



# Transparent operation Energy efficiency

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[siemens.com/tia](http://siemens.com/tia)

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Future-oriented spice mill with efficiency and transparency

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**Reducing product costs without detracting from quality!**

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# Production costs

Production costs are accrued in all areas ...

Depreciation	Tools	Personnel	Energy	Material	Storage	Room	Maintenance

**... where can we make practical savings?**

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## Reducing product costs without detracting from quality!

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Reduced spending on tools impairs efficiency and work quality

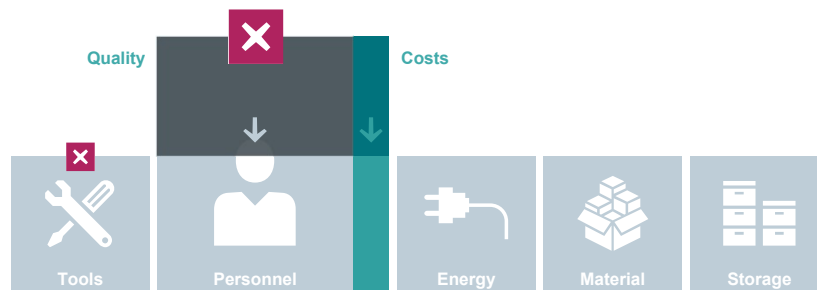
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## Reducing product costs without detracting from quality!

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Lowering personnel costs has a detrimental effect on motivation of the workforce

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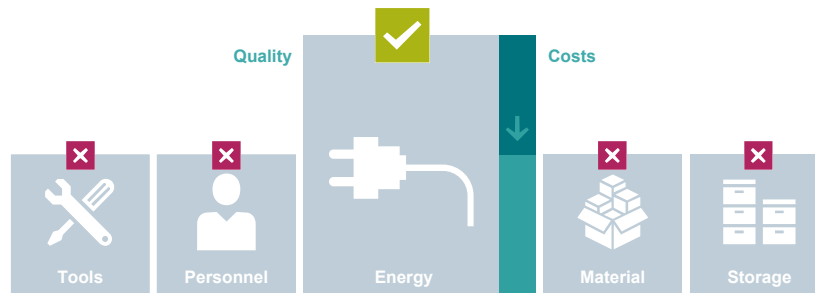
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## Reducing product costs without detracting from quality!

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## Energy efficiency offers added potential

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### Energy costs

Energy costs 2000-2015<sup>1</sup>,  
Germany, industry

~6%



Average annual increase  
in electricity price (€ '00 – '15)

### Laws and climate protection

UN climate summit 2015, Paris

2 °C



Limiting the temperature rise  
worldwide

### Change of energy supply

Share of renewable energies: 2016<sup>2</sup>  
in power consumption in Germany

32%



From 6.5% in the year 2000.  
Should rise to 80% by 2050

### Responsibility for environment and climate

Opinion Research 2015

59%



A green image is decisive for the  
purchasing decisions of markets and  
customers<sup>3</sup>

Significant cost factor  
in production

Statutory measures to achieve  
environmental targets

New boundary conditions as a  
consequence of changing  
energy resources and continued  
requirements for supply  
reliability

Energy-efficient  
production as a key marketing  
argument

<sup>1</sup> Prices including taxes, source: statista.com ([Link](#)) | <sup>2</sup> Source: E.ON-survey 2015 ([Link](#)) | <sup>3</sup> Source: Federal Environmental Agency ([Link](#)) | <sup>4</sup> Source: AGORA energy transition ([Link](#))

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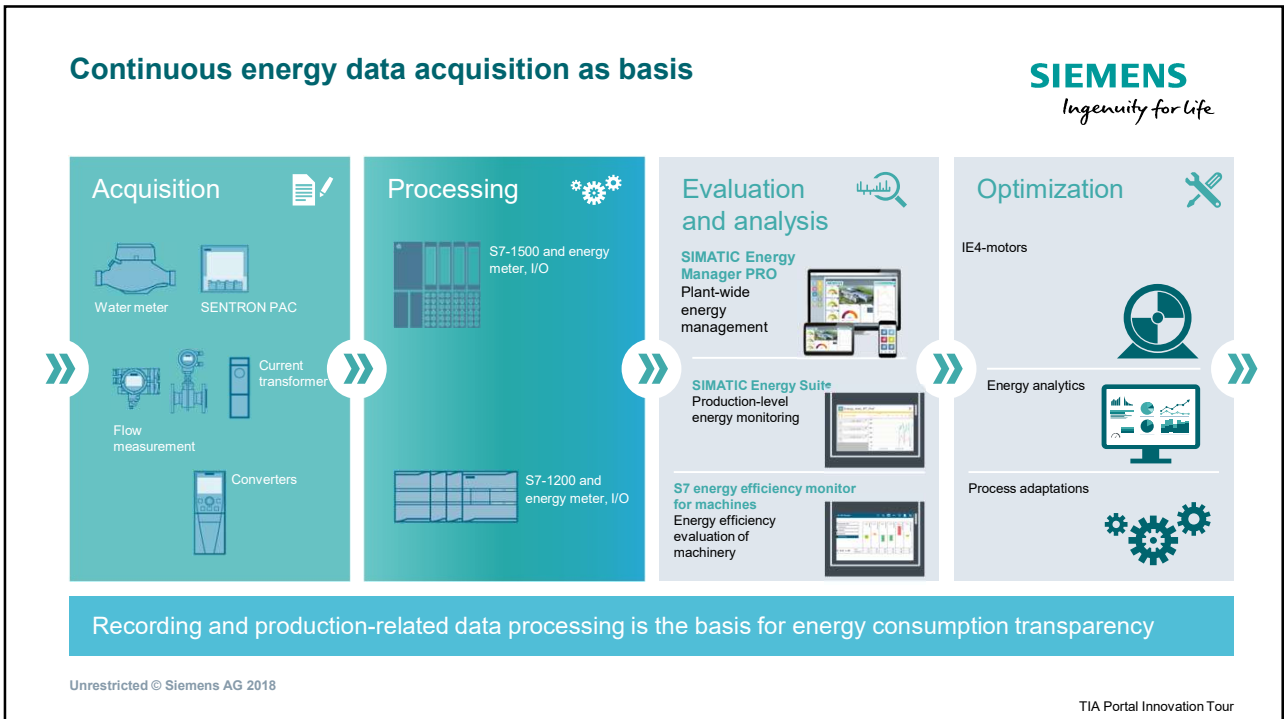
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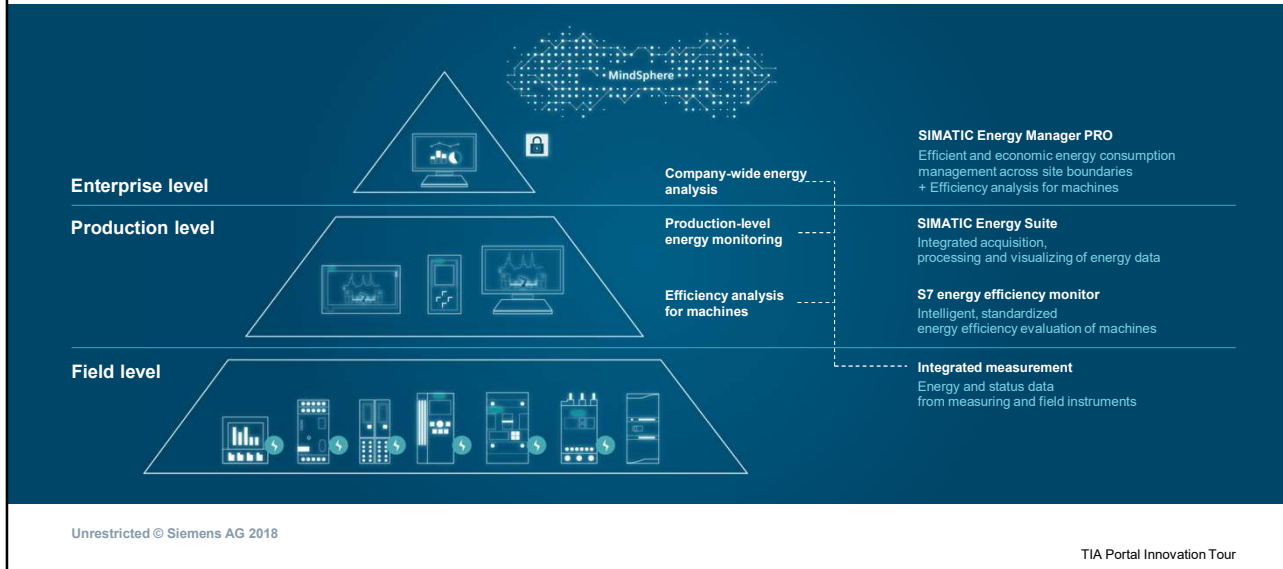
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# SIMATIC Energy Management – Transparency and efficiency from the machine to the company as a whole



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## Energy monitoring with TIA Portal



**Configuration advantages**

**Integrated in the TIA Portal and in automation**  
Permits conclusions to be drawn regarding production data and energy data

<p><b>Connection of existing hardware</b> Simple integration of measuring components<sup>1</sup> from the product families: SIMATIC, SENTRON, SIMOCODE, and SINAMICS</p>	<p><b>Openness</b> Integration of energy values from 3<sup>rd</sup> party devices (e.g. PLCs, field devices, ...)</p>	<p><b>Make energy visible</b></p> <ul style="list-style-type: none"> <li>• On HMI and SCADA</li> <li>• Energy data can be interlinked with production data</li> </ul>
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**Integration of energy management in automation**

<sup>1</sup> Products from the product families SIMATIC, SENTRON, SIMOCODE, SINAMICS, and SIRIUS. You can find details about currently supported devices here: <https://siemens.com/energysuite-hardware>

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## SIMATIC Energy Suite in the TIA Portal

### Automatic generation of the energy blocks

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#### Configuration advantages

**Intuitively configured and automatically generated**  
Avoidance of errors and considerable reduction of the configuration time

#### Intuitive usability

Through easy and user-friendly configuration

#### Efficient implementation and error avoidance

Through automatic generation of the energy program, (counter diff., compression, counter overflow detection)

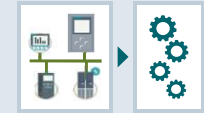
#### Concentration on the core task

Energy management generation with minimum effort



#### Energy management in 3 steps!

Parameter assignment



Archive PLC code

Rapid implementation, easy familiarization and avoidance of errors

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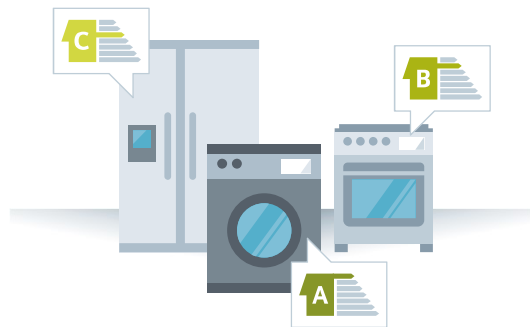
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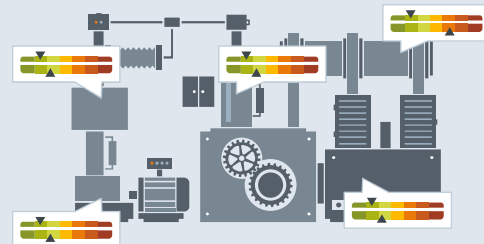
## Norms and standards alleviate our everyday way of life

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The simple efficiency evaluation of household appliances is already standard



Now, the reliable efficiency evaluation for industrial machinery is also possible



This does, however, require expertise and the right tools

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## Requirements for a comparative and valid energy efficiency evaluation

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### Continuous analysis

Monitoring of energy efficiency of machines and also in particular an efficient mode of operation of this machine



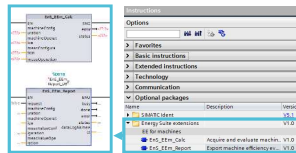
### Status-related energy analysis

From shutdown condition to ongoing operation



### Energetic profile

And acceptance form based on the VDMA standard 34179 and energy efficiency report for detailed analysis



### Energy efficiency evaluation

#### Analysis

Independent of the machine type ...through S7 instruction for production-related and standardized determination of energy consumption in machines

**Energetic evaluation** Already during the procurement phase (low life cycle costs)

#### Determined average performance values

Can be repeatedly checked during production (automatic long-term measurement as integral part in the TIA Portal)



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## Energy management in the TIA Portal Energy Suite

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### Live demonstration

SIMATIC Energy Suite - Getting Started

<https://support.industry.siemens.com/cs/ww/en/view/109739102>

SIMATIC Energy Suite - Visualization Examples

<https://support.industry.siemens.com/cs/ww/en/view/109739775>



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## SIMATIC Energy Manager V7.1 – Easy introduction with the Energy Manager Basic

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### Energy Manager Basic V7.1

- Basic functionality with Web Engineering (dashboard, report, chart, ...)
- Reporting for WinCC and Energy Suite
- Predefined report templates
- Upgrade to full functional scope of Energy Manager PRO with license key

### Benefits

- Quick and straightforward introduction to energy management
- Intuitive web engineering
- Fast and simple generation of reports
- Scalable, future-oriented solution



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## SIMATIC Energy Manager V7.1 – Overview – News in V7.1

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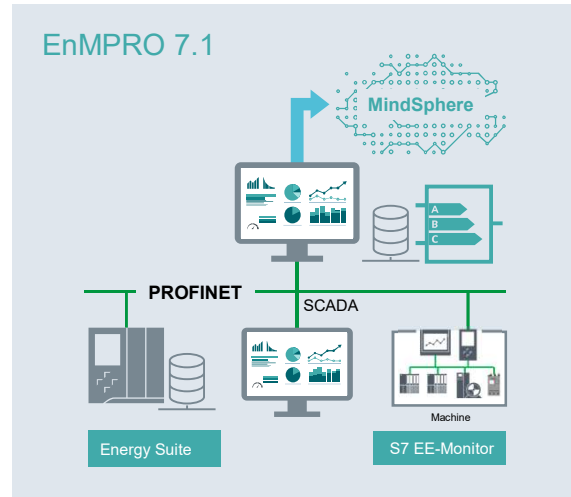
### Energy Manager PRO V7.1

#### Additional functions

- Full client configuration
- Batch and material analysis
- Forecasting possibilities
- S7 EE Monitor interface including template and instance concept
- Energy efficiency measures
- MindSphere connectivity

#### Benefits

- Individually adaptable energy management system
- Baseline management
- Cross-disciplinary machine analysis/ calculation of key performance indicators
- Benchmark of machines



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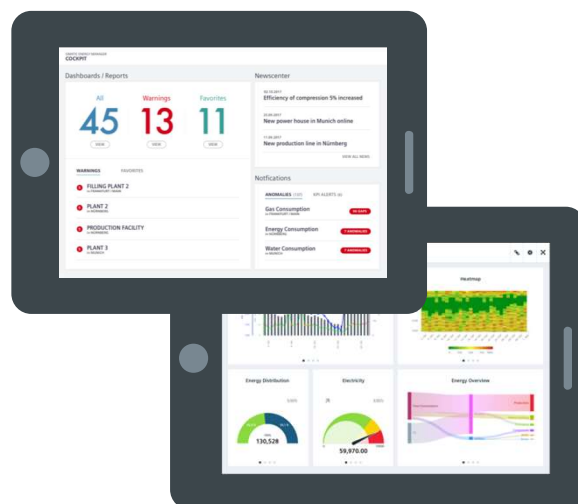
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## SIMATIC MindApp Energy Manager

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### Energy management in the MindSphere

- Energy transparency according ISO 50001
- Derive optimization measures based on KPIs
- Transparency regarding energy costs and consumption
- Easy to use Widget-based Dashboard with integrated basic analytics
- Simple KPI definition
- Bringing energy data in relation to further context like production, weather ...

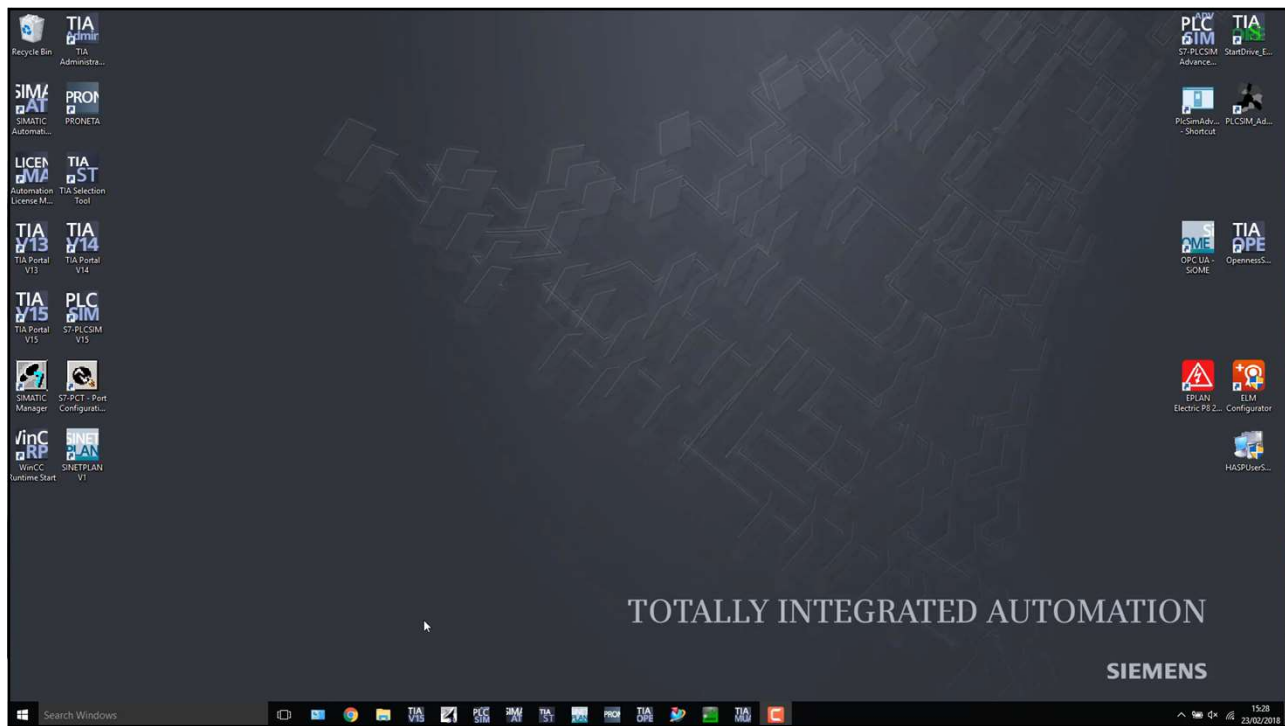


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## Energy management Energy Manager PRO

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**Website**  
<http://62.245.153.66:8008/EnMPROWeb>

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**Guest Login**  
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**Password**  
InnoTourV15

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## Transparent operation Energy management

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- 1 | **Energy management directly at the machine**  
...production-related energy transparency,  
allowing constant monitoring of the machine status

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- 2 | **Meet statutory requirements**  
...with an energy management solution certified by the German  
Technical Inspectorate  
pursuant to ISO 50001

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- 3 | **Increase productivity and quality with energy efficiency**  
...by integration in the automation system,  
EnPIs can be generated easily

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- 4 | **Easy implementation of advanced requirements**  
...with an integrated, scalable energy management system – from the  
field level up to management level



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