

Energy: flowing Production: running

Maximum power quality with power monitoring by Siemens.

More than
€150 billion

in annual losses due to downtimes in production and IT can be attributed to poor voltage quality in Europe.*

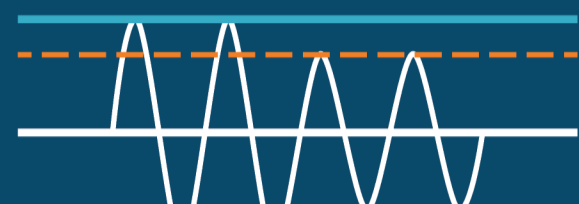


The energy mix is changing

The percentage of renewables is growing steadily, and so is the number of inverters. This results in an increase of high-frequency levels in the power grid – with consequences for power quality.



The most frequent reasons for failures



Deviation from the supply voltage



System shutdown due to an under-voltage trip



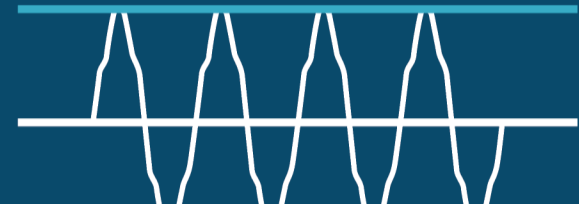
Decreased efficiency of electrical equipment



Overheating and thermal loads



Shortened service life of electrical equipment



Harmonics



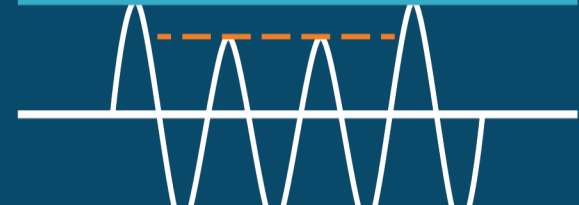
Sensitive electronics fail



Circuit breakers and fuses malfunction



Engines, transformers, and lines overheat



Voltage sag and swell



Storage loss, data error



Engine service life shortened



Lighting fluctuates (flicker)



Transients



Hardware damage



Power supply unit damaged



Data loss

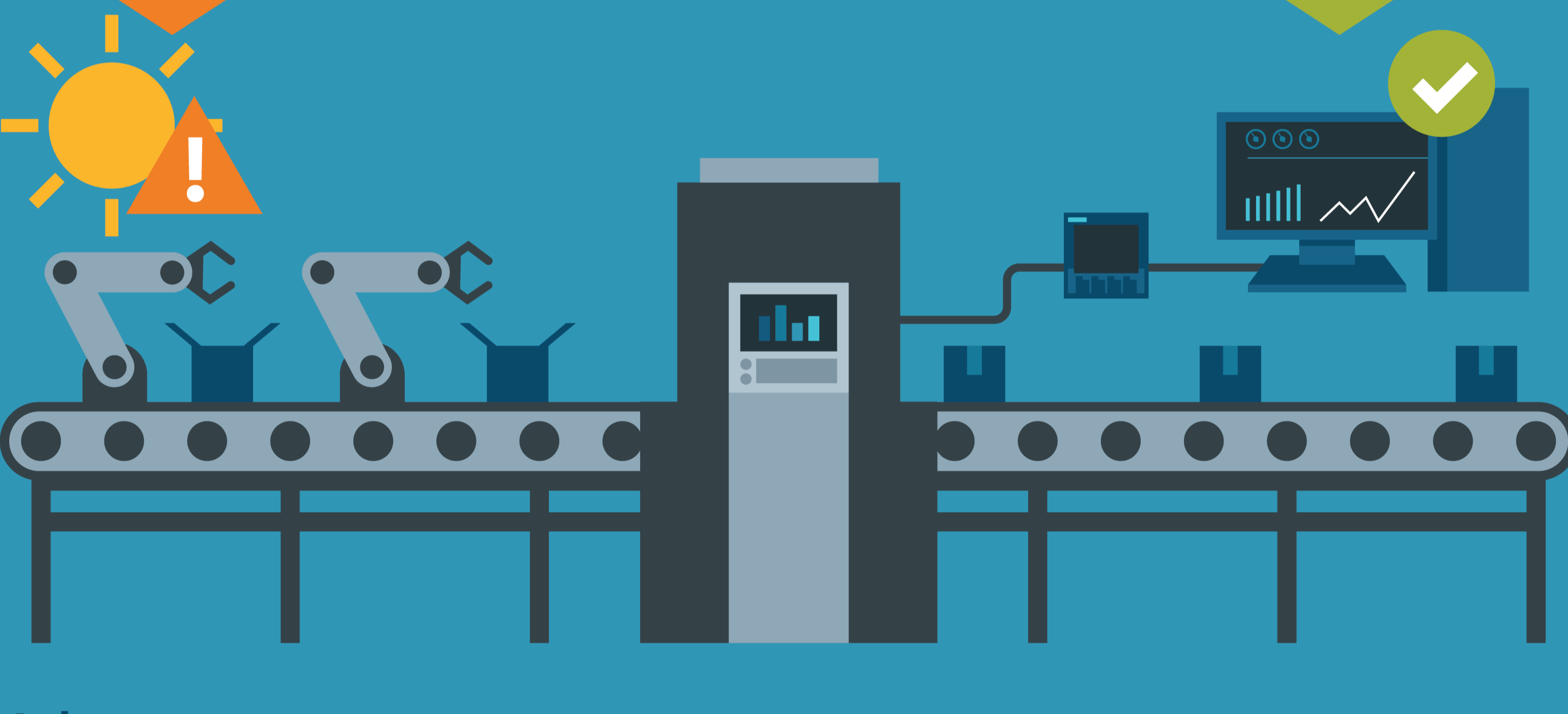
Power monitoring in real life

Measurements relevant to power quality (PQ) are continually evaluated and recorded to help detect and correct failures early on.

Scenario 1: Weather-dependent fluctuations in grid quality

The feed-in quantity of renewables is weather-dependent. That affects the grid quality and can result in production irregularities.

PQ measurement devices provide a quick and reliable overview of whether all components, such as PV rectifiers, are functioning properly. In this way, fault causes can be quickly identified and corrected.



Advantages



Fast and clear identification of the cause (grid disturbance or plant malfunction)

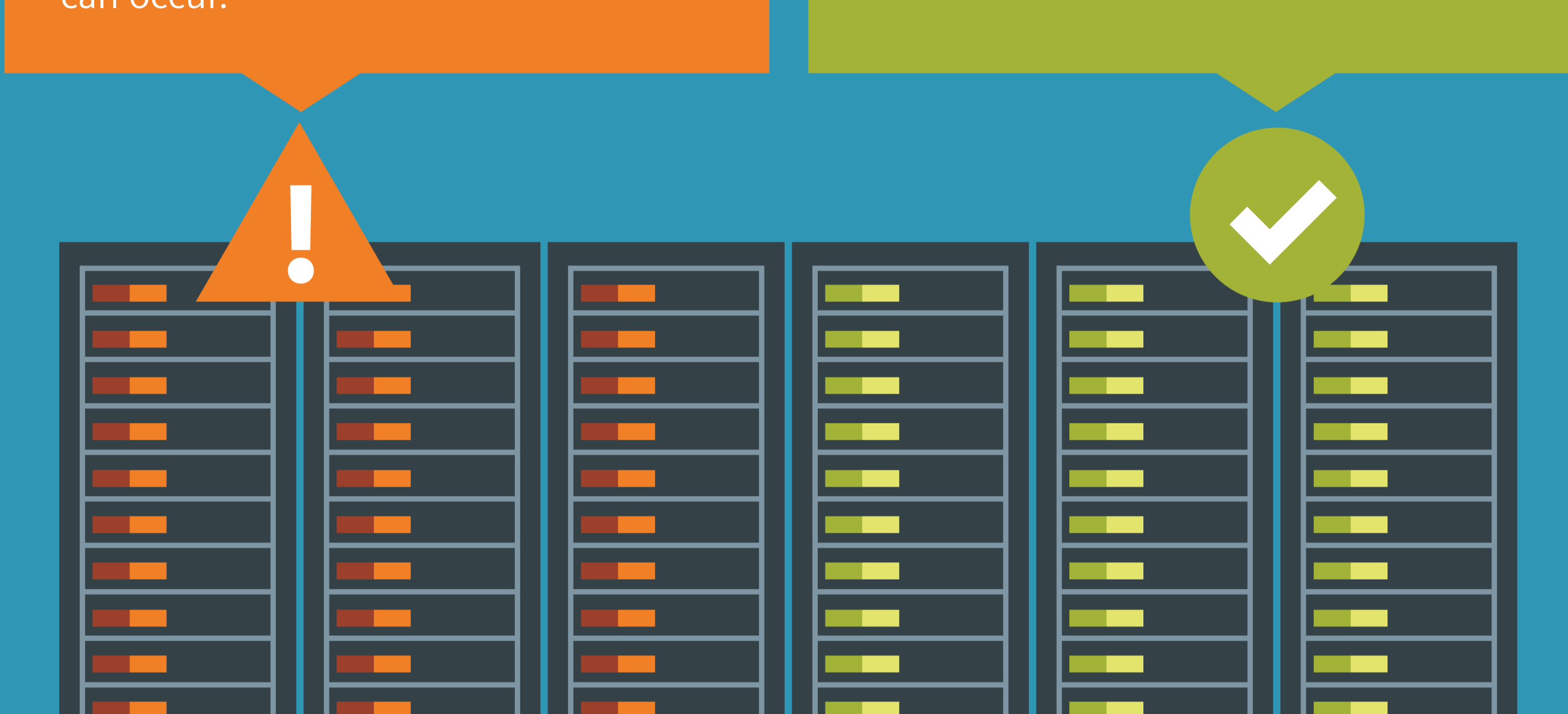


Remote diagnostics possible through web servers

Scenario 2: Hidden faults when upgrading systems

When upgrading systems, hidden faults can quickly occur. For example, if the frequency converters of a ventilation system in a data center are assembled with incorrect filters, server malfunctions can occur.

PQ-relevant measurements are constantly monitored and evaluated. In this way, fault sources in the grid can be detected and corrected early on.



Advantages



Quick identification of existing PQ problems



Timely countermeasures possible



Preventing follow-on malfunctions



Remote diagnoses possible through web servers

*Source: J. Manson, R. Targosz, "European Power Quality Survey Report", Leonardo Energy, 2008

Power monitoring makes the equation work



Siemens monitoring devices provide a solid technical basis for assessing your power quality. For more information, please visit:

siemens.com/powermonitoring