

P/Q Monitoring

Mitteldeutsche Netzgesellschaft Strom mbH
· Hackel · 14 September 2020



1

Introduction

2

P/Q Monitoring

1

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P/Q Monitoring

1. Introduction

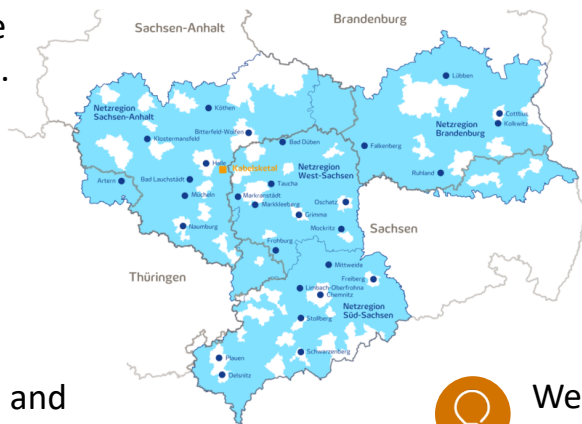
Company Profile MITNETZ STROM



The largest distribution network operator in eastern Germany, we manage a power network that extends almost twice around the world with a length of **74000 km**.



Our **1500** employees are responsible for planning, operating and marketing the electricity network in our region.



We consistently implement legal and regulatory requirements and guarantee non-discriminatory power grid operation for all market partners. **Fair and independently.**



We secure the electricity supply for **2.3 million people** in Brandenburg, Saxony, Saxony-Anhalt and Thuringia. **Reliable and competent.**



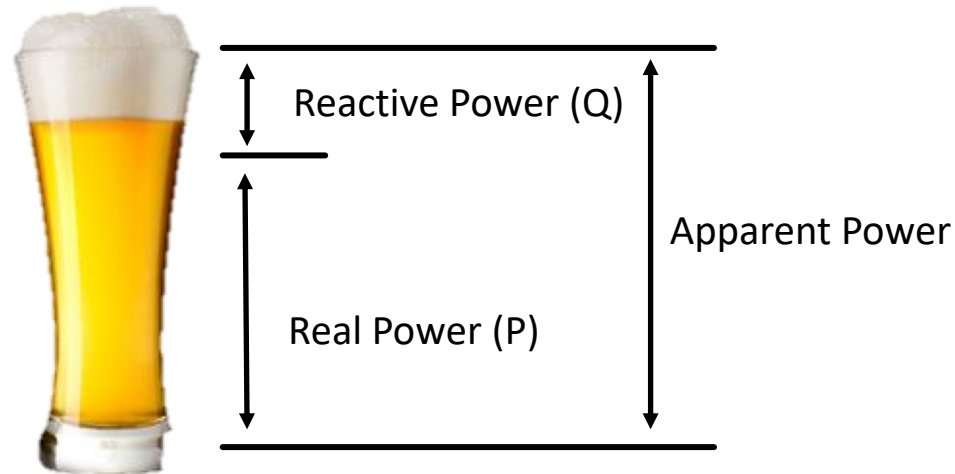
1

Company Profile

2

P/Q Monitoring

What is P/Q?



Problem

1/2



Substation on the node
medium to high voltage.
(110kV)

The plants not owned by
MITNETZ STROM.

Is focused on renewables (wind,
solar, biogas).

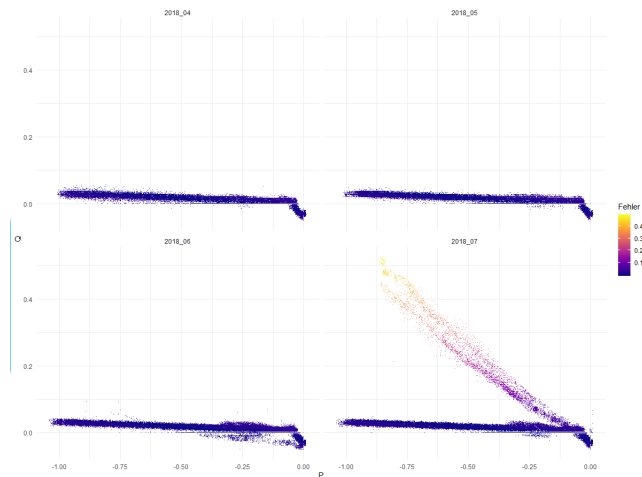
Maintenance by the asset owner.

Problem

A single "defective" system can be uncritical, **many not!**

Manual evaluation of all available data is **not possible!**

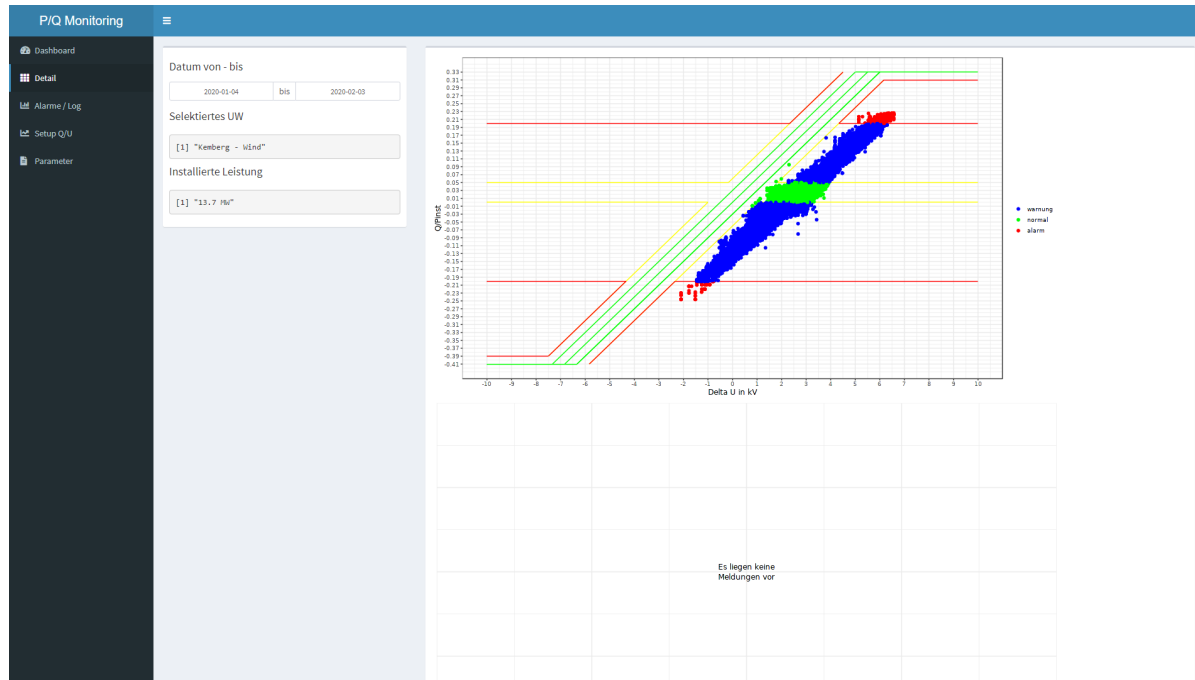
2/2



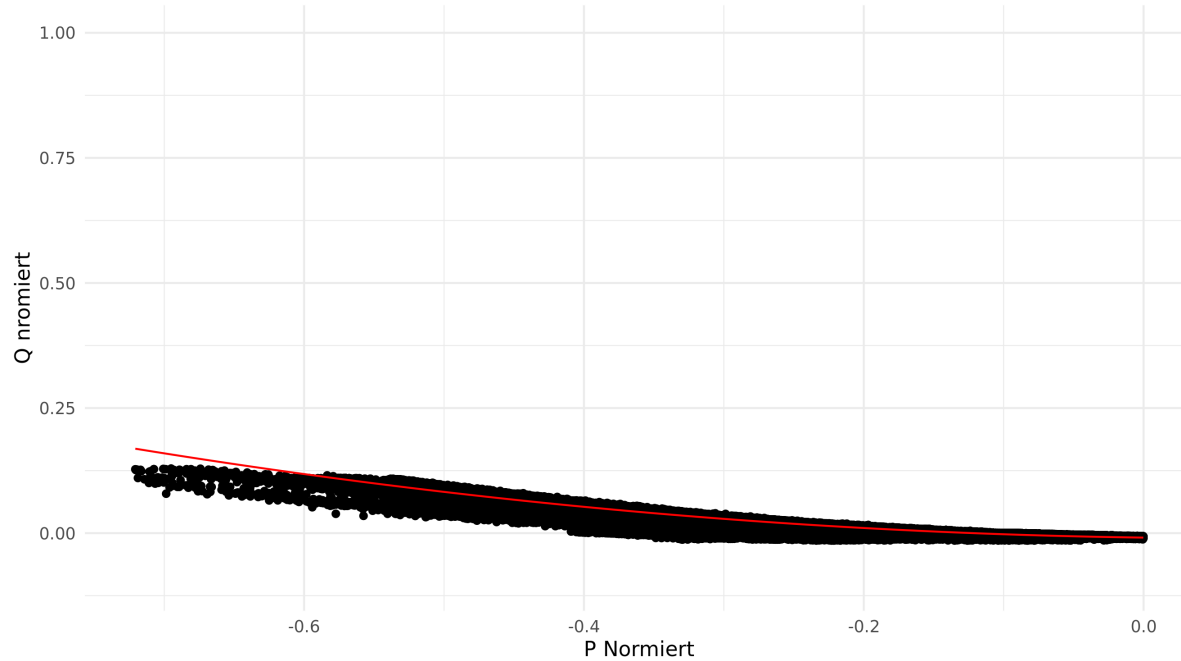
An **early detection** of deviations **enables a correction** before it becomes critical

2. P/Q Monitoring

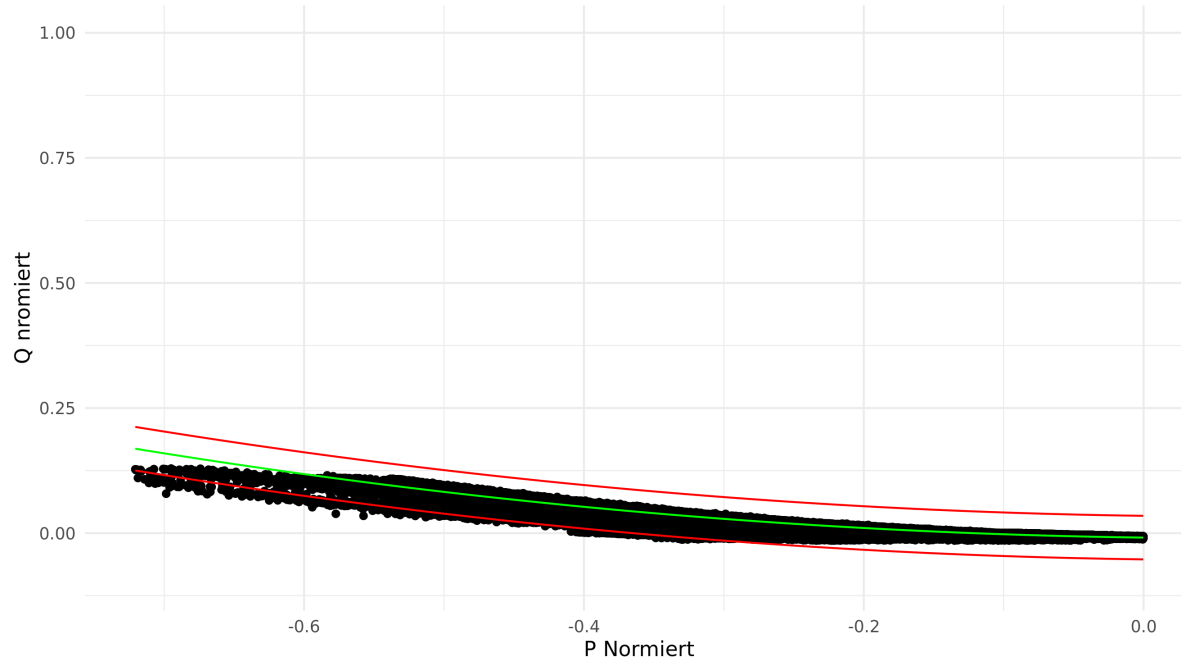
Q/U



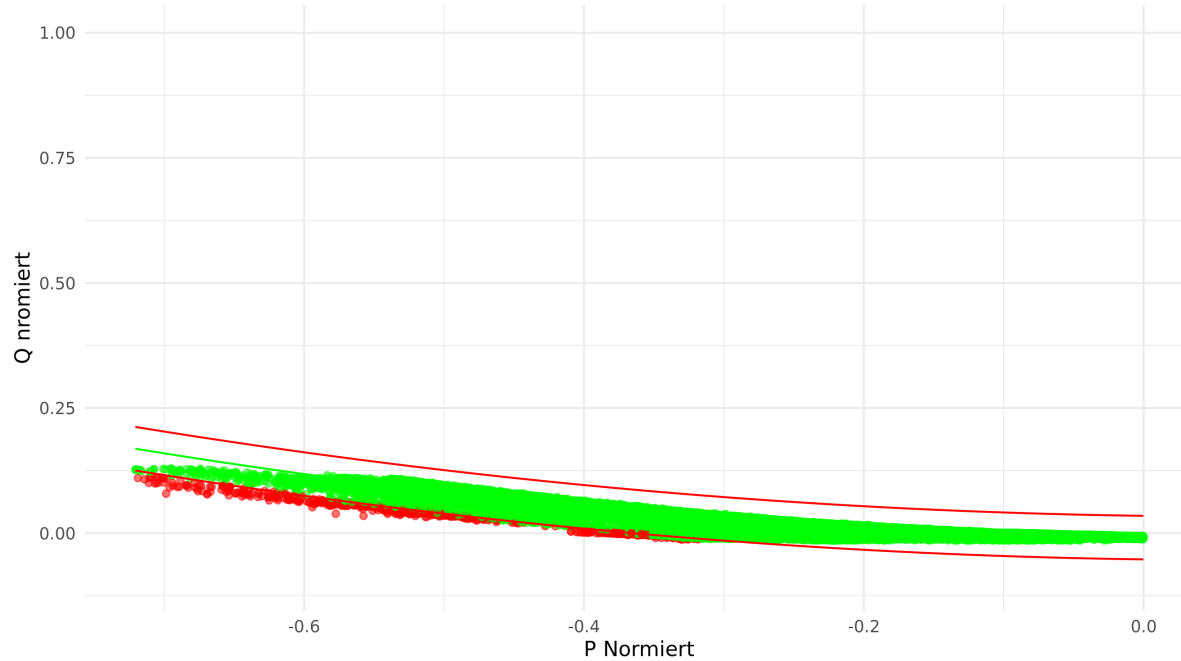
Cos Phi



Cos Phi



Cos Phi



What we are doing.



8 Mio. Data Points per Hour

104 Substation

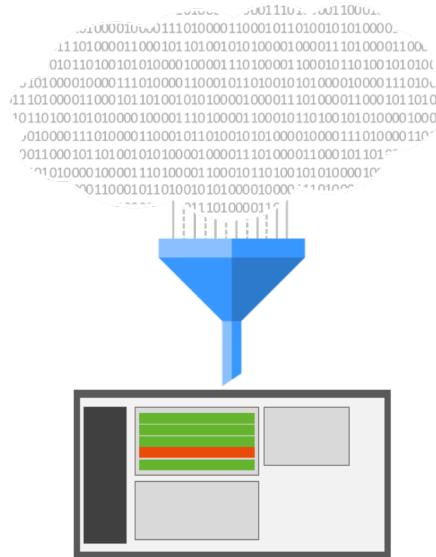
30 Sec. = 7 new values per plant

Every 5 min. new run

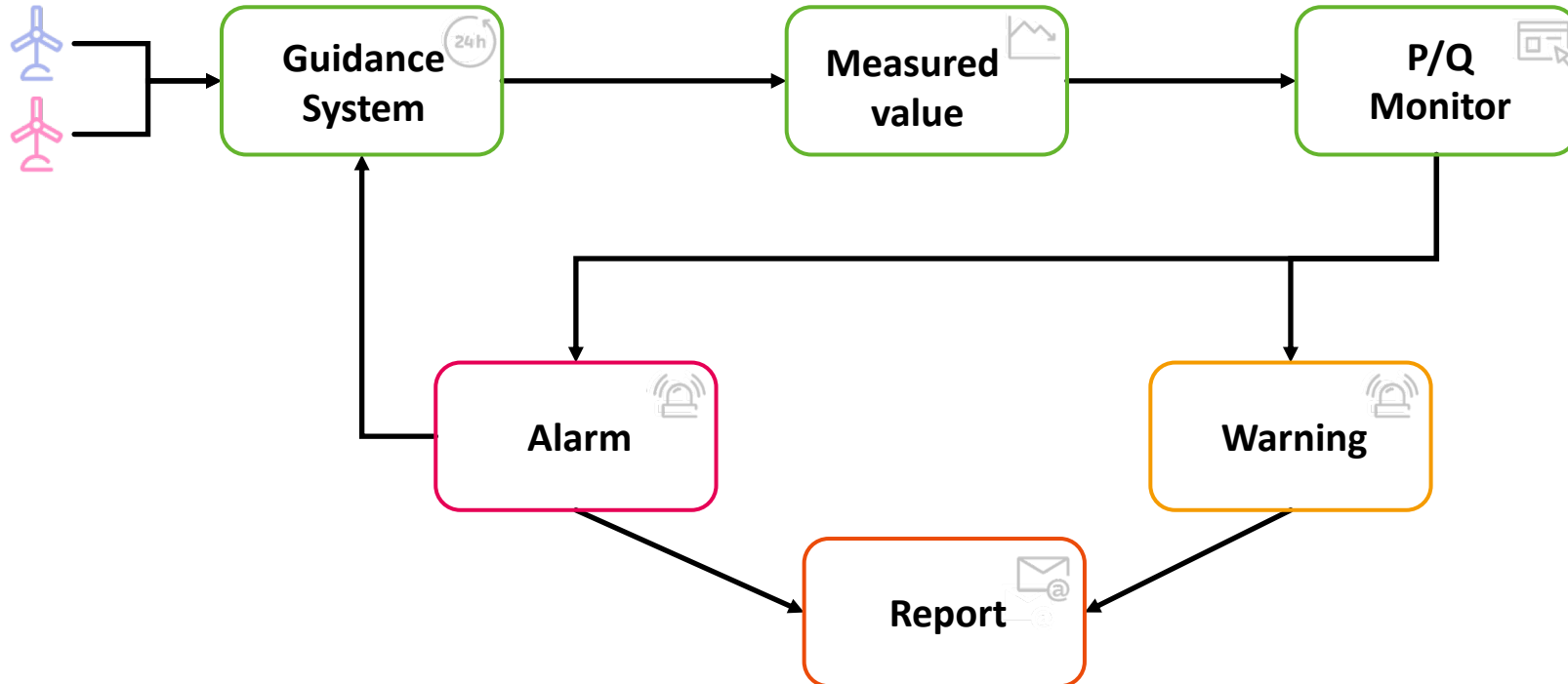
Data since 01.01.2017

2 Plant Types

1 month rolling



Overview



Why are we doing this?



Efficiency

Exhaustion of
resource limits

Avoidance of
power failures

Technical risk
controlling

Better
network
operation

Product

P/Q
Monitoring as
a product for
other DSO

For
concessions

Strategy

Resources for
analysis, less for
procurement!

Use of your own
data

Digital twin

Thank you!

