

A black and white photograph of an offshore wind farm. Several wind turbines are visible in the distance. In the foreground, a large service vessel is positioned near one of the turbines. The sky is filled with dramatic, heavy clouds.

Kairos Emissions Radar

Dr. Paul W. Seccombe
Sales Director UK/EU

DEMO

OIL

GAS



Condensate
pump power



Injection compressor
surge margin



Injection compressor
suction flow



Injection compressor recycle valve



Electric coalescer power consumption

WATER

UTILITIES



Cooling water
filter resistance

YOU CAN IMPROVE EMISSIONS

Why care about emissions?



01-12 NOV 2021
GLASGOW
COP26
IN PARTNERSHIP WITH ITALY

lightsource bp

TotalEnergies

Eni inks deal to acquire 1.2-GW wind, solar portfolio in Spain

July 26 (Renewables Now) - Madrid-based private equity manager and real assets investor Azora said Monday that it has signed an agreement to sell a 1.2-GW wind and solar portfolio in Spain to Italian oil-and-gas major Eni SpA (BIT:ENI).

The portfolio adds up to 230 MW of wind and some 1,000 MW of solar energy capacity. The wind power capacity is split between three operational onshore wind farms and one project under construction. On the solar side, the portfolio has five large-scale projects in advanced stages of development, Azora said.

Solar park in Spain. Author: Som Energia Cooperativa. License: Creative Commons. Attribution 2.0 Generic

Market & Companies



- Operational Cost / Blowdown
- Energy Consumption
- Material Consumption
- Emissions Charging
- EU Taxonomy / ESG
 - Emissions taxation



Company image /
Share Price

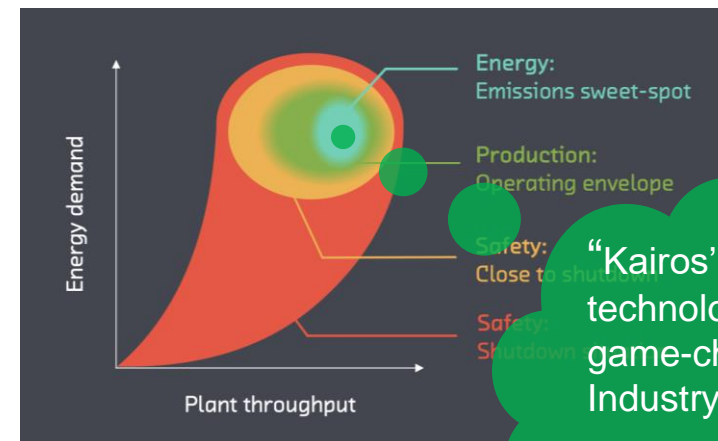
We all care about emissions....



Situational awareness

“This solution is something that has been **really** missing – I have not seen any product like this before”

Head of Digitalization,
Equinor



“Kairos’ technology is a game-changer for Industry as whole’

Consultant,
McKinsey

Today's Control Rooms

Operating Mode ‘guessed’ by alarm situation & production stability

No support for mode change

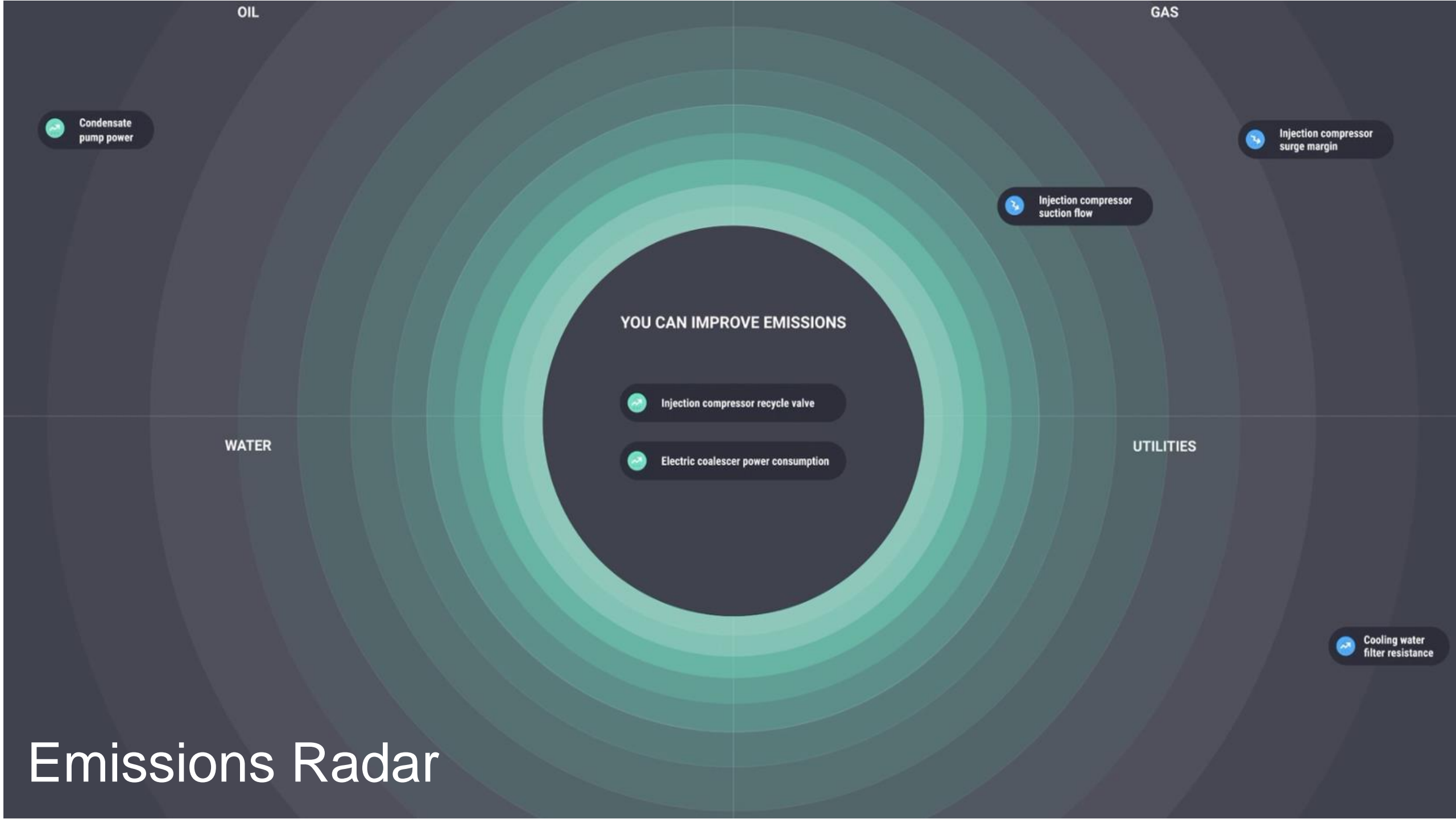
Focus on safety & production rather than energy consumption

Future Control Rooms

Clear(er) understanding on objectives based on operating mode

Focus ‘operating culture’ around
energy optimization &
reduced emissions





Emissions Radar

Ranked Causes

HP Flare In
HP Flare system to Recompression

CORRECTIVE ACTIONS

Manage producing wells to prevent gas surge to the stabilisation separator

Increase compressor capacity

Gas inlet 20VA003
Flow of gas to stabilisation separator

Gas to Recompression
Gas flow to 1st stg. suction cooler from Stabilisation ...

Flow through 20LV0177
20VA001 Interface level control valve

20VL0177
Inlet separator Oil level ctrl valve

Well Stream to 20HB001A
Multiphase flow from Manifold to 20HB001A

20VL0176
Inlet separator Oil level ctrl valve

Surge mode
23KA001 1st stage Recompressor

Discharge Enthalpy
23KA001 1st stage Recompressor

[VIEW MORE CAUSES](#)

Correct

VERIFY CAUSE

- HP flare pressure high?
- Compressor low operating point vs surge line?
- Low gas injection rate?

Verify

23VA001
Stabilisation separator pressure

20PT0303 Discharge pressure

PREVENTION STEPS

- Open gas injection choke (if possible)
- Open compressor anti-surge valve (manual)
- Flaring (last resort - emissions)

Prevent

Ranked Consequences

SAFETY CRITICAL 1

23PT0082
Suction Pressure

PRODUCTION CRITICAL 6

23PT0303 Pressure

23KA001 High Power Trip
23KA001

20VA003 Flaring

Discharge pressure
23KA001 1st stg. Recompressor

ENVIRONMENTAL 2

3 CONFIRMED OBSERVATIONS

3 CURRENT 1 RECENT 4 STALE

Equipment status Rewind

20PT0303 Discharge pressure

8 min ago

23KA001 Speed
Compressor speed

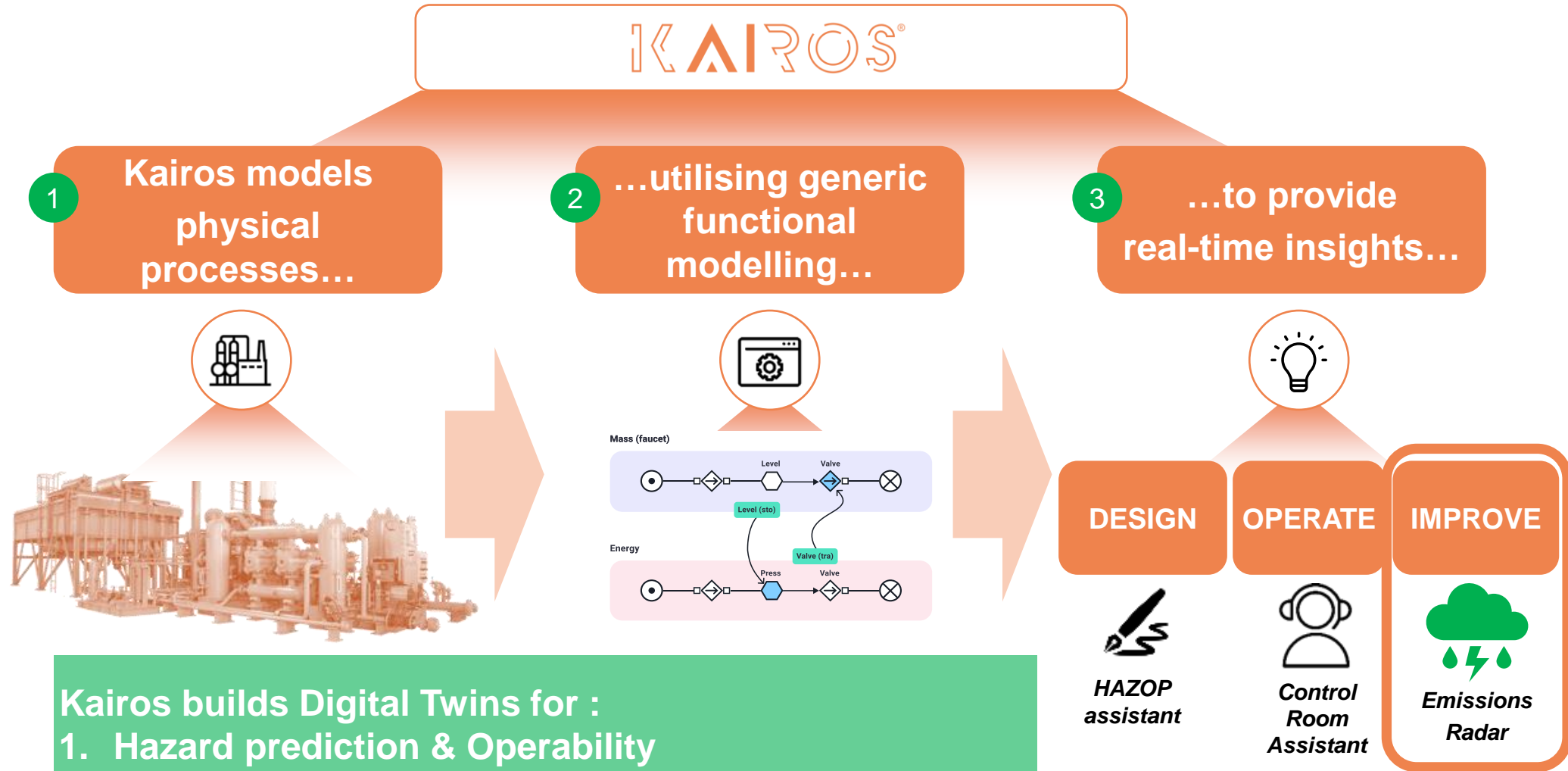
17 min ago

23VA001
Stabilisation separator pressure

Observations from sensors

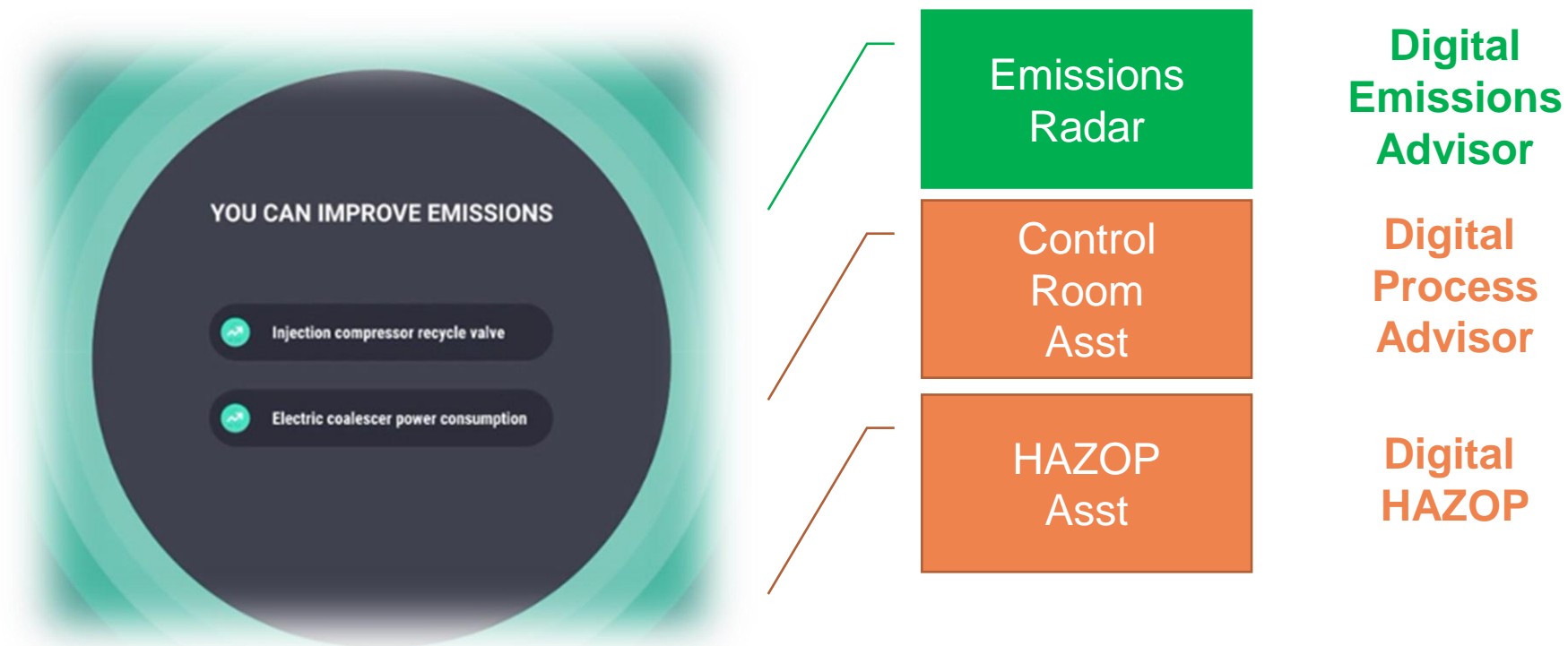
15:45 15:50 15:55 16:00 16:06 16:10 16:15

Explainable AI Models - Predict Potential Operational Hazards



What is Emissions Radar?

Assisting
Operational
Excellence



Our Journey - Workshops / Schedule

Assisting
Operational
Excellence

Onboard

Model

Validate

Deliver

IT

Process
Objectives

12 weeks to Value

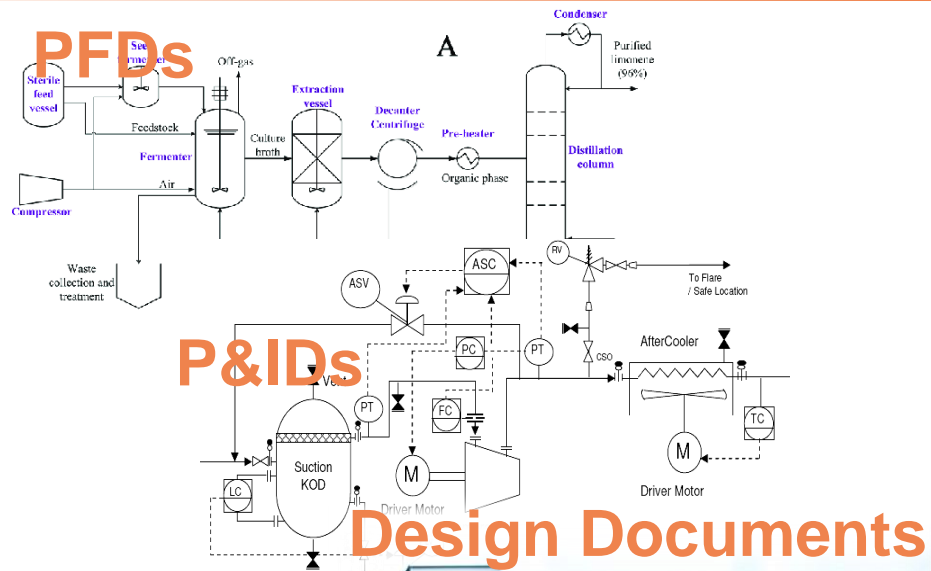
Validate

GO
LIVE!



What do we need?

Assisting
Operational
Excellence



Operational Knowledge



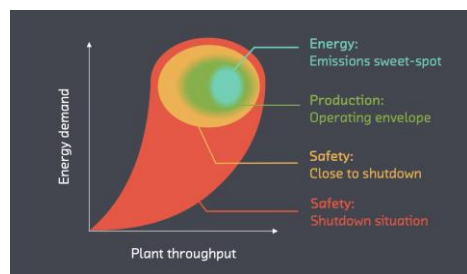
Our Future Missions!



Environment



Save Money



lightsource bp



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Market & Companies



KAİROS
TECHNOLOGY

The Emissions Radar Company!

We care about emissions....!



Why Kairos Tech?

- **Monitor your barriers** - safe, 'clean', maximized production
- **Control what you emit** - improve operational excellence with sound advice
- **Digitise** your design documents – ***one*** technology package
- **Unique insights** using existing design documentation
- **'Out of the box' technology** – Speed-to-Value



We are defined by our Customers...

Pilots & Clients



For more info.....

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Tusen Takk !
Thank you !
Mange Tak !





That's all Folks!