

M E P I S ENERGY

Ein Energiemanagement, das
Ergebnisse liefert!

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Agenda

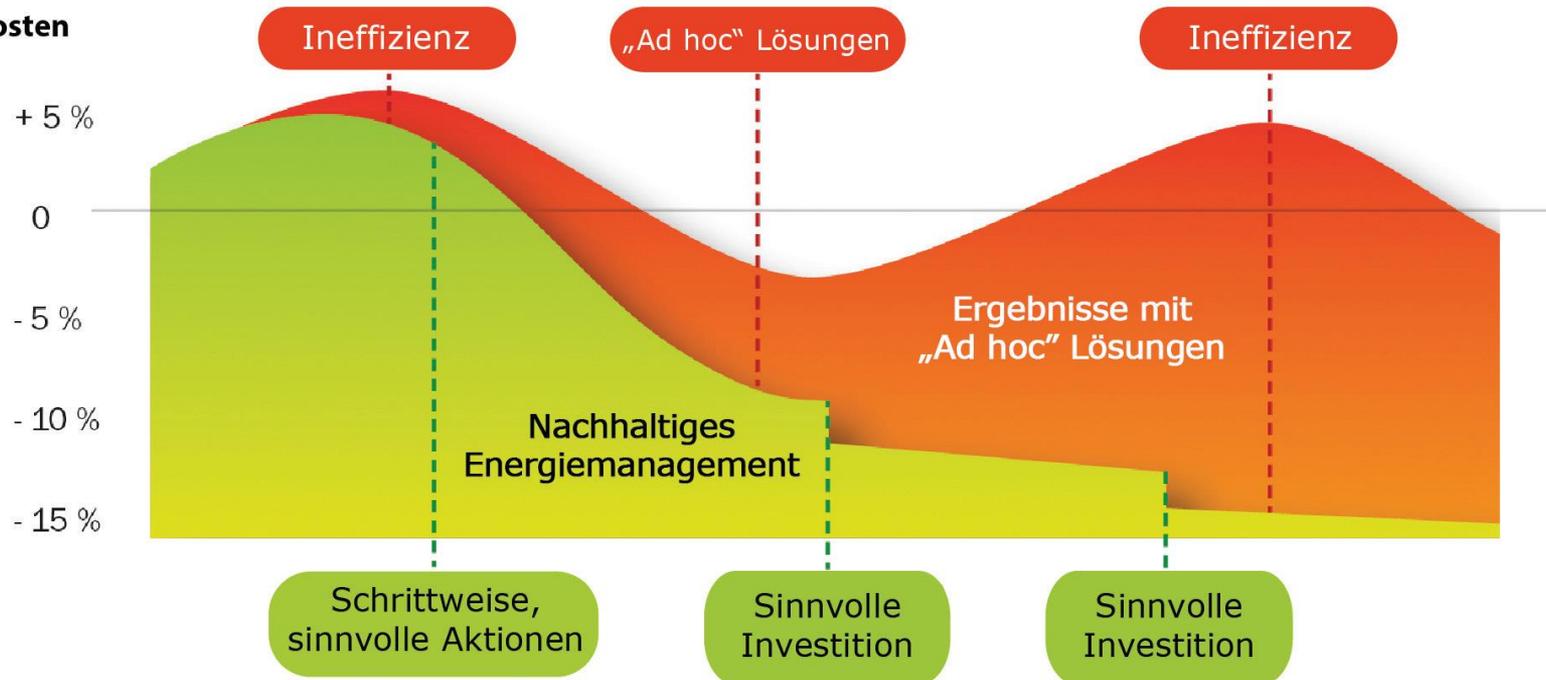
- Wieso EnMS - MEPIS Energy?
- Was bringt's?
- Schema
- Was steckt dahinter?
- UX Aufbau und Funktionen
- Referenzen

Wieso MEPIS Energy?

*Eine ausgezeichnete
Investition!
Amortisationszeit von
< 12 Monaten !*

*Das Informationssystem
zur Unterstützung von
Energie- und Umwelt-
Management*

Kosten



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Wieso MEPIS Energy?

- ✓ Zuverlässige Anzeige von Echtzeitwerten
- ✓ Optimierung des Energieverbrauchs
- ✓ Die optimale Sicht für den jeweiligen Anwender:
Unternehmens-, Gebäude- und Maschinenebene
- ✓ Nachverfolgung von Verbesserungsprozessen
- ✓ Ziele setzen und erreichen

Wieso MEPIS Energy?

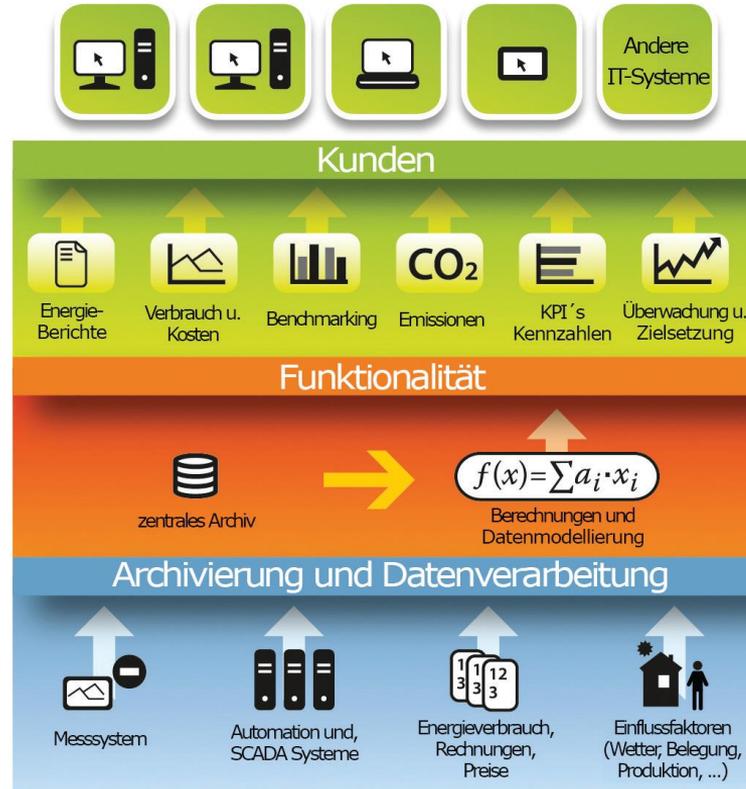
- ✓ Erfüllen von regulatorischen Anforderungen
- ✓ Spezielle Funktionen für Gebäude & Industrie
- ✓ Auf den Kundenwunsch individuell anpassbar

Was bringt's?

- Rechtzeitiges Erkennen von Abweichungen
- Vorhersage des Verbrauchs durch z.B. Berücksichtigung von Wetterprognosen (Produktionsplan, ...)
- Identifikation von Maßnahmen mit hohem Einsparpotential
- Überwachung des Verbrauchs und der Zielerreichung
- Analyse Algorithmen zur Potentialfindung und Optimierung
- Anpassbar an Kundenorganisation
- Reduktion von Verbräuchen und Kosten

Schema:

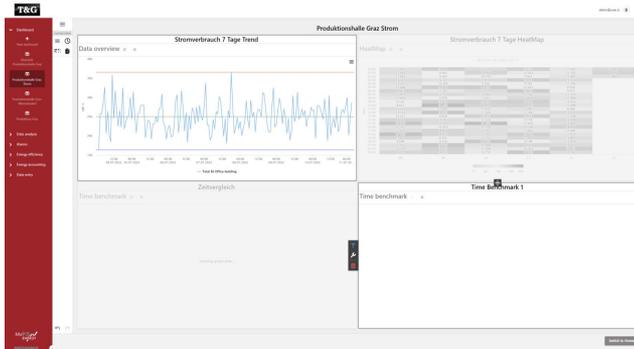
- Kommunikativ – alle gängigen Bussysteme und Protokolle
- Digitale- und Analoge-Signale (Zählimpulse)
- Rest-API Interface zu anderen IKT-Lösungen
- Verschiedene Historian`s und Datenbanken



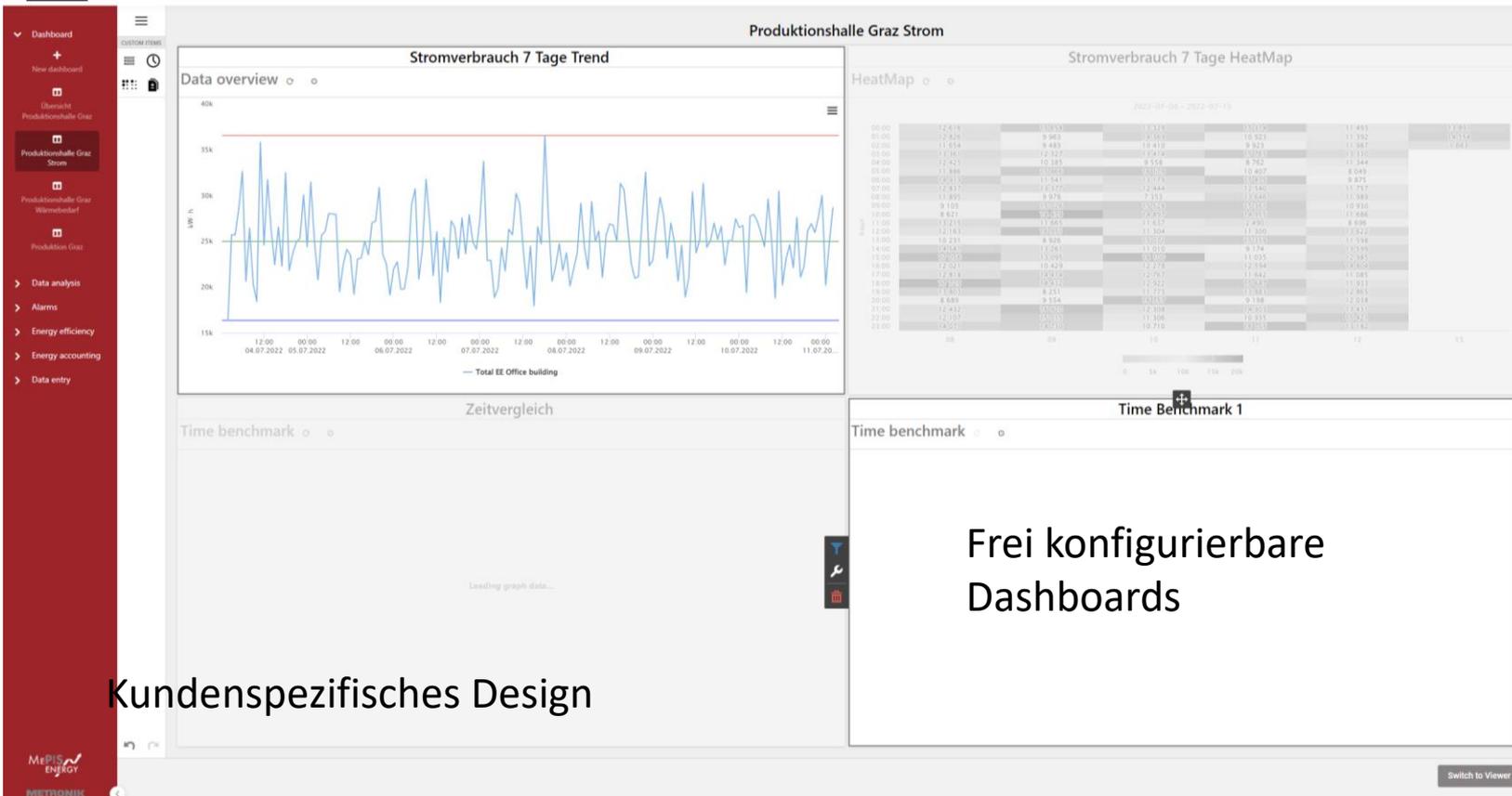
Was steckt dahinter?

- Unified Data Gateway (UDG) / Enterprise Data Model (EDM)
 - Zentrale Datenverwaltung aus unterschiedlichsten Quellen
 - Interpretation durch Enterprise Data Model und Business Data Model (ISA-95/ISA-S88 Standard)+
 - Virtuelle Messgeräte
 - Komplexe KPIs
 - Security & Benutzerverwaltung
 - Integration von 3rd Party Produkten über API
 - Analytik: Datenaggregation und Datenvalidierung

UX Aufbau



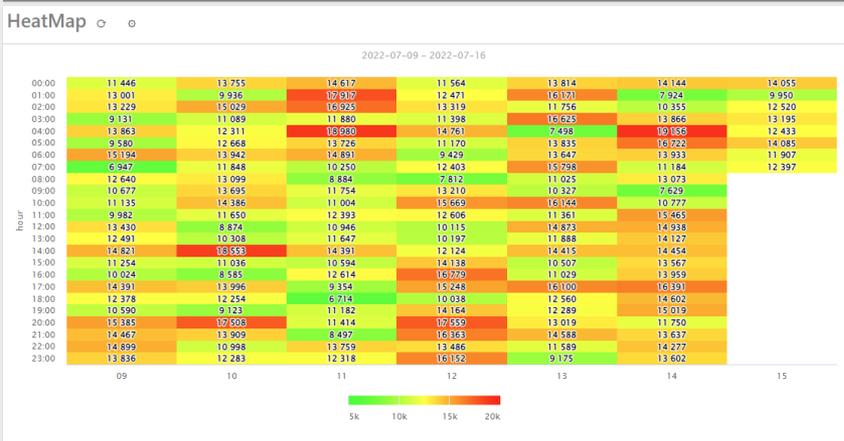
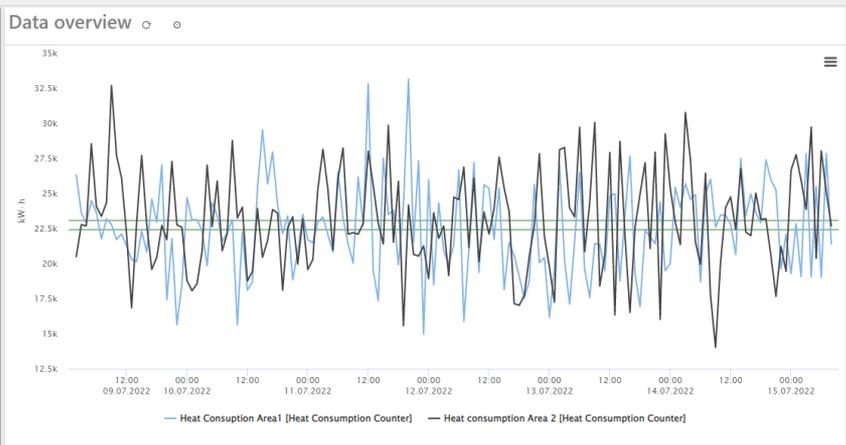
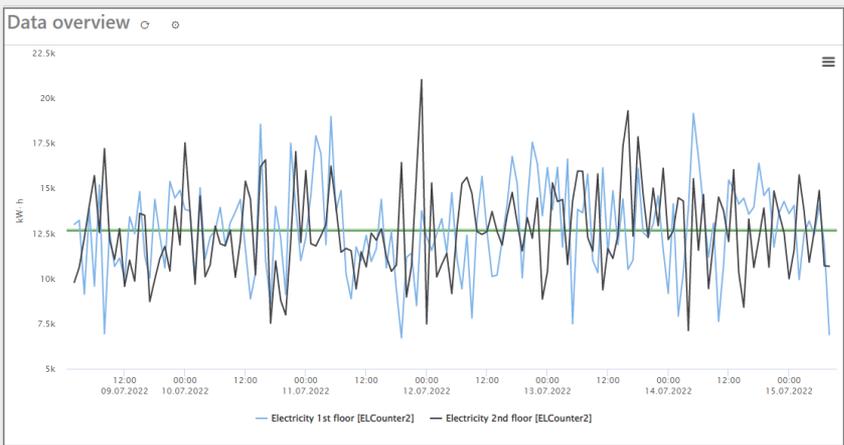
- Dashboards
- Datenanalyse (Trend, Zeitbenchmark, HeatMaps, Sankey...)
- Alarme
- Energieeffizienz
- Energieabrechnung
- Kanban-Board
- Top Verbraucher



Kundenspezifisches Design

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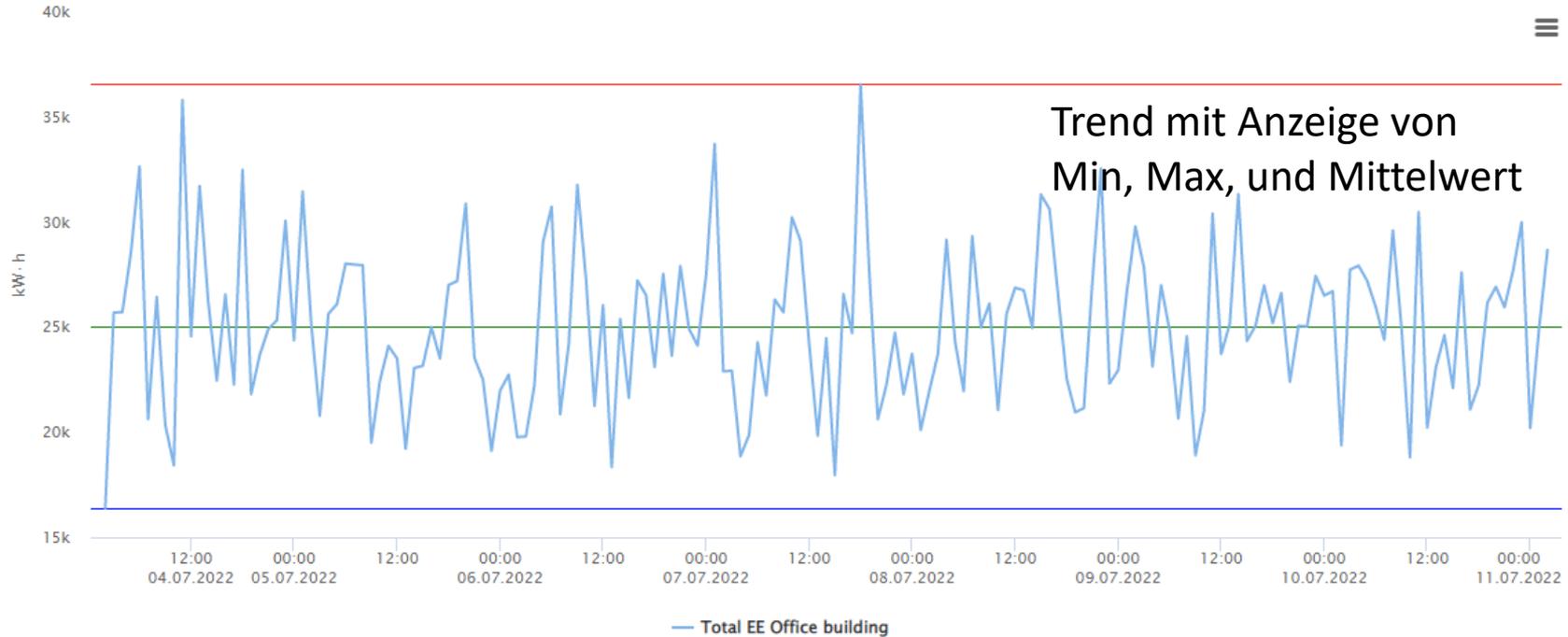
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Stromverbrauch 7 Tage Trend

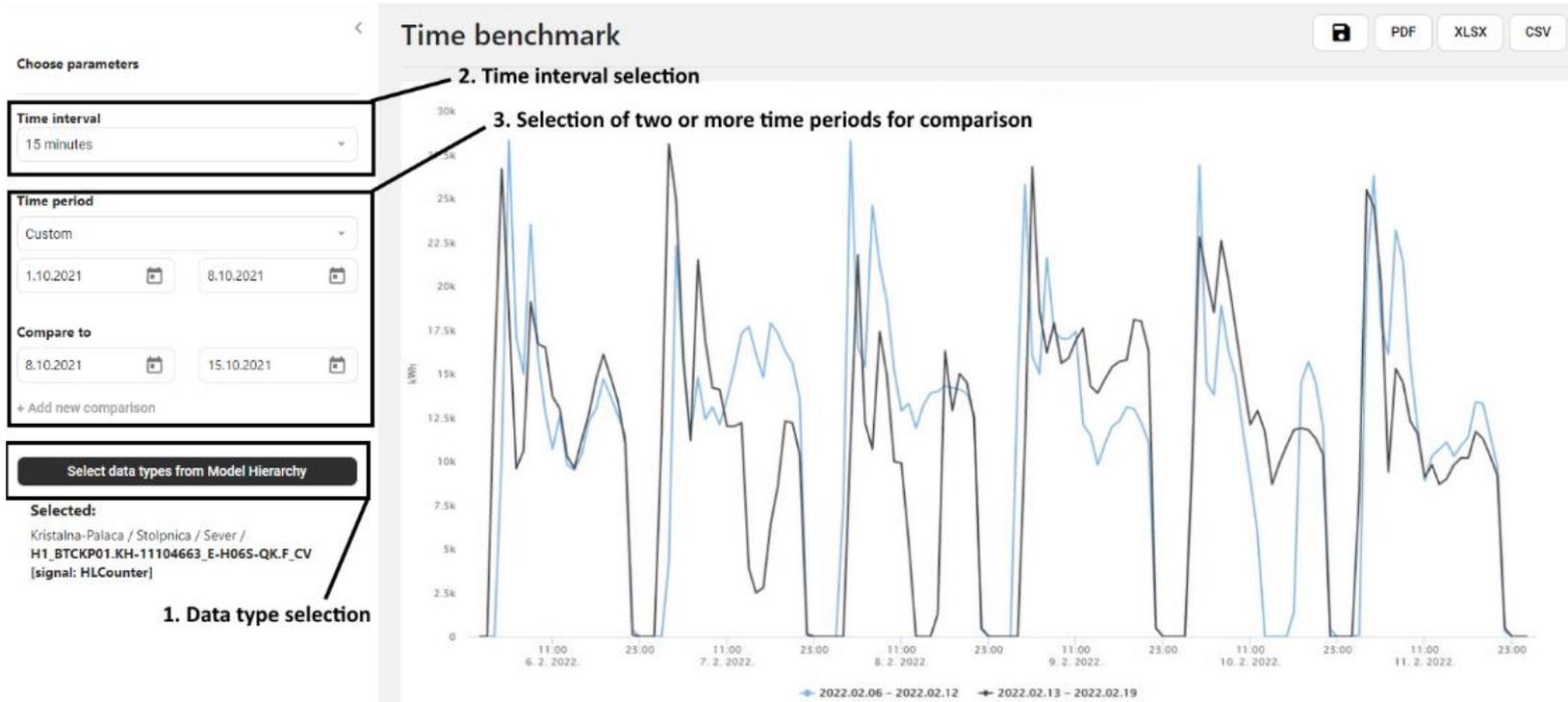
Data overview



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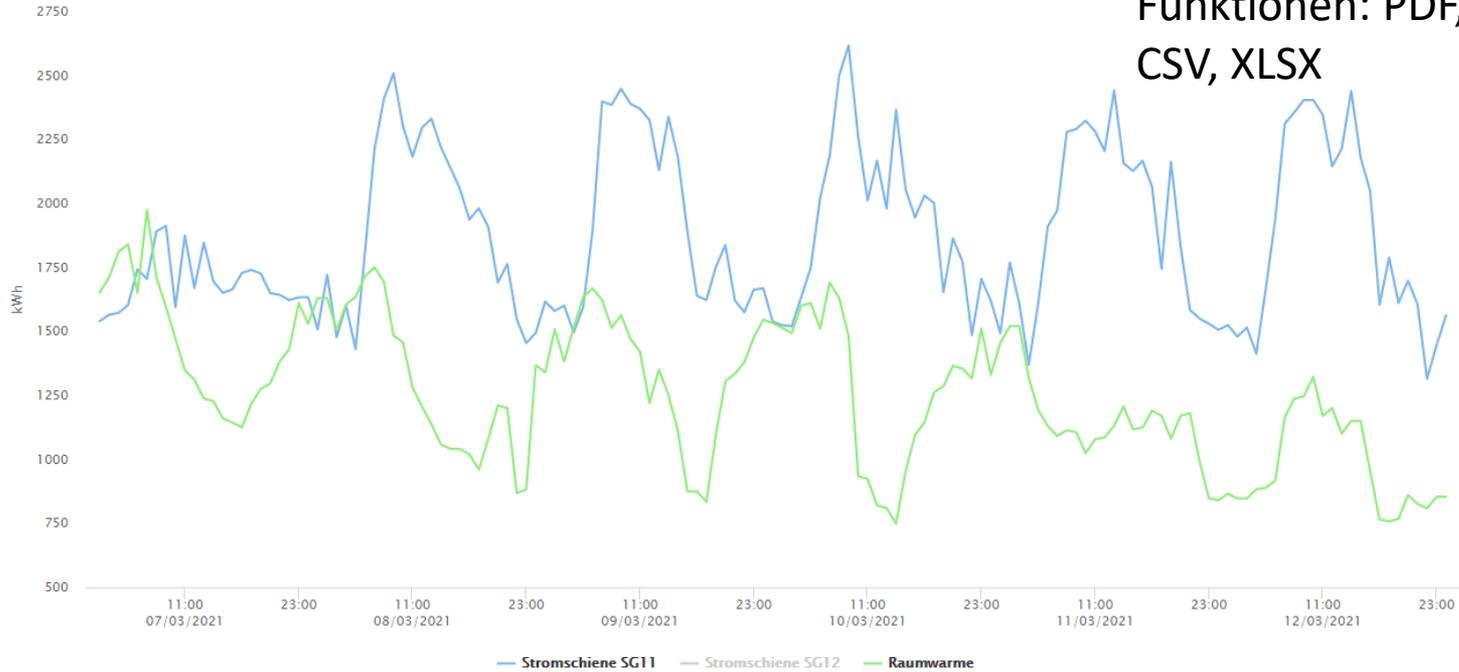


Vorher / Nachher Vergleich → Evaluierung Wirksamkeit von Maßnahmen

Data overview

PDF XLSX CSV

Electricity Consumption [kWh]



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HeatMap

Choose parameters

Time interval
hour

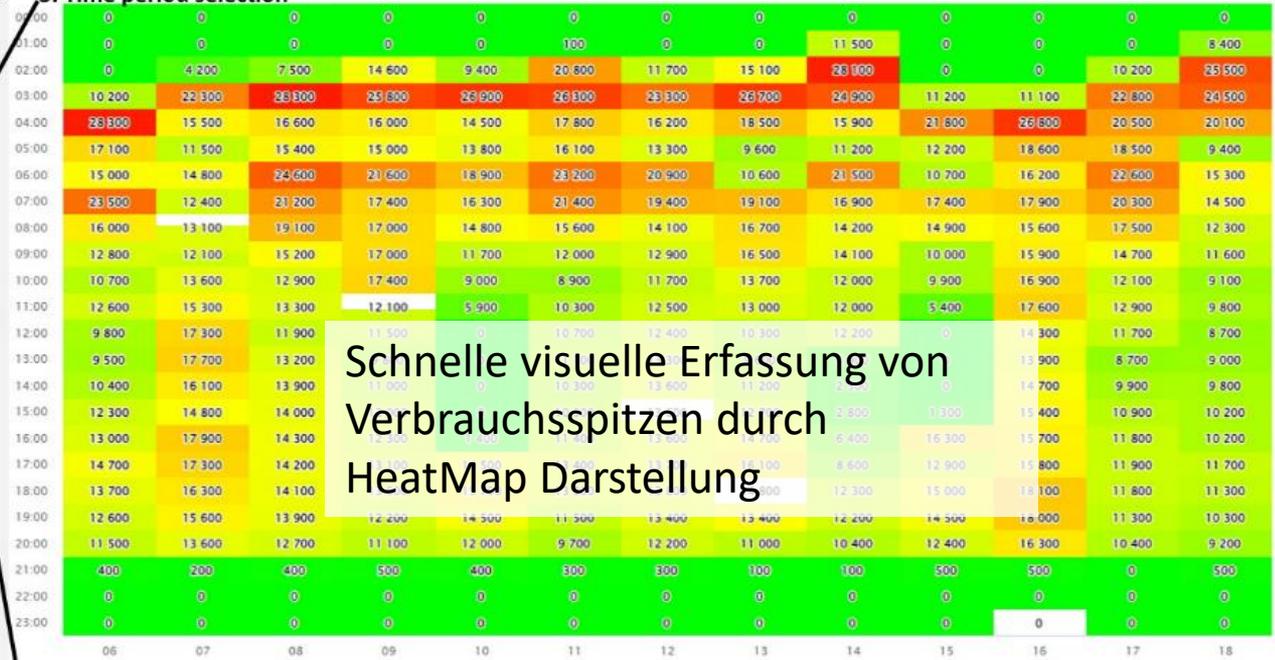
Time period
Custom
22.5.2022 24.5.2022

Min Value
Max Value

Select data types from Model Hierarchy

Selected:
Kristalina-Palaca / Stolpnica / Jug / H1_BTCKP01.EE-1716525011-5NADJV-QK.F_CV [signal: EECOUNTER]

2. Time interval selection
3. Time period selection



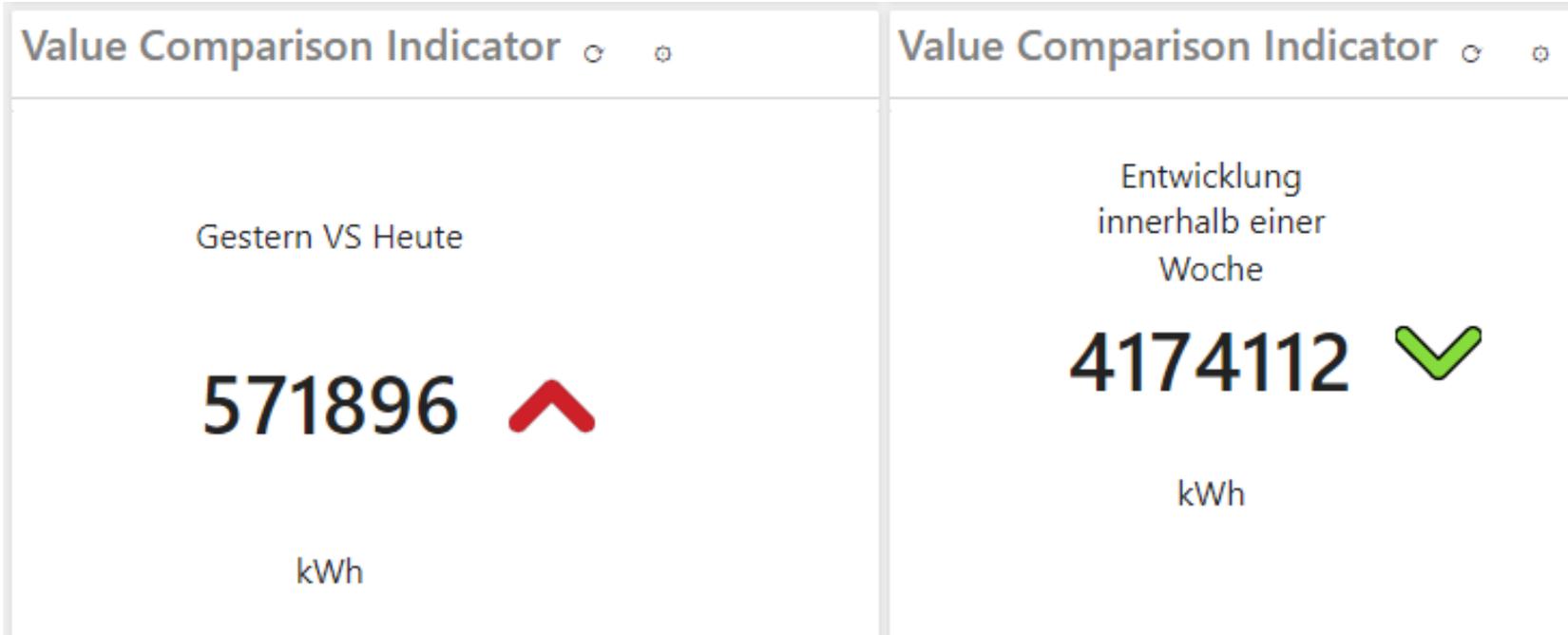
Schnelle visuelle Erfassung von Verbrauchsspitzen durch HeatMap Darstellung

1. Data type selection



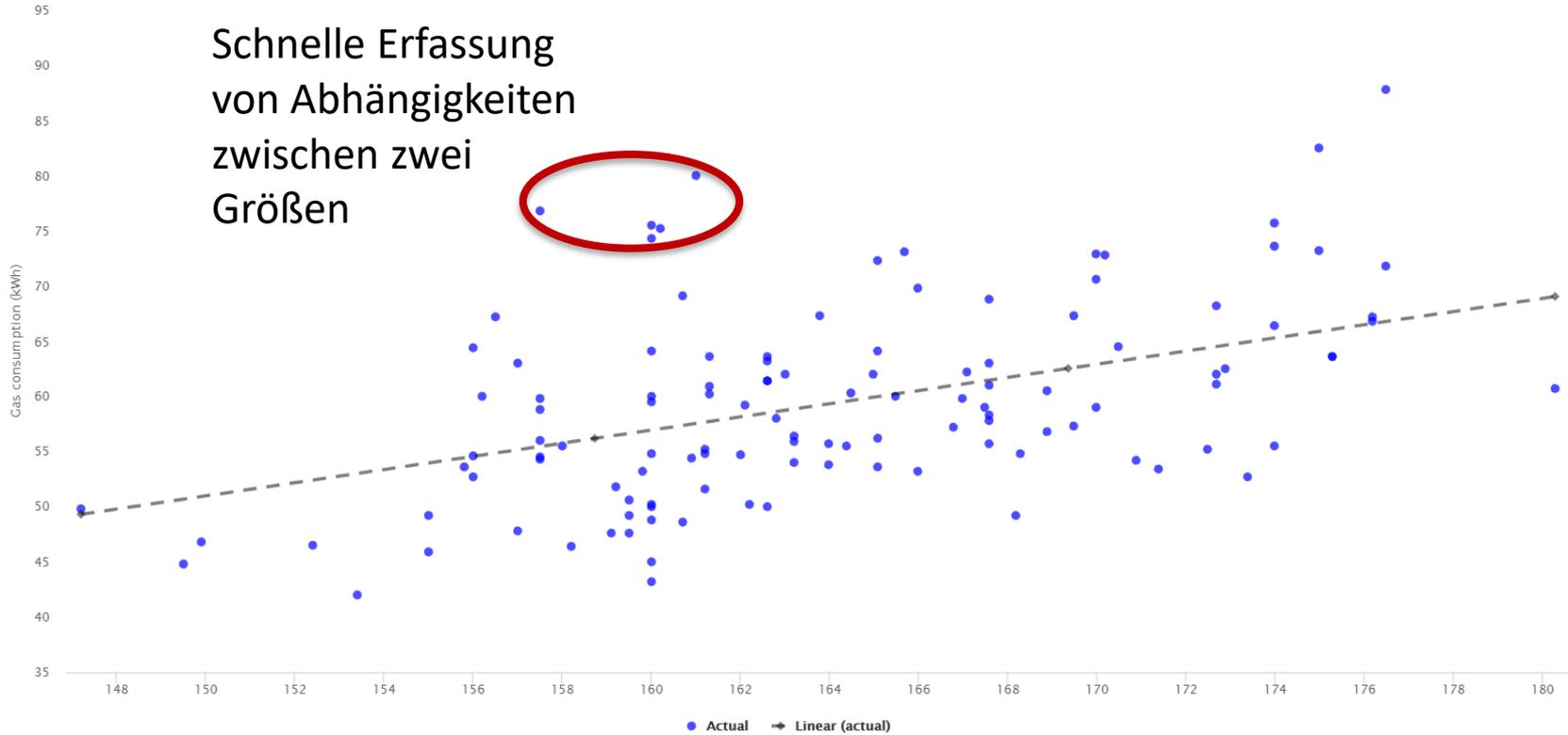
ind and max value input

Wertevergleich um einen schnellen Überblick über die Veränderung zu erhalten



Heating Regression

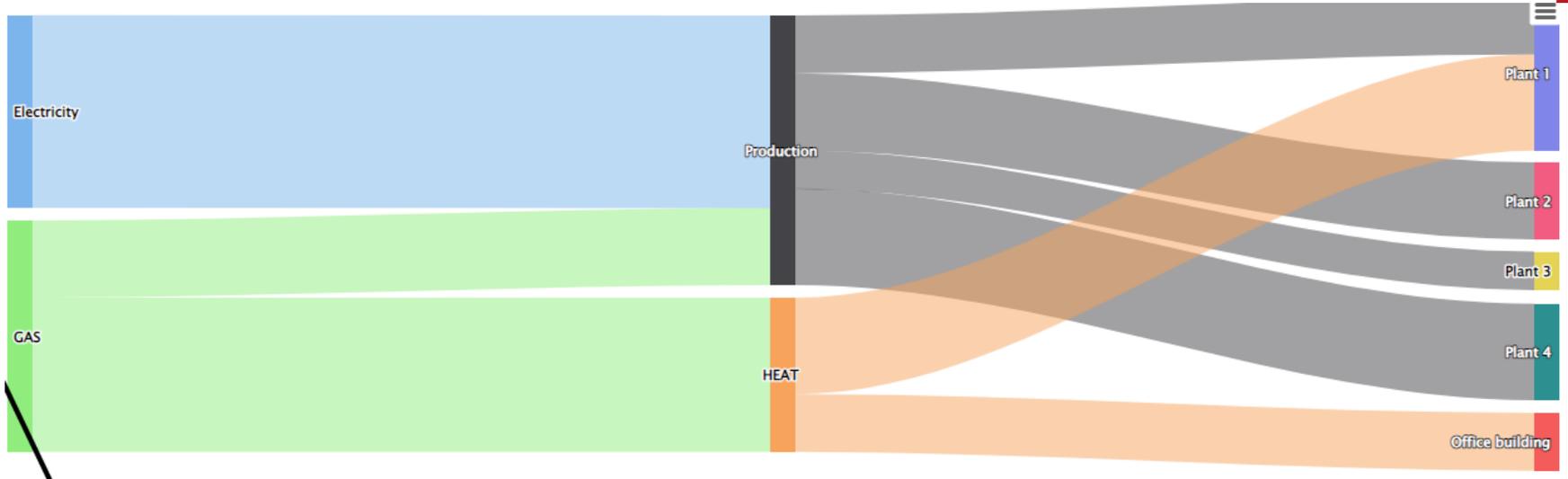
Schnelle Erfassung
von Abhängigkeiten
zwischen zwei
Größen



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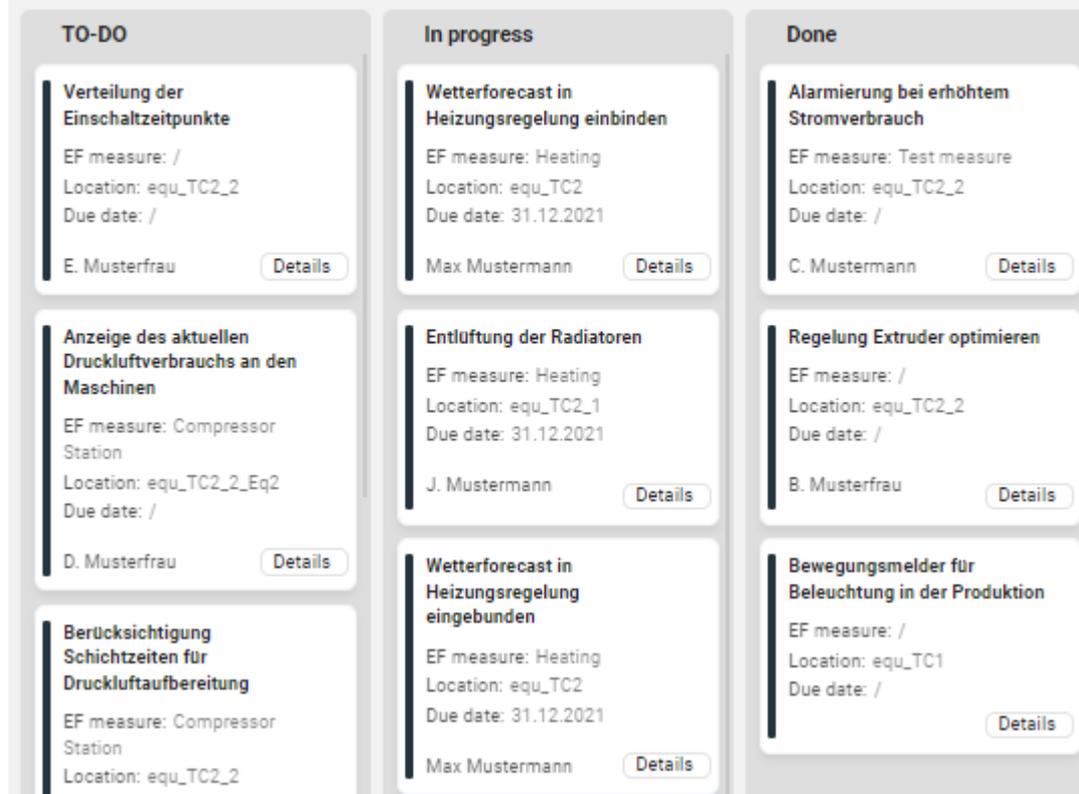


Mit dem Sankey Diagram die Energieflüsse sichtbar machen.
Stärker der Linie proportional zur Energiemenge



Task management

Mittels Kanban-Board die Optimierungsmaßnahmen immer im Blick



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- > Dashboard
- > Data analysis
- > Alarms
- v Energy efficiency
 - EF measures
 - Task management
 - Top consumers
- > Energy accounting
- > Data entry

Time period <

Select ▼

12/2/2021 12/2/2021

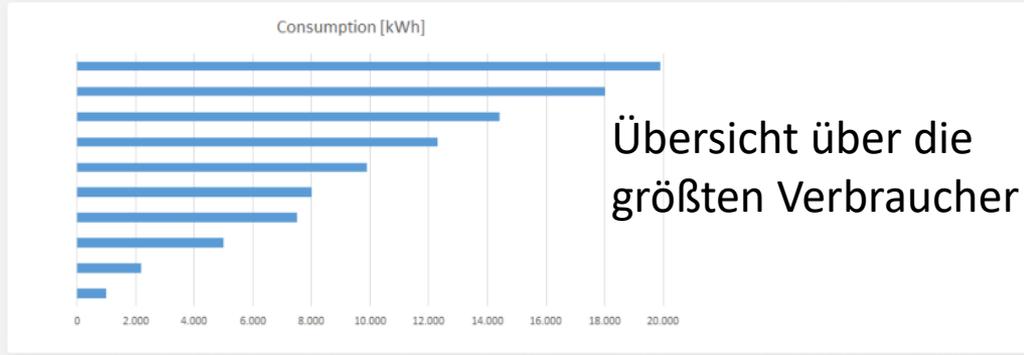
Location ⋮

- ▶ Nova Gorica
- ▶ Ljubljana
- ▶ Celje
- ▶ Novo Mesto
 - Building 1
 - Building 2
 - Building 3
- ▶ Maribor

Clear APPLY

Top Consumers

PDF XLS CSV



Measurement	Consumption [kWh]
Heating	199.000
Cooling 5	181.000
Ventilation 4	144.000
Floor 2	123.000
Floor 1	99.000
Floor 3	8.100
HVAC	7.500
Water heating	5.200

EF Measures

Name	Location	Medium	Planned savings	Realized savings	ROI	Due date
Install infrared heati...	KPI_2022-7-13_Electr1		1000	2000	1	30.06.2023
Residual heat from ...	Equipment 1		10000		5	31.12.2022
Lightning	Office Building		200000	0	4	31.12.2021
Opt. valve settings	Equipment 3		22000		8	15.03.2023
Compressor Station	Total EE Office buildi...		5000		3	11.10.2022
Install LEDs	Production Area		200		2	31.08.2022

Data overview - Data selection

Search by source type

- Measurements
- Signals
- KPIs

- Enterprise Data Model
- Bussines Data Model 1

Auswahl der darzustellenden Messwerte, Signale und KPIs über die Baumstruktur basierend auf dem EDM

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Select sources by location

Search

- Demo Company
 - Vienna
 - Office Building
 - Heat station
 - Heat Consumption HS1
 - Heat Consumption Counter (Heat Consumption HS1)
 - Trafo station
 - Electricity 1st floor
 - Electricity 2nd floor
 - Total EE Office building
 - ELCounter2 (Electricity 1st floor)
 - ELCounter2 (Electricity 2nd floor)
 - HC Office buildings Vienna
- Graz
 - Office building
 - Heat Consumption HS2
 - Office Building Heat Consumption
 - HCCUM (Heat Consumption HS2)
 - Production Area
 - Equipment 2
 - Equipment 1
 - Electricity 123
 - KPI_2022-7-13_Electr1
 - ELCounter2 (Electricity 123)

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Wo kann MEPIS Energy eingesetzt werden?

- Hotels
- Thermen
- Spitäler
- Lebensmittel
- Pharma
- Kunststoff
- CPG
- Chemie
- Automotive
- Uvm.



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Zentrale Datenverwaltung

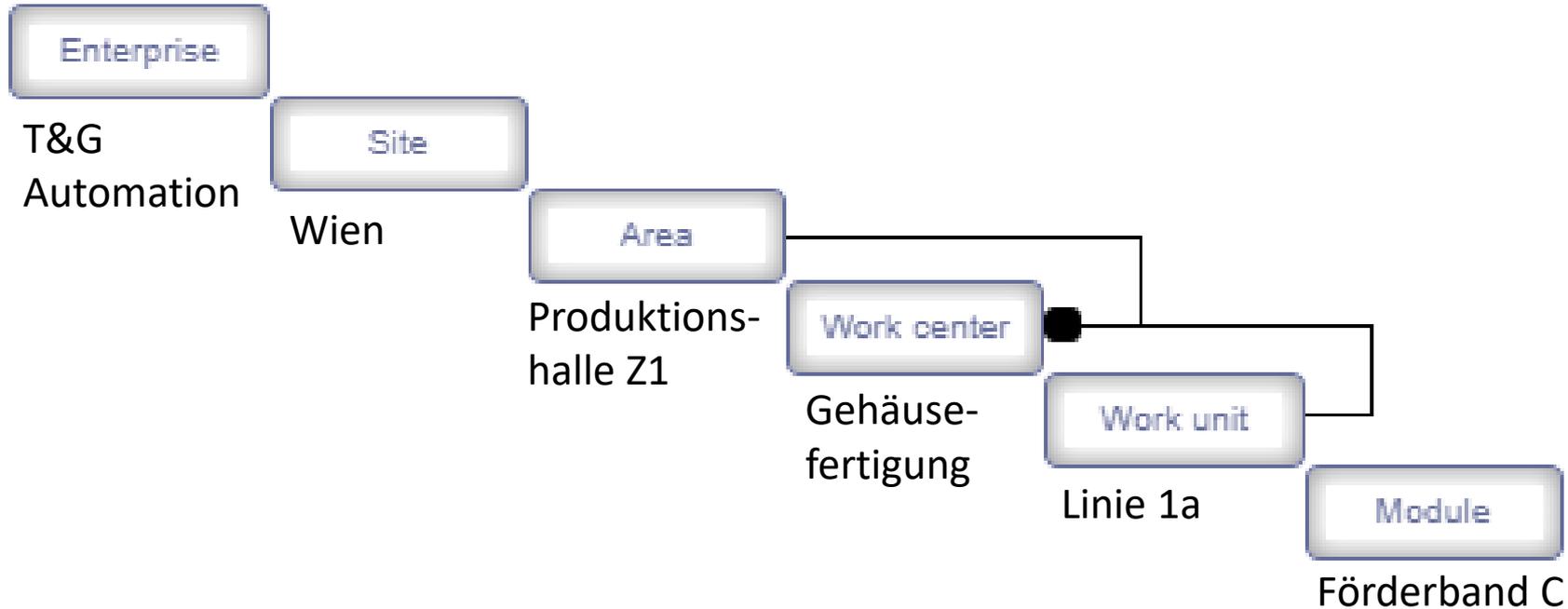
ENTERPRISE DATA MODEL (EDM)

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Ebenen des Datenmodells



Enterprise Data Model Configuration

- MODEL CONFIGURATION**
 - Enterprise Data Model
 - Bussines Data Model 1
- MODEL DATA**
 - Asset Configuration
 - Data Source
 - Code List
 - Calculations
 - Signals
- DIAGNOSTICS**
 - Endpoint Usage Statistics
 - Audit Trail
- SECURITY**
 - User Configuration
 - EDM Clients
 - Role Management

Search: Version: 8 Active from: 07/18/2022 08:1... ▼

KPIs
 Signals
 Measurements
 Events
 Properties
 Equipment Class

Collapse All

Enterprise Data Model Import Add New Equipment Hierarchy Levels

- Enterprise** TC - Demo Company Locked
 - Site** TC1 - Vienna Locked
 - Site** TC2 - Graz Locked
 - Area** TC2_1 - Office building ...
 - HCHS2 HCCUM
 - OfficeBuildingHeatConsumption
 - Area** TC2_2 - Production Area Continue Edit
 - CHA1 HCCounter
 - HCA2 HCCounter
 - CHA1
 - Work center** TC2_2_Eq2 - Equipment 2 Locked
 - KPI_Energy1
 - KPI_Energy12
 - Work center** TC2_2_Eq1 - Equipment 1 Locked
 - E123 ELCounter2
 - KPI_2022-7-13_Electr1
 - Work center** TC2_2_Eq3 - Equipment 3 Locked
 - M80

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- ✓ Kpi Class
- ✓ Location
- ✓ Calculation Formula
- ✓ Group Type
- ✓ Details
- ✓ Scheduler
- ✓ Summary

KPI Class: Energy_Consum

Equipment Location: TC2_2_Eq2 - Equipment 2

Formula Validation: OK

Group Types: 2 SET

Schedulers: OK

[Back](#)

Geführter Prozess
zum Anlegen
neuer KPIs



1. Type



2. Edm Attachment



3. Signal Parameters



4. Signal data



5. Summary

Step 1: Type



Internal Signal Data

I wish to transfer data from EDM model to container storage



External Signal Data

I have my own storage of the Signal data and i only wish to Link the Signal for I wish to transfer data from EDM model to my predefined storage

Discard

NEXT

Neues Signal anlegen

New/Edit Measurement ✕

Code:

Description:

Name:

Tag Name:

Comment:

Collector Name:

Low Range:

Unit Of Measure: ✕ ▾

High Range:

Value Data Type: ✕ ▾

Data Source: ✕ ▾

Value Decimal Places:

Value Type: ✕ ▾

Measurement Class:

Transformation Factor:

Messwert
hinzufügen

KPI Instances

Search:

Code

ES_MSF_PROZESS_MONTAGE_G30_STROM
ES_MSF_PROZESS_B2_MONTAGE_G30_STROM
ES_MSF_PROZESS_B8_MONTAGE_G30_STROM
ES_MSF_PROZESS_B3_MONTAGE_G30_STROM
KPI_2021-6-22_a4efdb0af5c2344cc38bb
KPI_2021-6-22_00b1504400e0b24dc65c
Montage02_Summe
HeatProdukt1
Halle_81_Verbrauch_MT
ES_MSF_INFRA_B2_MONTAGE_G30_STROM
S83507_Infra_Montage1
ES_MSF_INFRA_B3_MONTAGE_G30_STROM
S82502_Infra_Montage_2

Calculation details

ES_MSF_PROZESS_MONTAGE_G30_STROM

General Calculation Log Scheduler Diagnostics

Formula #1

```
1 sum([KPI(ES_MSF_PROZESS_B2_MONTAGE_G30_STROM, ES_MSF_PROZESS_B2_MONTAGE_G30_STROM)]+[KPI(ES_MSF_PROZESS_B3_MONTAGE_G30_STROM, ES_MSF_PROZESS_B3_MONTAGE_G30_STROM)]+[KPI(ES_MSF_PROZESS_B8_MONTAGE_G30_STROM, ES_MSF_PROZESS_B8_MONTAGE_G30_STROM)])
```

Valid From: 01.01.2021 15:52

Tree View

Berechnungen definieren im Formel-Editor

Equipment Code Alias

ES_MSF_PROZESS_MONTAGE_G30_STROM	i	🗑	...
ES_MSF_PROZESS_B2_MONTAGE_G30_STROM	i	🗑	...
ES_MSF_PROZESS_B8_MONTAGE_G30_STROM	i	🗑	...
ES_MSF_PROZESS_B3_MONTAGE_G30_STROM	i	🗑	...
IZbrisiMe2	i	🗑	...
IZbrisiMe2	i	🗑	...
Montage02	i	🗑	...
Montage Produkt1	i	🗑	...
ES_MSF_INFRA_B1_ROHBAU_G30_STROM	i	🗑	...
Halle 81	i	🗑	...
MSF_INFRA_MONTAGE_G30_STROM_TOTAL	i	🗑	...
ES_MSF_INFRA_B2_MONTAGE_G30_STROM	i	🗑	...
ES_MSF_INFRA_B3_MONTAGE_G30_STROM	i	🗑	...
ES_MSF_INFRA_B2_MONTAGE_G30_STROM	i	🗑	...

- ✓ Kpi Class
- ✓ Location
- ✓ Calculation Formula
- ✓ Group Type

Static	Custom
Time	Shift
MINUTE	No data to display
HOUR	
DAY	Work Order
WEEK	No data to display
MONTH	Custom 1
YEAR	No data to display
MINUTE-INTERVAL-10	Custom 2
MINUTE-INTERVAL-5	No data to display
MINUTE-INTERVAL-15	
Equipment	
EQUIPMENT_CODE	
Parent Equipment	
PARENT_EQUIPMENT_CODE	

Intervall festlegen
Für automatische
Summenbildung oder
Mittelwertbildung



Referenzen

- Industriehalle Heizung/Strom
- Shoppingcenter
- Energieversorger
- ...

ANHANG

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