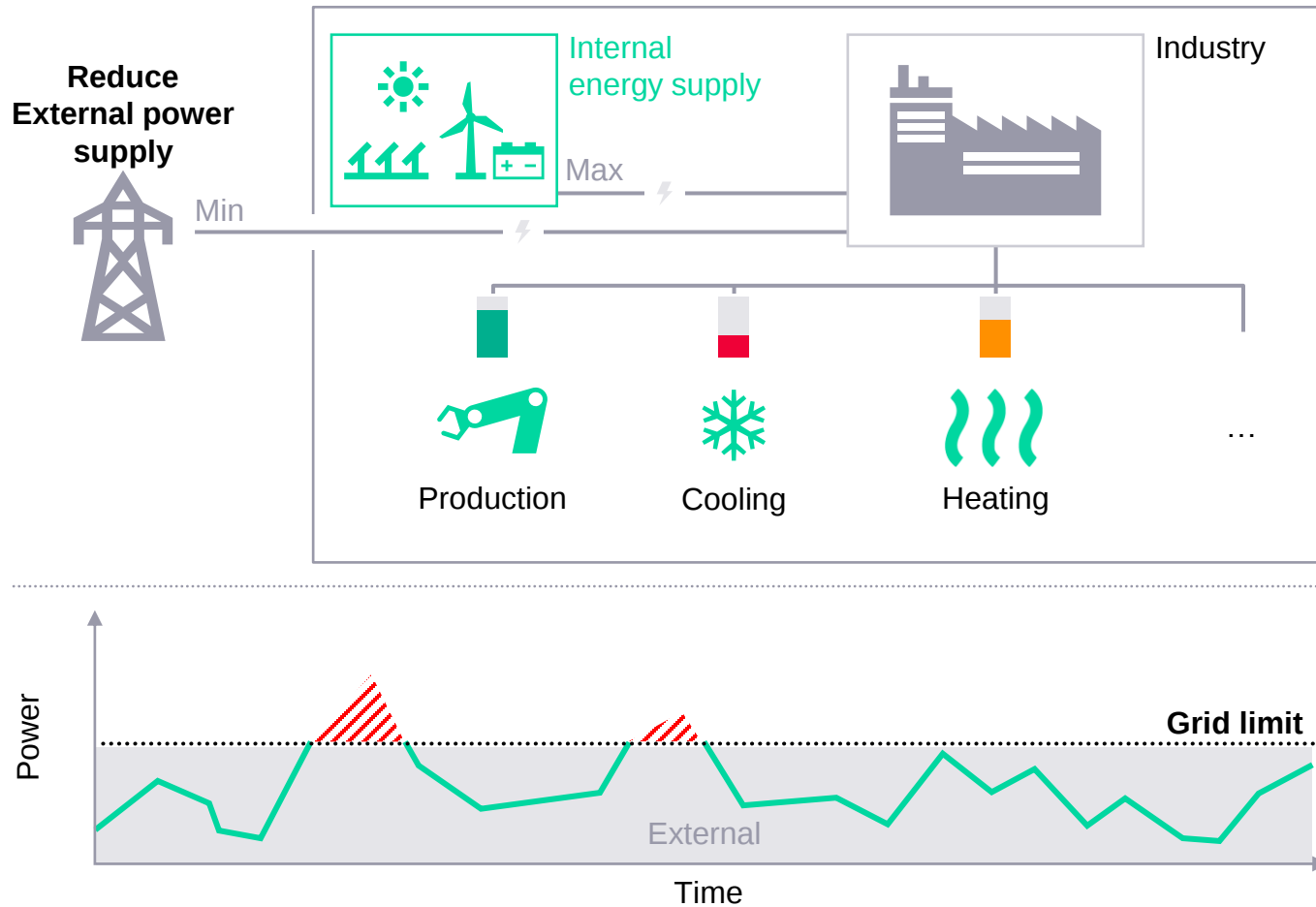
Plant View



OEM

End customers / End users

Why is it important to increase the grid stability for production reliability?



Legal
regulations



Grid
Stability

Situation

- Steadily increasing number of energy consumers.
- Decentralization of energy generation (renewables) leads to unstable grids which could cause production outage

Requirements

- Use company internal energy sources (cogeneration power plants, wind, photo-voltaic, batteries)
- Avoid high load peaks

Benefits

- Cost savings through avoiding load peaks
- Reliable and scalable PLC-based system
- Holistic concept for energy generation, buffering and consumption

The simple solution – SIMATIC Energy Suite



Measuring

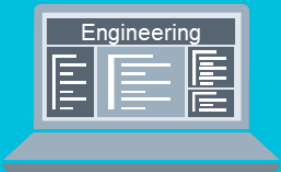
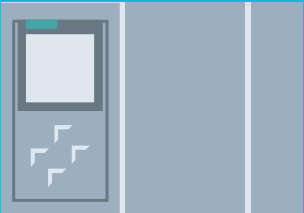
- SENTRON
- SINAMICS
- SIMATIC
- SIMOCODE
- SENTRON
- 3rd Party

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Energy Suite

Easy
Integration

Consistent
Information

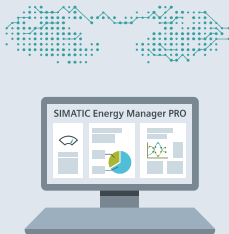


Generation
instead of programming

Visualization with SIMATIC HMI



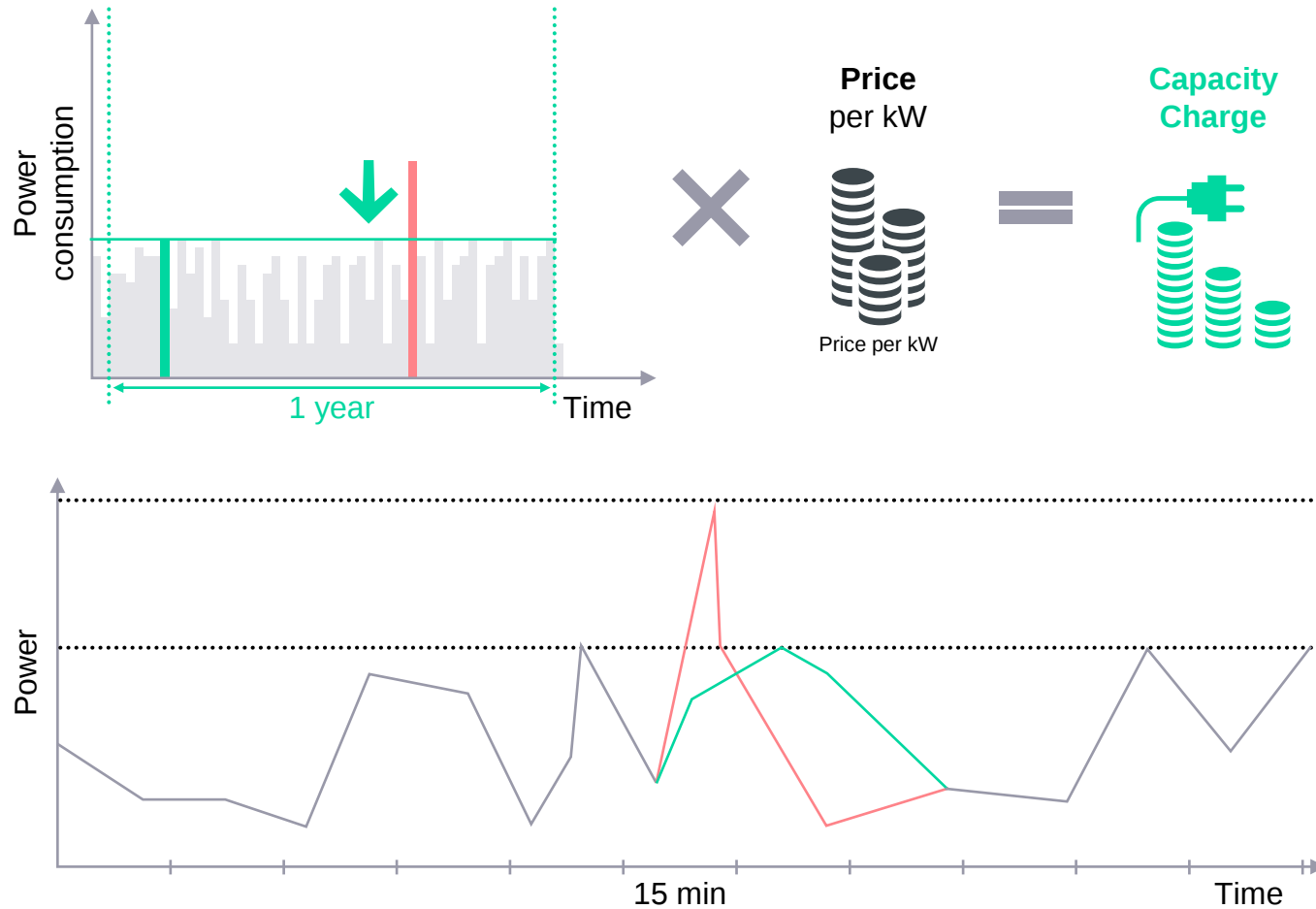
Analysis with SIMATIC Energy Manager



Archiving with WinCC SCADA



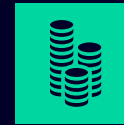
Cutting energy costs by avoiding load peaks



SIMATIC Energy Suite - www.siemens.com/energysuite



Legal
regulations



Cutting
energy costs

Situation

- Electricity costs increased significantly over the last years and will increase even more in the future Load peaks can cause fines up to 100k €

Requirements

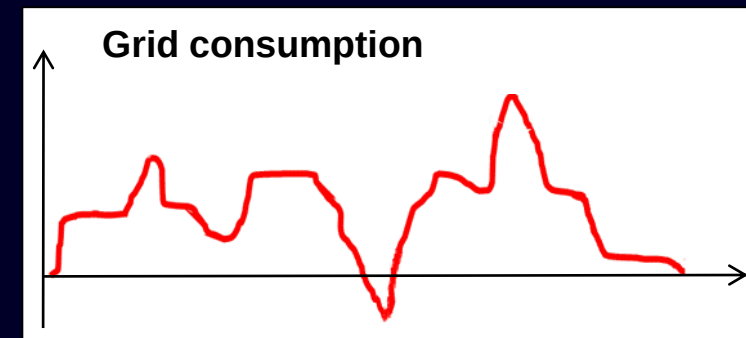
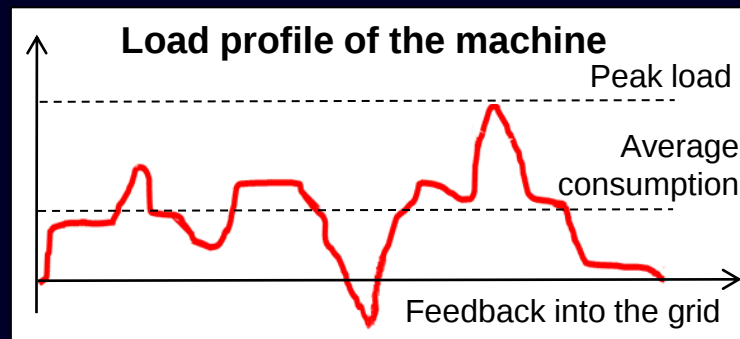
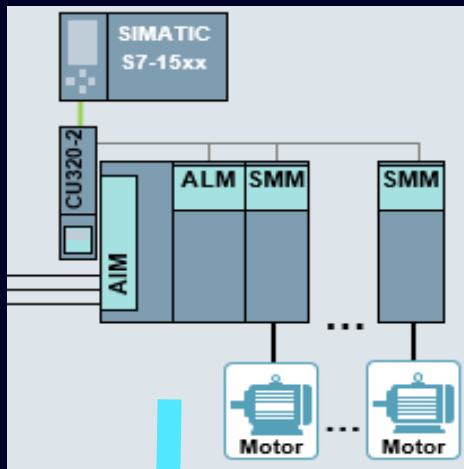
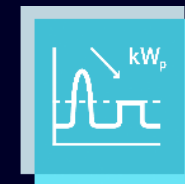
- Avoid load peaks
- High availability of production
- Inclusion of several energy feeds

Benefits

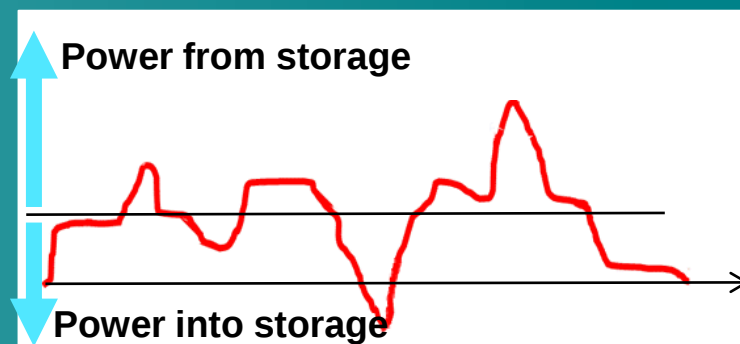
- Combine generators with production to reduce energy consumption
- Reduce energy costs by avoiding load peaks
- Short amortization time
- Higher availability than PC based systems

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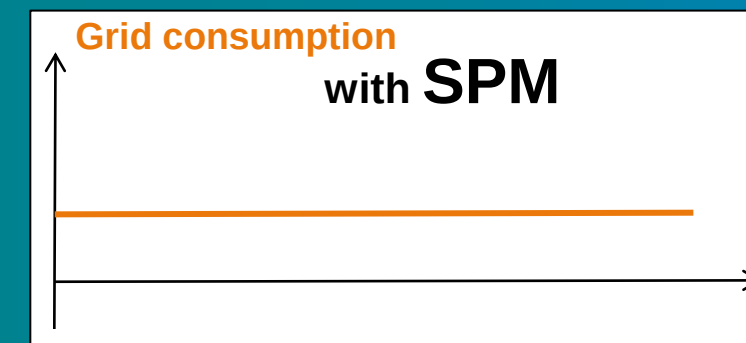
Peak Power Reduction No grid overload



The power peaks can lead to grid faults and bottlenecks



The load variations and peaks are handled by the storage unit



- + No peaks, no grid load
- + Lower infrastructure costs
- + The machine performance is ensured

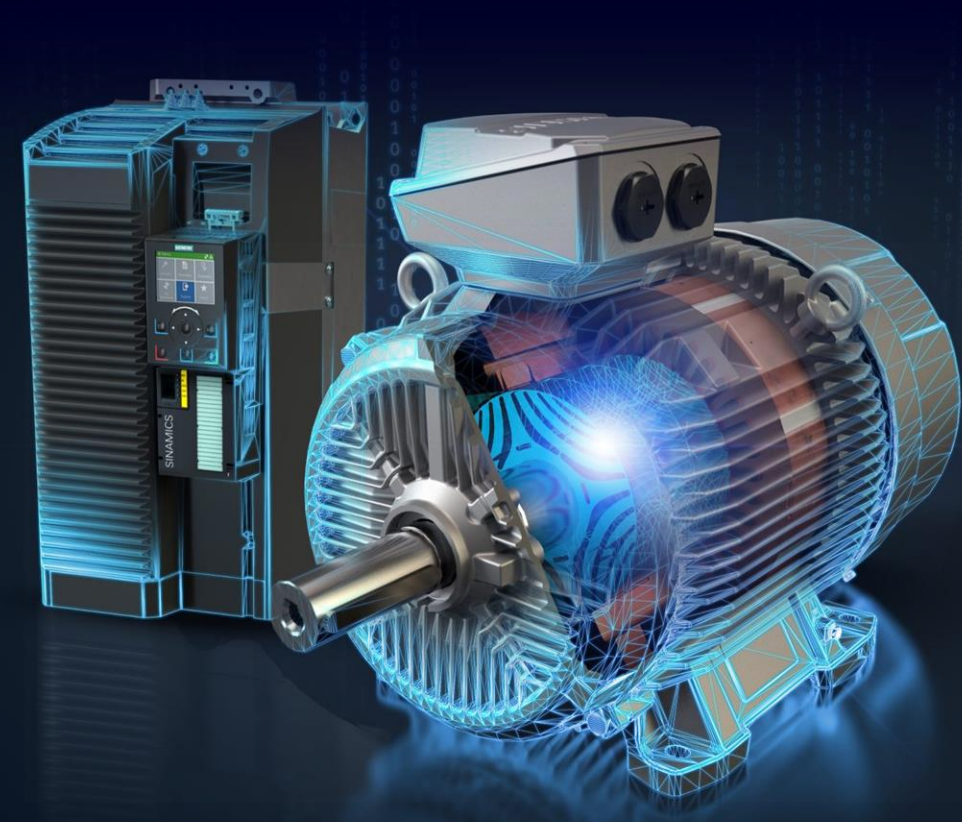
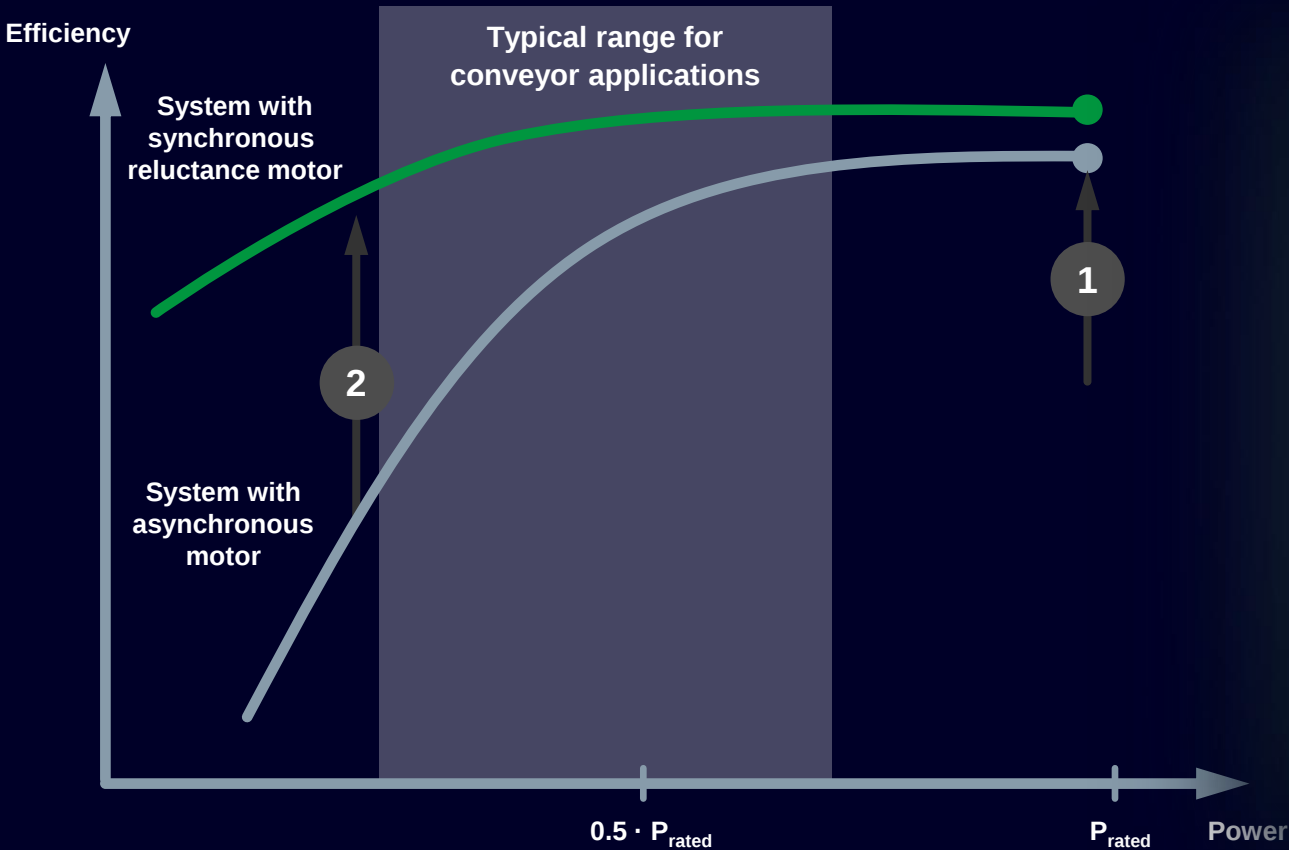
| Reducér med 2 % årligt?



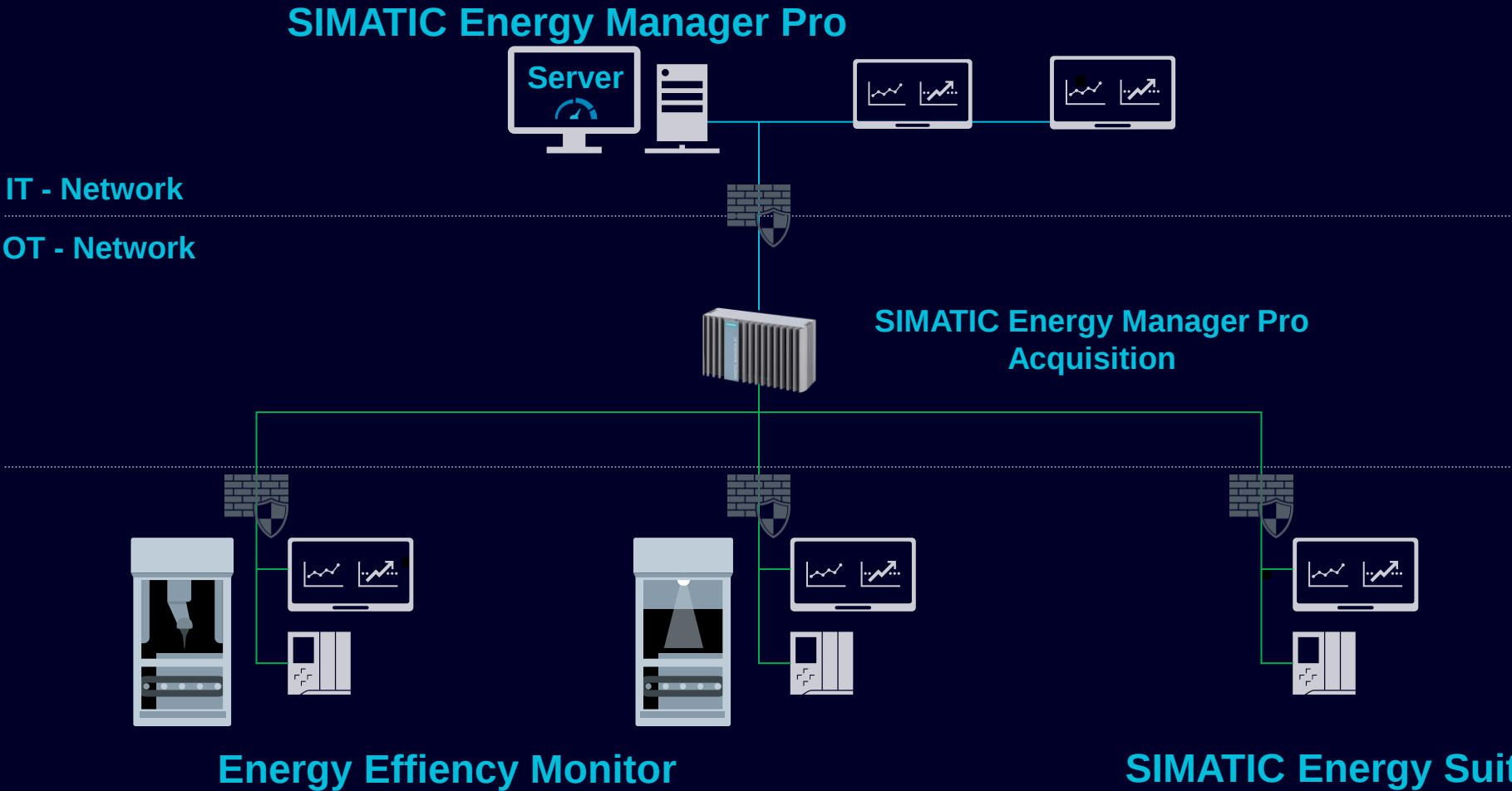
I de 7 største brancher udgør det totale elforbrug til motorer 70 % af industriens totale elforbrug.

Dansk Energi "Tabelopslag om elforbrug og besparelser i maskinsystemer"

SIMOTICS reluctance motor



Hvor hører softwaren hjemme?



Summary

Beregn dit CO₂-aftryk

- Energy Manager Pro – Valid rapportering

Nye energioptimerede maskiner

- S7 Energy Efficiency Monitor

Fordel din last / begræns højlast

- Energy Suite - Load management
- Smart Power Management til S120-drev

Reducér energiforbrug med min. 2 % pr. år

- Energy Manager Pro - Data transparens
- SIMOTICS reluctance motor IE4