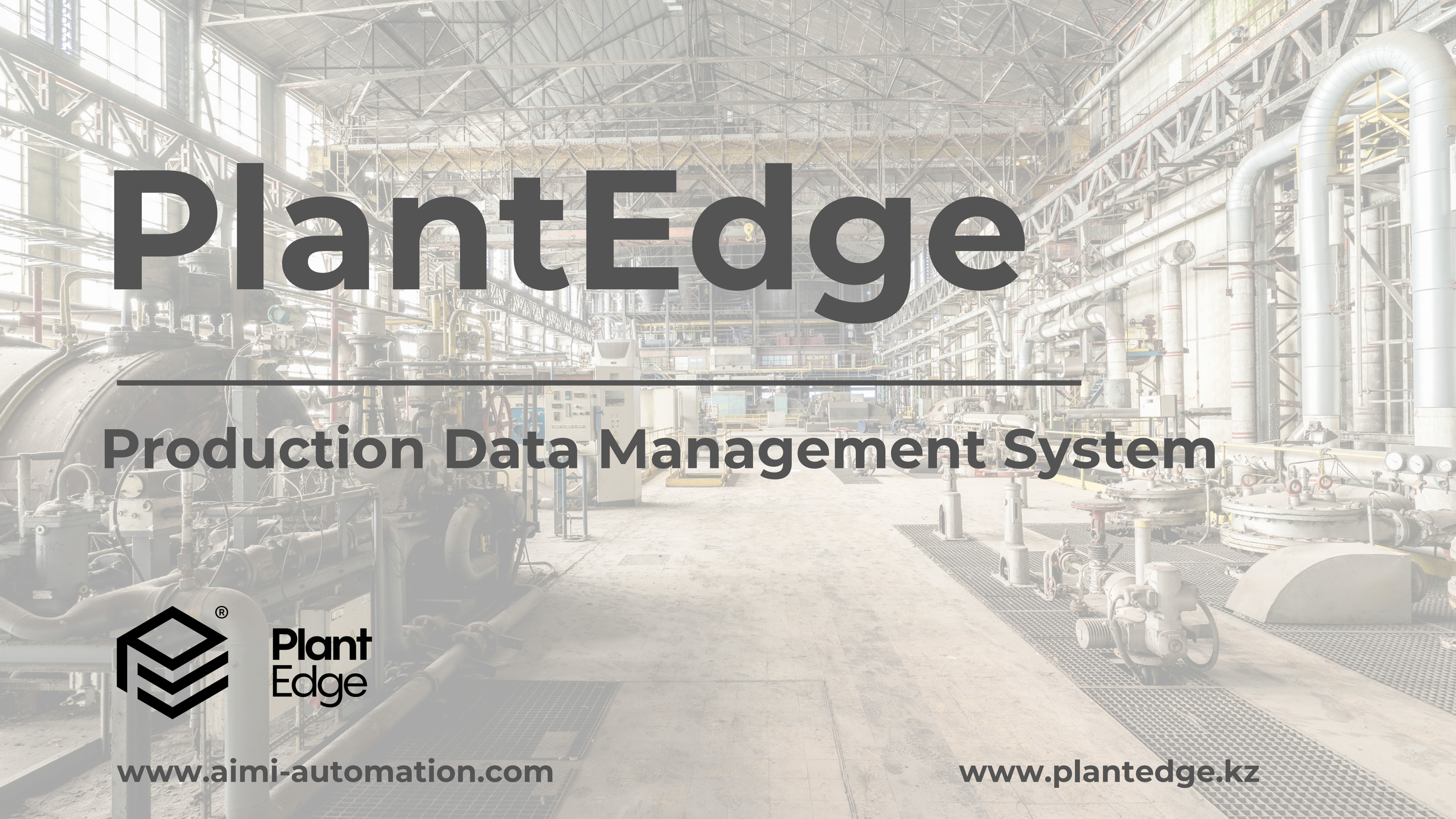


PlantEdge

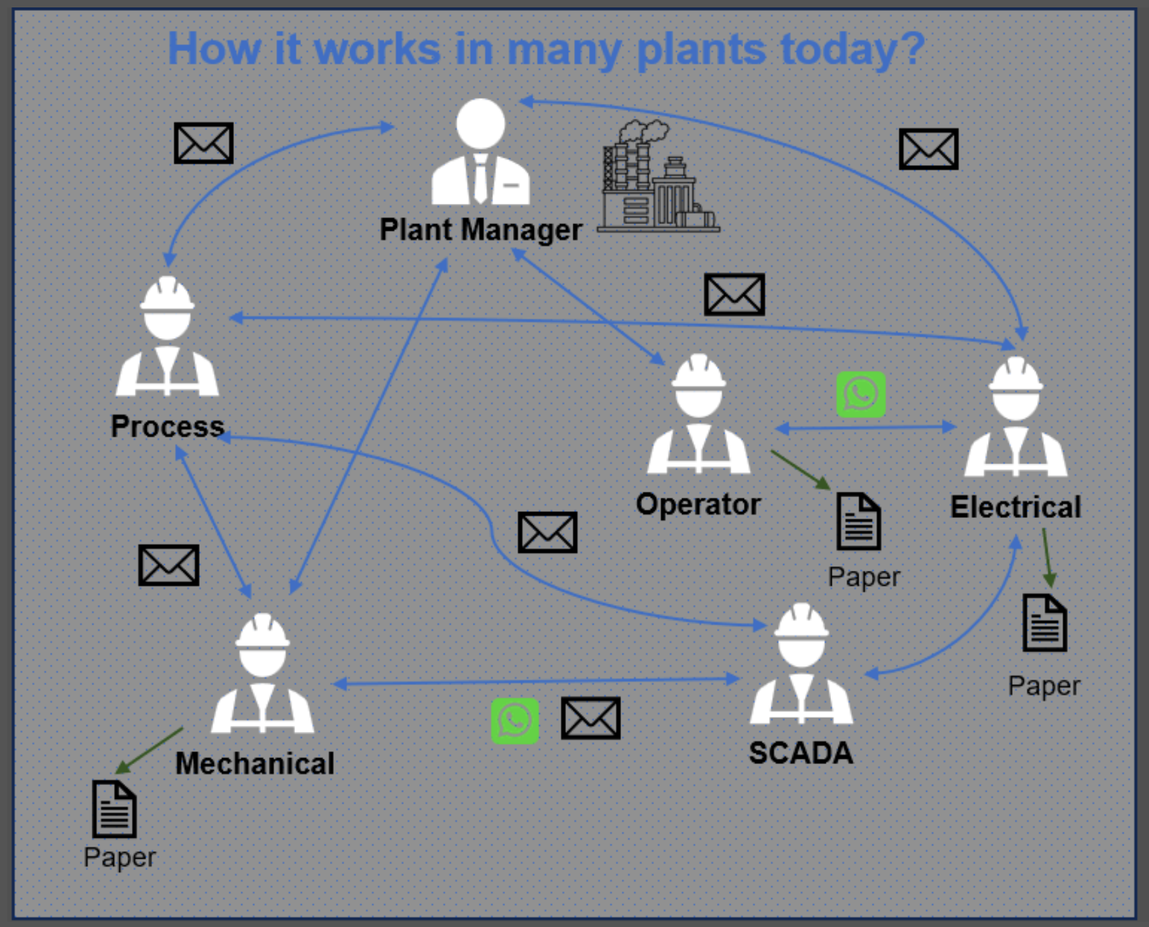
Production Data Management System

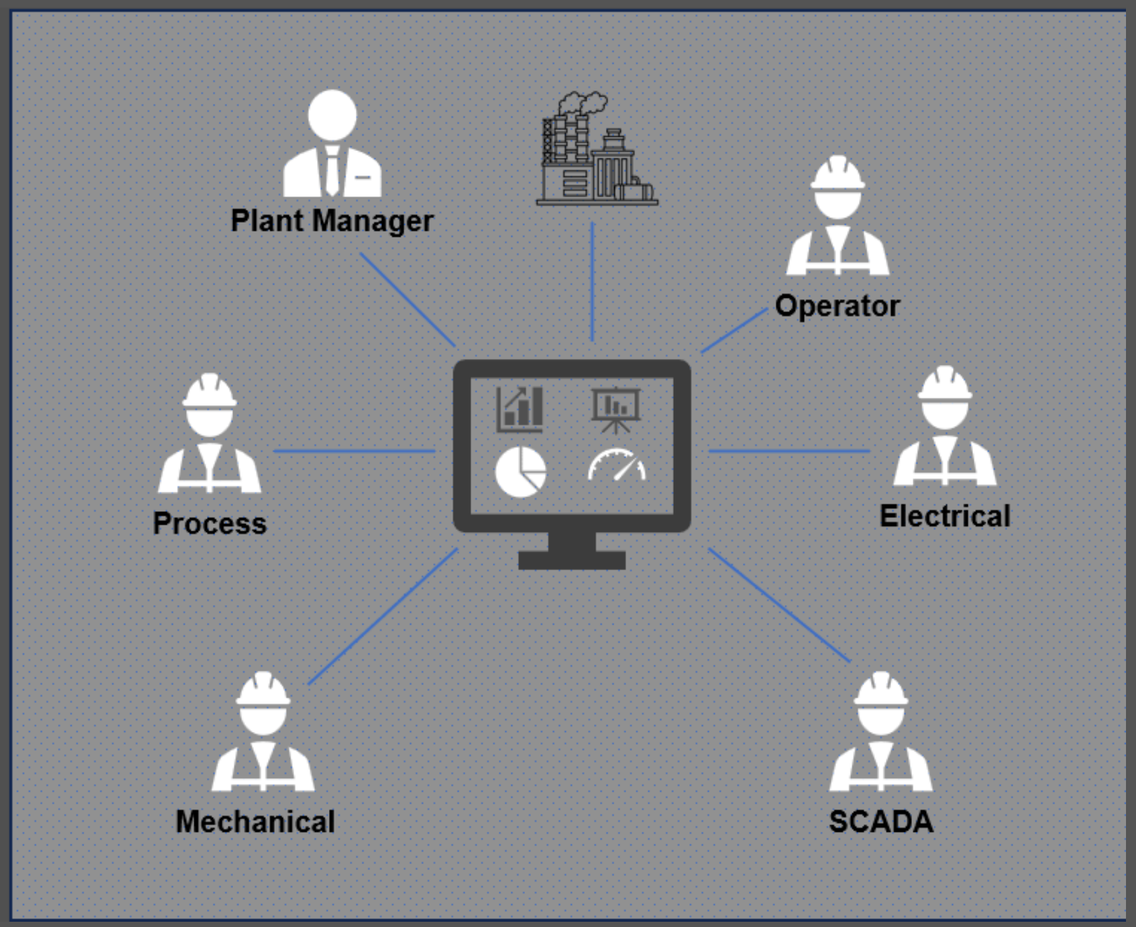
PlantEdge®

www.aimi-automation.com

www.plantedge.kz

Why PlantEdge?





Single source of Truth

Why PlantEdge?

1. Centralized Data Storage
2. Improved Decision-Making (data is available all required sides)
3. Operational Efficiency
4. Enhanced Traceability and Compliance
5. Predictive Maintenance
6. Cost Reduction
7. Integration with Advanced Technologies
8. Scalability and Flexibility
9. Strategic Advantage

Our team

ZHANIBEK YESKENDIR

Chief Technology Officer.
14 years of experience in industrial automation.

Projects in Qatar, Russian Federation, Eastern Europe, Kazakhstan

Awards: Chevron, Honeywell, KazEnergy

Certificates:TUV FSEng, EPKSL4

ZAKIR SUPEYEV

Cybersecurity Expert.
15 years of industrial IT experience. Currently works at ADNOC.

Awards: Honeywell

Certificates: Cisco, VMWare, CISSP, GICSP, MCSA (ML)

SERIK BERDALINOV

Product Development Lead.
15 years of experience in IT and product development.

Awards: Top global outsourcer 2024

Full-stack developer

ZHASTILEK KAPASSOV

Chief Executive Officer.
Mining and telecom industry.
16 years of experience in different levels of management.

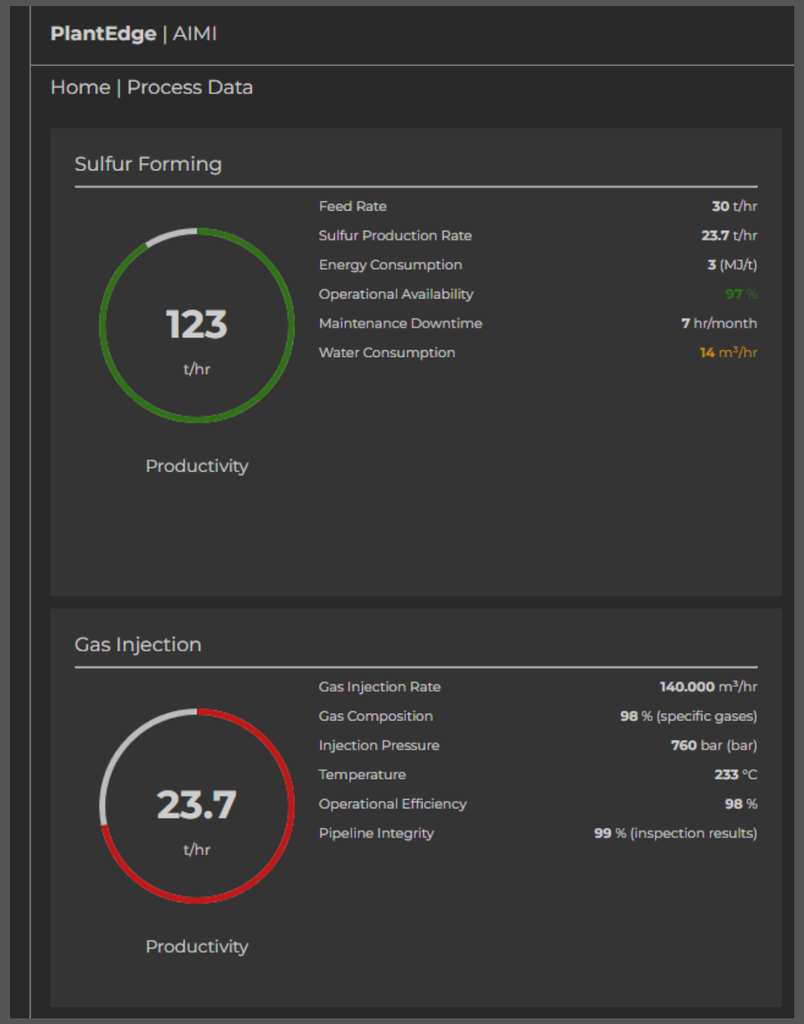
Turn your data into insights with PlantEdge

PERFORM AT A PEAK

PlantEdge effectively addresses asset health, integrity, cybersecurity, efficiency, and energy performance in a unified manner, enhancing operational effectiveness and risk management

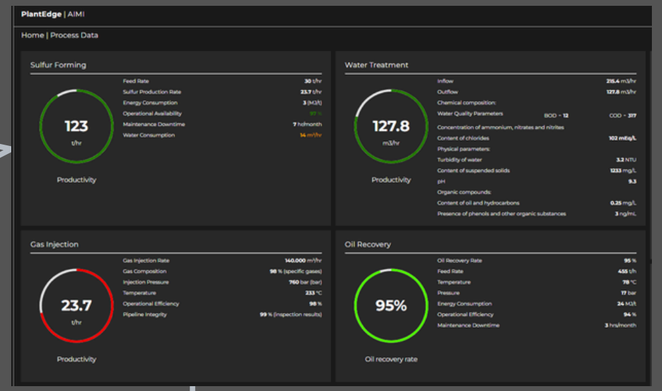
COMPLIANCE TRACKING

Monitor compliance with industry standards and regulations, offering documentation and reporting features for audits



ML/AI models

Generative AI



Datalake

Custom dashboards and KPI as per

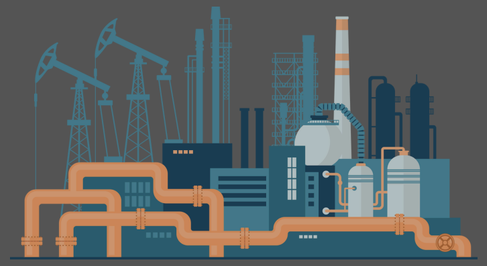
- O&G: API, ISO, NERC
- Mining: ASTM, OHSAS, SAE
- Energy: EN, IEEE, IEC, UL
- Local: GOST, etc.

Mining and Processing Plants (MPP)

- Mills
- Crushing
- Conveyors
- Pumps

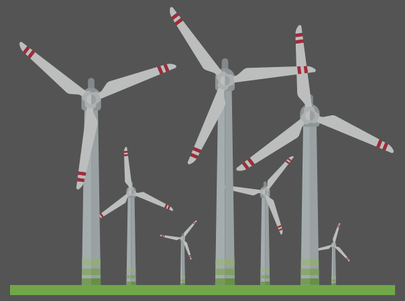
Oil and Gas Plants

- Wells
- Compressors
- Pumps
- Valves



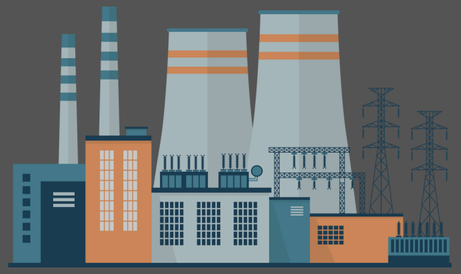
Wind Power Plants (WPP)

- Turbines
- Generators
- Gearboxes



Power Plants

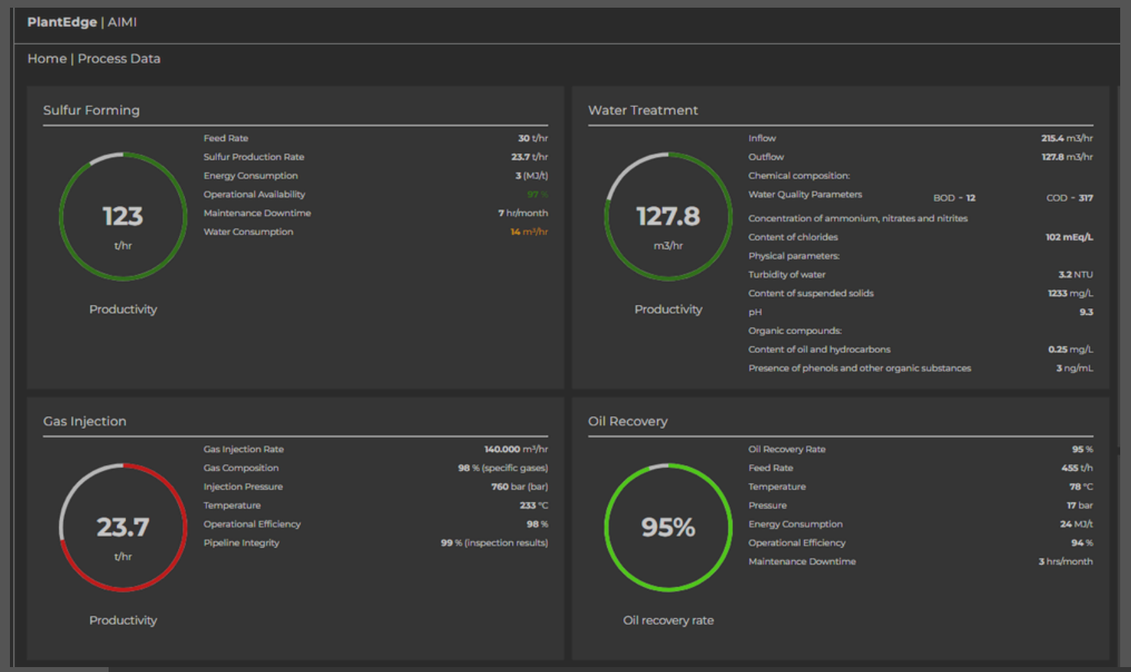
- Turbines
- Generators
- Cooling System

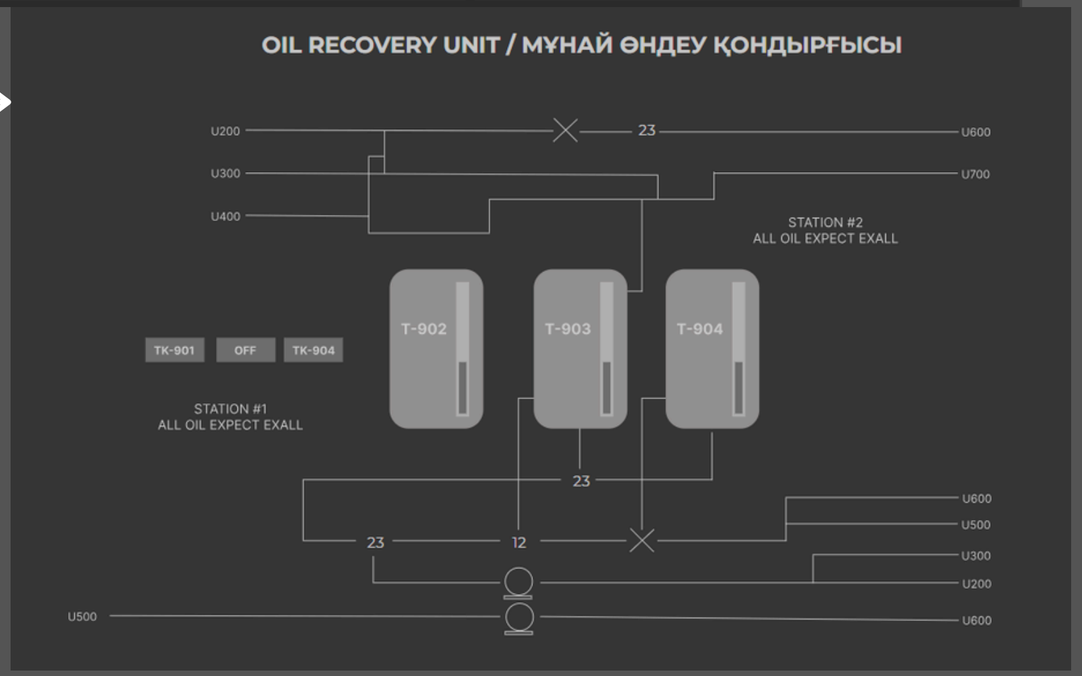


- DCS (Distributed Control System)
- ESD (Emergency Shutdown System)
- PLC (Programmable Logic Controller)
- Metering Systems
- SCADA (Supervisory Control and Data Acquisition)
- Vibration Monitoring Systems
- Condition Monitoring Systems
- Network Monitoring Systems
- Fire and Gas Detection Systems
- Suppression Control Systems
- CCTV (Closed-Circuit Television)
- Access Control Systems
- Intrusion Detection Systems
- Perimeter Monitoring Systems
- PMS (Power Management System)
- EMS (Energy Management System)
- Microgrid Controllers
- Work Order Management Systems
- CMMS (Computerized Maintenance Management System)
- Asset Management Systems (AMS)
- LIMS (Laboratory Information Management System)
- Industrial Wireless Communication Systems
- Data Historian Systems
- RTUs (Remote Terminal Units)
- Tank Level Monitoring Systems
- Pipeline Integrity Monitoring Systems
- HVAC Control Systems
- Automatic Meter Reading (AMR) Systems
- SIEM (Security Information and Event Management)
- Energy Storage System Controllers

- Different sets of documentation (P&IDs, PFDs, datasheets, etc.)

Modbus
OPC UA
MQTT
AMQP
Zigbee
IEC
SNMP
HTTPS/REST APIs
UDP
TCP/IP
Logs
Events
WMIs
SQL
JSON





Main

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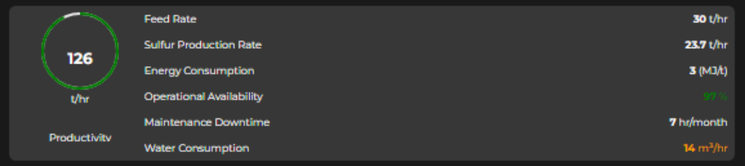
Process Data



CyberSecurity Data

Orders

GenAI Chatbot

What are critical parameters of compressor CO01?

Configuration Data

Process data KPIs

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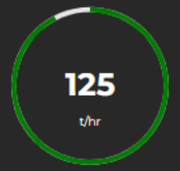
Home | Process Data

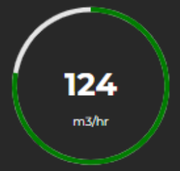
Sulfur Forming



Productivity

Feed Rate	**30** t/hr
Sulfur Production Rate	**23.7** t/hr
Energy Consumption	**3** (MJ/t)
Operational Availability	**97** %
Maintenance Downtime	**7** hr/month
Water Consumption	**14** m³/hr

Water Treatment



Productivity

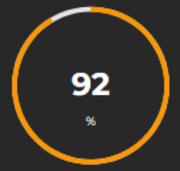
Inflow		**215.4** m3/hr
Outflow		**127.8** m3/hr
Chemical composition:		
Water Quality Parameters	BOD - **12**	COD - **317**
Concentration of ammonium, nitrates and nitrites		
Content of chlorides		**102** mEq/L
Physical parameters:		
Turbidity of water		**3.2** NTU
Content of suspended solids		**1233** mg/L
pH		**9.3**
Organic compounds:		
Content of oil and hydrocarbons		**0.25** mg/L
Presence of phenols and other organic substances		**3** ng/mL

Gas Injection

Productivity

Gas Injection Rate	**140.000** m³/hr
Gas Composition	**98** % (specific gases)
Injection Pressure	**760** bar (bar)
Temperature	**233** °C
Operational Efficiency	**98** %
Pipeline Integrity	**99** % (inspection results)

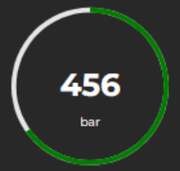
Oil Recovery



Oil recovery rate

Oil Recovery Rate	**95** %
Feed Rate	**455** t/h
Temperature	**78** °C
Pressure	**17** bar
Energy Consumption	**24** MJ/t
Operational Efficiency	**94** %
Maintenance Downtime	**3** hrs/month

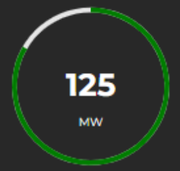
Compressors



PSA Hydrogen Unit

Compression Ratio	**5:1**
Discharge Pressure	**60** bar
Inlet Pressure	**3** bar
Flow Rate	**4777** m³/h
Power Consumption	**1600** kW
Efficiency	**88** %
Operational Availability	**98** %
Maintenance Downtime	**3** hrs/month
Vibration Levels	**1** mm/s

Energy Generation



Power Output

Power Output	**77** MW
Fuel Consumption	**245** m³/h
Efficiency	**43** %
Heat Rate	**11** MJ/MWh
Operational Availability	**94** %
Emissions	**135** kg CO_2/MWh
Water Usage	**4** m³/h

mm/dd/yyyy

Plant wide alarms

Total Alarms	**23**
Frequent alarms	**7**
Nuisance alarms	**1**
Urgent alarms	**3**
Unacknowledged alarms	**7**
Alarm Acknowledgment Time	**96** s
% of Alarms in Priority Levels	**7** %
Operator load	**12** per minute

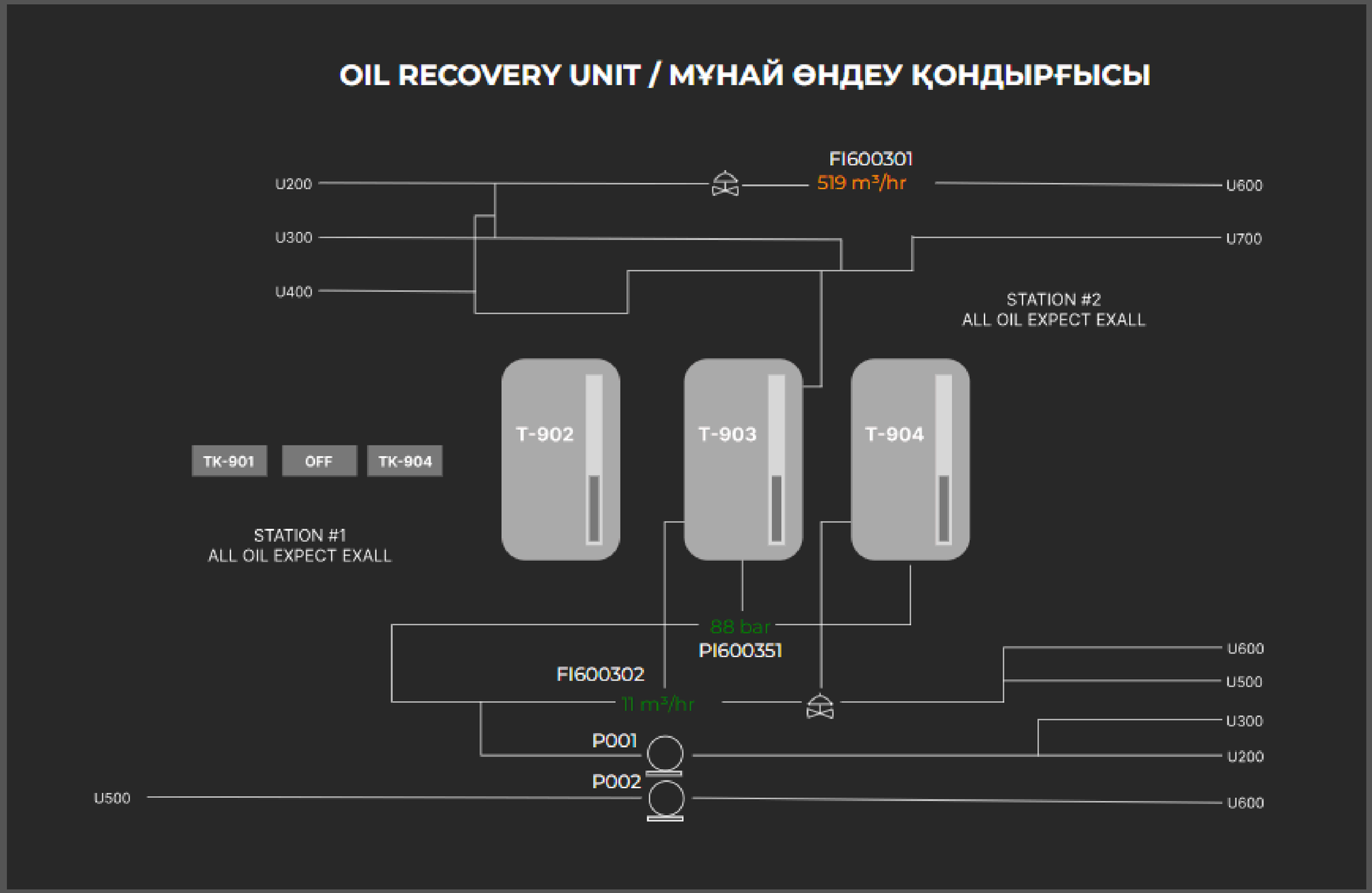
Plantwide metrics:

Forces/bypasses count	**1**
Safety shower in use	**1**
Personnel in red zone	**237**
Cars in red zone	**38**
Buses in red zone	**13**

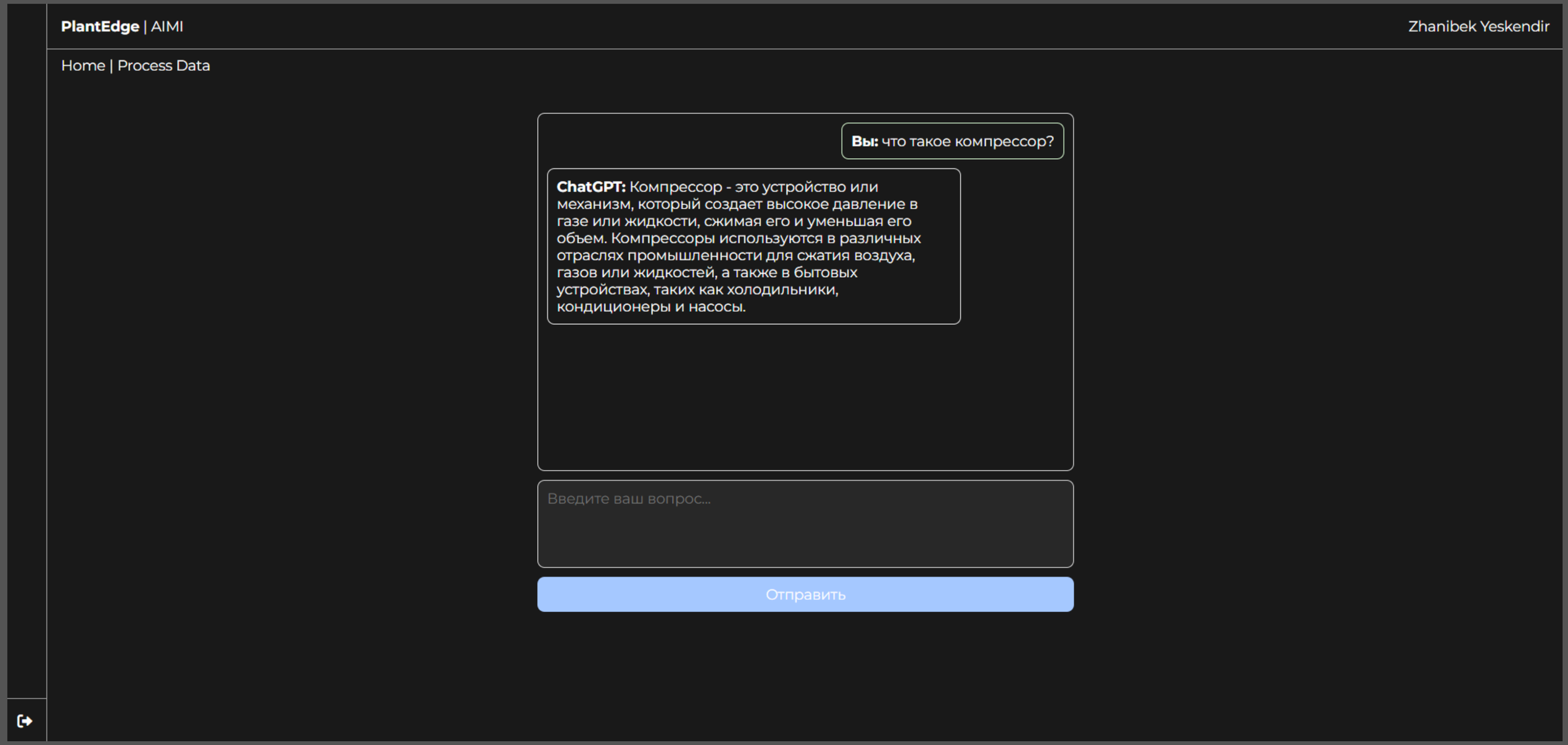
Flare emissions:

Flare Gas Composition (CH_4)	**70** %
Flare Efficiency	**99** %
Total Hydrocarbon Emissions	**5** kg/hr
CO2 Emissions	**1** kg/hr
Flare Run Time	**73** hrs/month
Plant production (oil)	**10345** t/d
Plant production (gas)	**1.2** Mm3/d
Plant production (power)	**73** MW/d

Process data. detailed screens



GenAI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Home | Process Data
Вы: что такое компрессор?
ChatGPT: Компрессор - это устройство или механизм, который создает высокое давление в газе или жидкости, сжимая его и уменьшая его объем. Компрессоры используются в различных отраслях промышленности для сжатия воздуха, газов или жидкостей, а также в бытовых устройствах, таких как холодильники, кондиционеры и насосы.
Введите ваш вопрос...
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