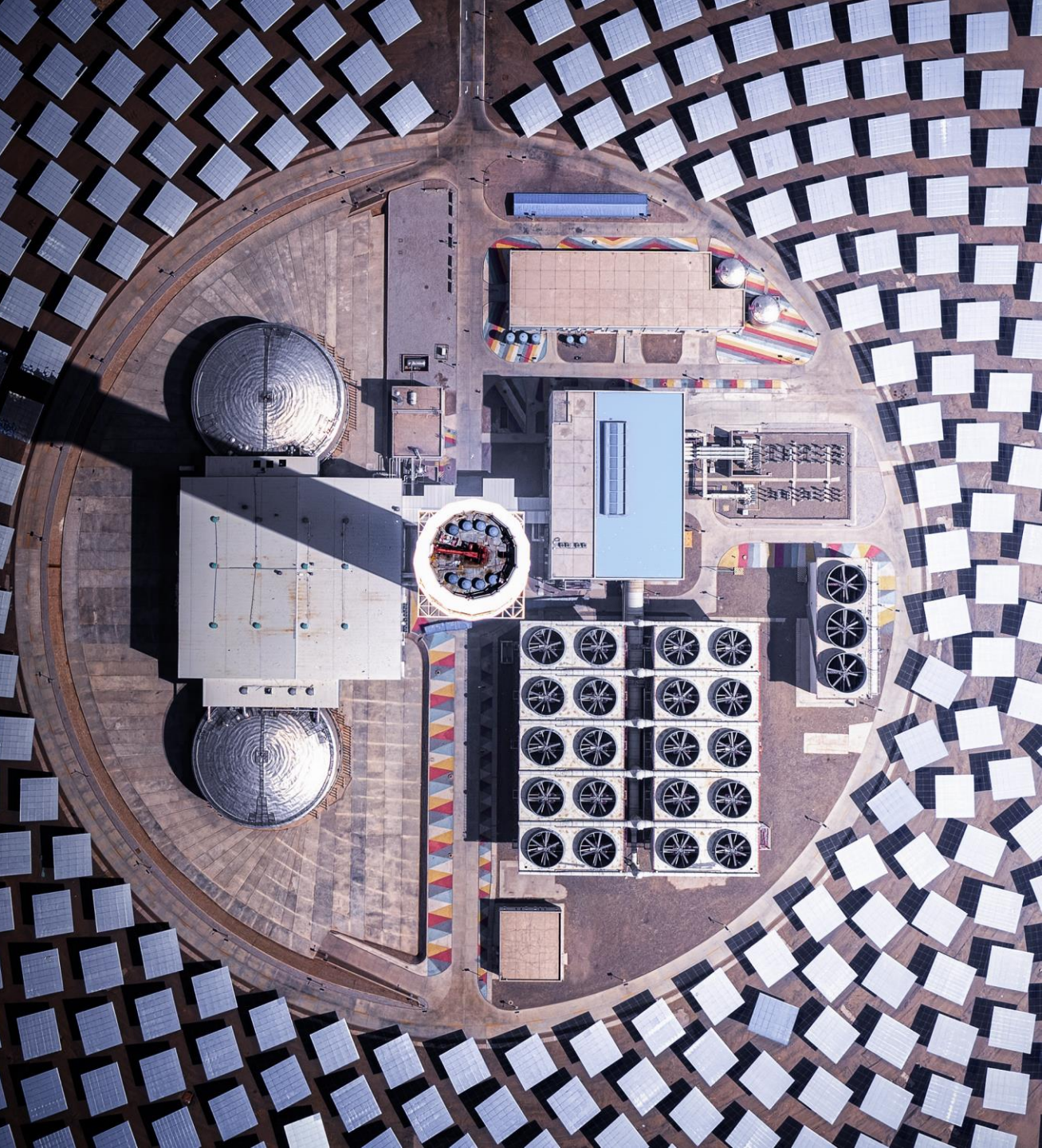


Connected

INDUSTRIAL LIFECYCLE

John Krajewski
VP Product Management, AVEVA



The evolution of the industrial value chain and software

Computers
1960s



Programmable

Robotic Process Automation
1980s



Automated

Software and Internet of Everything
2000s



Digitized

Cloud and Subscription
2010s



Networked

Data Analytics & AI
2020s



Intelligent

Integrated value chain can be challenging

Silos

Inconsistent data

Need to predict outcomes

Difficulty with multi-site operations

Limited virtual and team remote collaboration

Demonstrable results: Quantifiable | Operational | Scalable

Market informed strategy and direction

Demanding an industrial value chain that's

**DIGITAL,
INTEROPERABLE
AND RESILIENT**

Tech trends and market dynamics are driving

TRANSFORMATION



To prepare for the next-generation workforce and the

**CONNECTED
INDUSTRIAL ECONOMY**

AVEVA

Imagine

The future of our industry

AVEVA

Design



Build



Operate



Optimize





Design

Build

Operate

Optimize

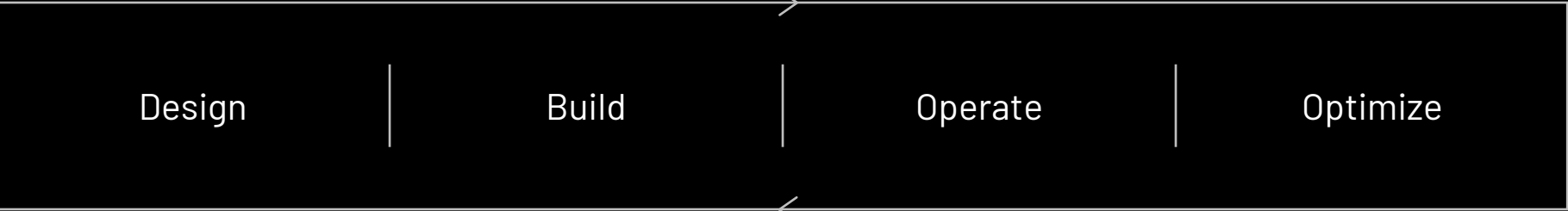
CONNECT

Intelligence platform for the connected industrial economy

Seamless experience

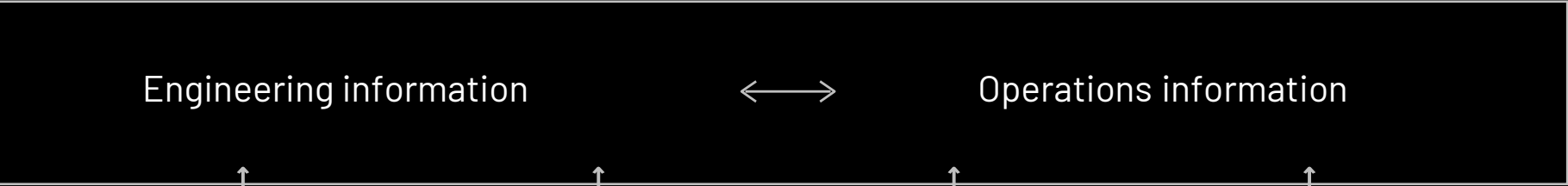


Applications and analytics

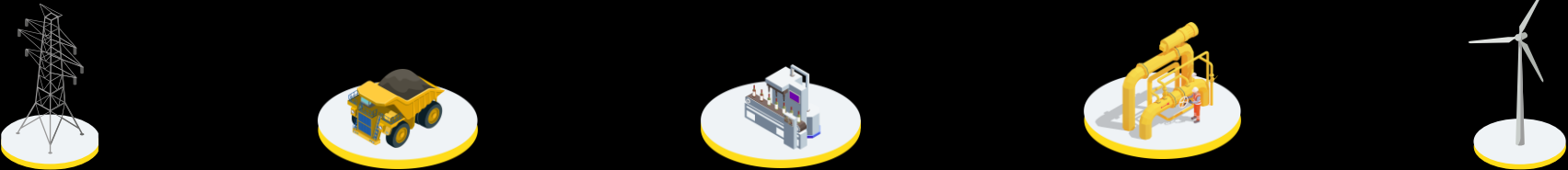


Ecosystem of developers and partners

Information



Assets and devices



Delivering a seamless
experience from
digital twin to
digital enterprise



Innovative New Solutions

CONNECT

Extending existing investments and capabilities

Seamless experience



Applications and analytics

Design



Optimize

Ecosystem of partners

Information

Engineering information

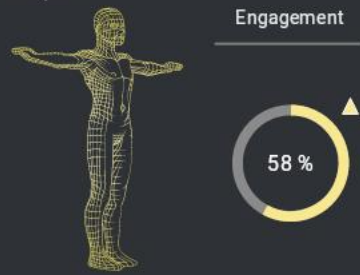
Operations information



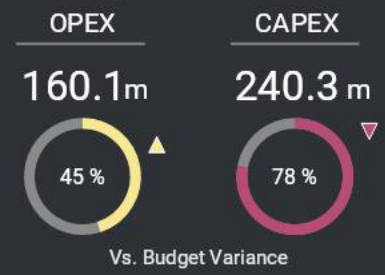
Demo: Value chain visualization & AI in action

To exit full screen, move mouse to top of screen or press **F11**

People



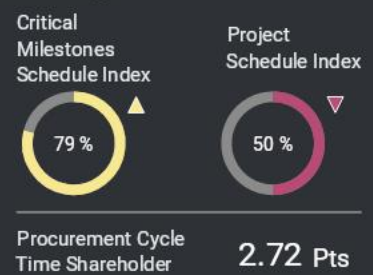
Profitability



Performance



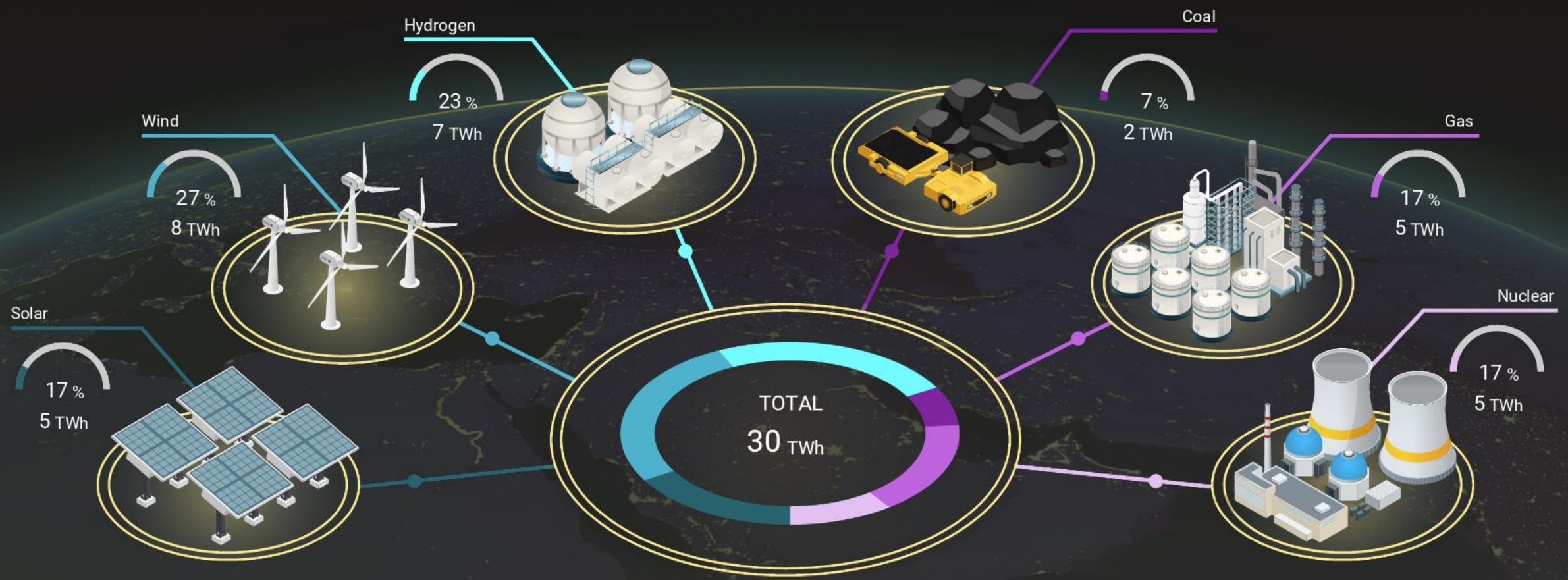
Efficiency



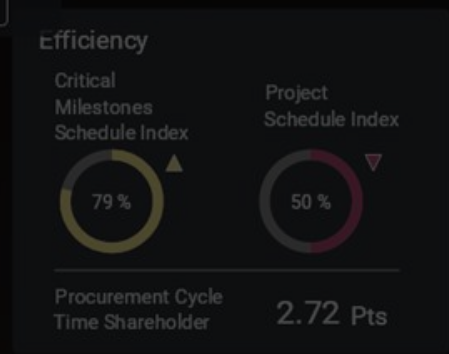
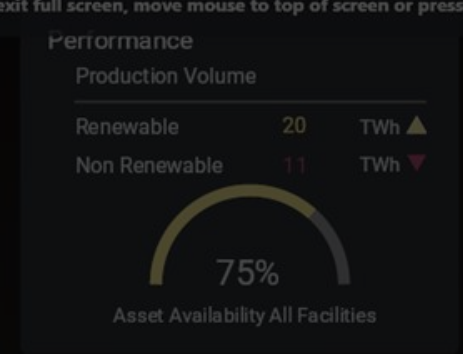
HSE

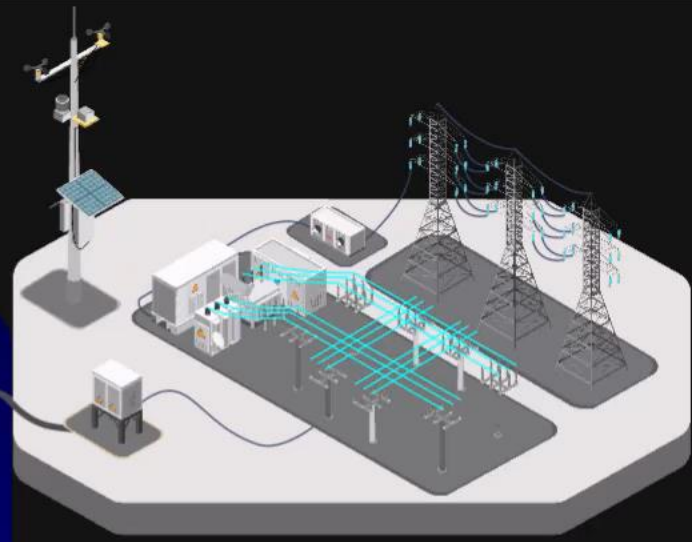
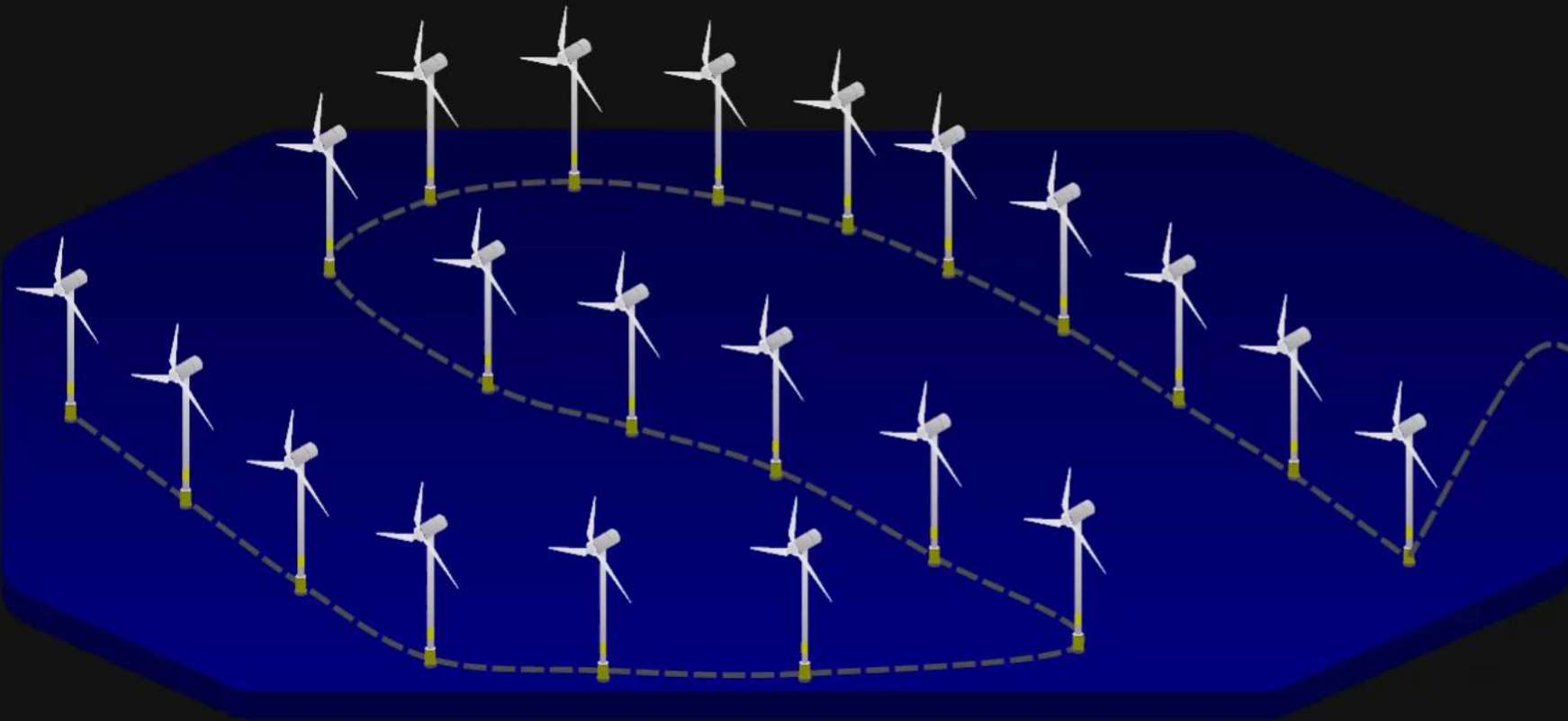


- A Accountability Compliance
- B Asset Integrity Compliance
- C Flaring Intensity



To exit full screen, move mouse to top of screen or press F11





Plant Load Factor



Time Based Availability



Energy Based Availability



MTBF



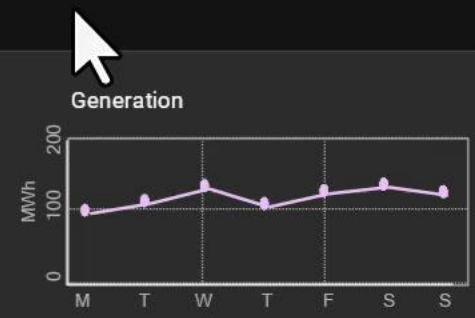
Grid Availability

LCOE
\$ 41 / MWh
\$ 123 ▲

Revenue Change Today

Energy Generated Today
380 MWh
0.05 T CO2

Environmental Benefits

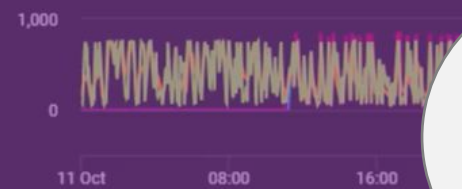


GE07 - Turbine Operations



Actual vs Expected Power

10/11/2023 12:00:00 am - 10/12/2023 12:00:00 am



- Active Power - 10 min rolling avg (kilowatt)
- Active Power (kilowatt)
- Expected Power - 10 min rolling avg (kilowatt)
- Expected Power (kilowatt)



Wind Speed Hourly

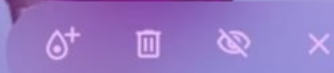
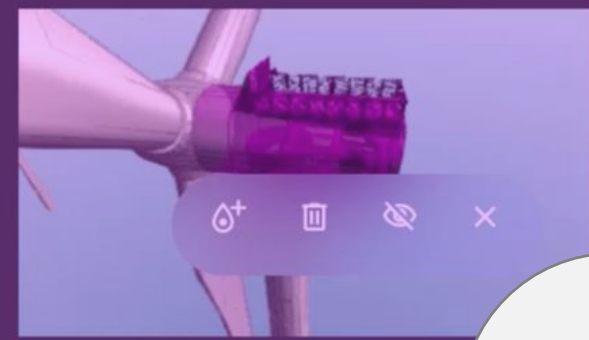
10/11/2023 12:00:00 am - 10/12/2023 12:00:00 am



GE07.Wind Speed (meter per second)

3D Model

Hornsea_Wind_Farm



Properties

Detail (2)

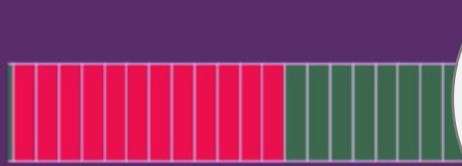
Dry Weight 1000 tn
Height 150 m

Common (9)

Main Tag GE07
 ARB
 WTP
 Homsea Wind Farm
 Wind turbine
 Offshore Wind Turbine - Monopile
 Tag Discipline R
 Tag Number GE07
 Tag Status Active

Utilization Timeline

10/11/2023 12:00:00 am - 10/12/2023 12:00:00 am



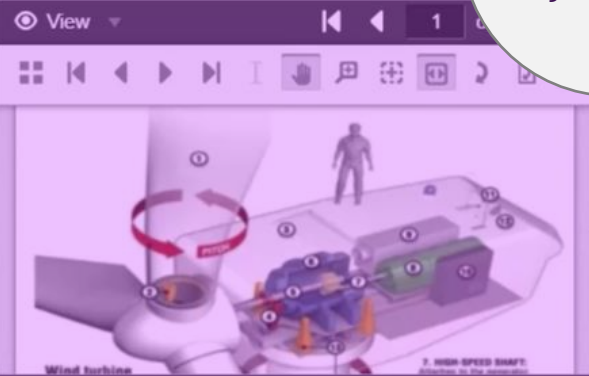
Utilization Summary

10/11/2023 12:00:00 am - 10/12/2023 12:00:00 am



Documents

Wind Turbine Components



30D 7D 3D **YESTERDAY** TODAY 12H 1H CUSTOM

- Home
- Assets
- Lists
- Content
- Dashboards**
- Applications
- Settings
- Recently Viewed

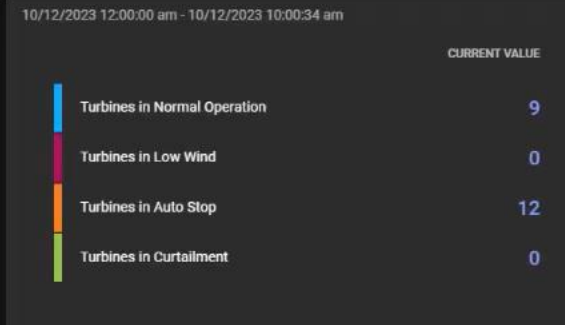
Hornsea Performance

Edit

Actual vs Expected Power



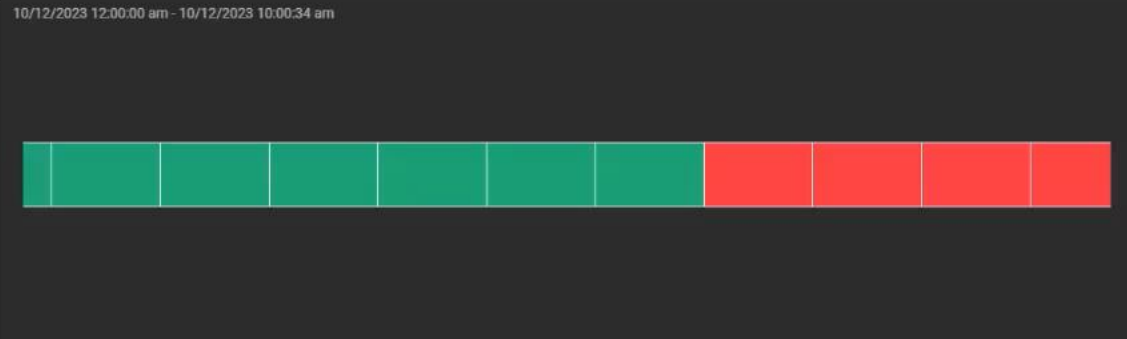
Turbine Summary



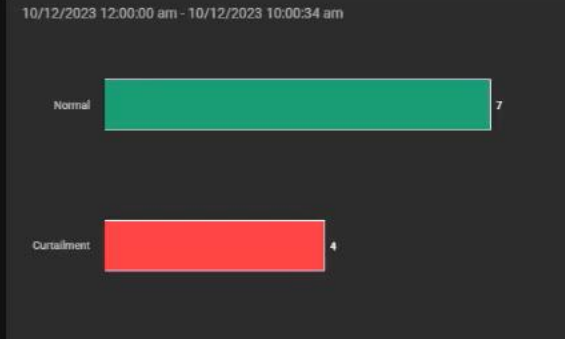
Wind Speed



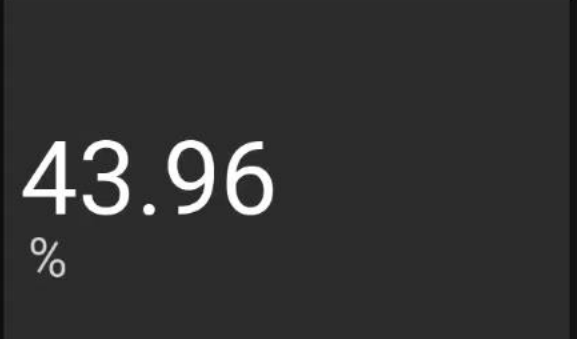
Utilization Time Line



Utilization Summary



Equivalent Availability MTD



CONNECT

**TRUSTED
INTELLIGENCE**

**ACTIONABLE
INSIGHT**

**UNIFIED
EXPERIENCE**

**EMPOWERED
ECOSYSTEM**