



AVEVAWORLD
PARIS

EcoStruxure Industrial Advisor – Predictive Energy

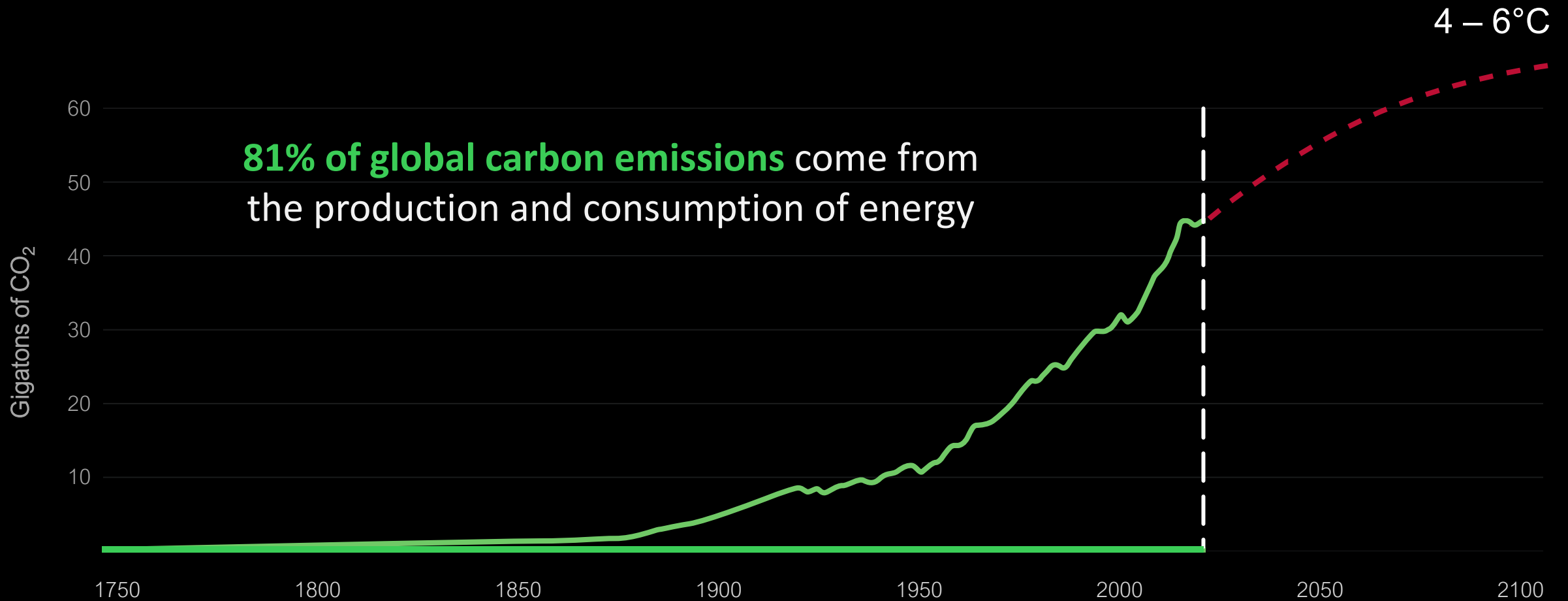
Carlos Javaroni

VP Industrial IoT & Edge Solutions, Schneider Electric

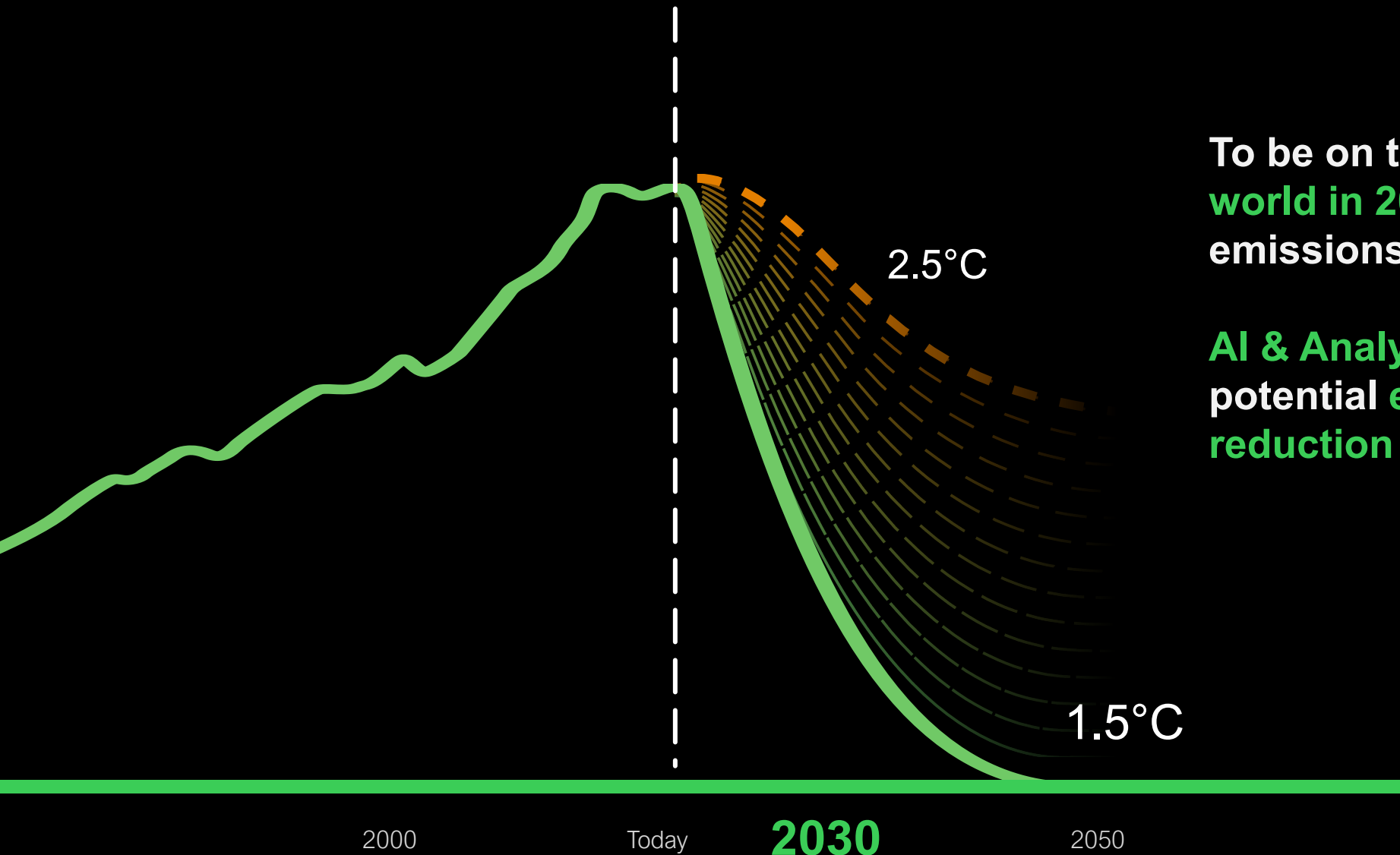
AVEVA World 2024, October 16th 2024



To tackle the climate crisis, we must **decarbonize**



Global Carbon Budget (2019); IPCC (2020), ETC, Making clean electrification possible (2021), Schneider Electric Research Institute
View includes industry process emissions, changes in land uses, such as deforestation



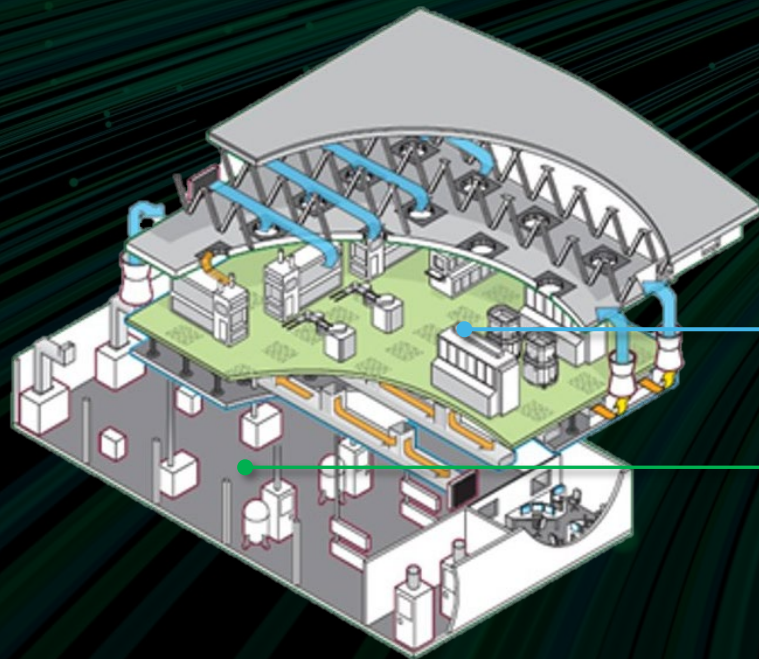
To be on track for a **net zero world in 2050**, we need to halve emissions this decade

AI & Analytics can lead to a potential **energy consumption reduction of up to 20%**

Challenges and expectations of energy-intensive industries

- **Decrease** energy consumption and **energy costs**. **Reduce CO2 emissions** to meet environmental targets
- Successfully implement and scale early **AI/Machine Learning solutions**
- **Empower and train domain experts** to work in a self-service manner
- **Create a common data platform** to overcome inefficient energy reporting
- Provide **end-to-end digital solution** and **deployment in less than 6 months**
- Achieve **ROI in less than a year**

New opportunity for optimizing energy consumption in Utility Systems



Up to 50% of energy
is consumed by the
Process

Up to 50% of energy
is consumed by the
Utility Systems

Production process is typically optimized first:

- Maximize product throughput
- Ensure yield quality
- Improve overall efficiency

Main Utility Systems energy savings opportunities

- Chilled Water Production (Chillers, Cooling Tower, Pumps)
- Air Handling Units (AHU)
- Make Up Air Units (MAU)
- Compressors
- Steam generation and utilization
- Hot water and warm water system

EcoStruxure Industrial Advisor – Predictive Energy

Optimize your plant's utility energy consumption and drive sustainability across your enterprise

Implementation of EcoStruxure Industrial Advisor – Predictive Energy

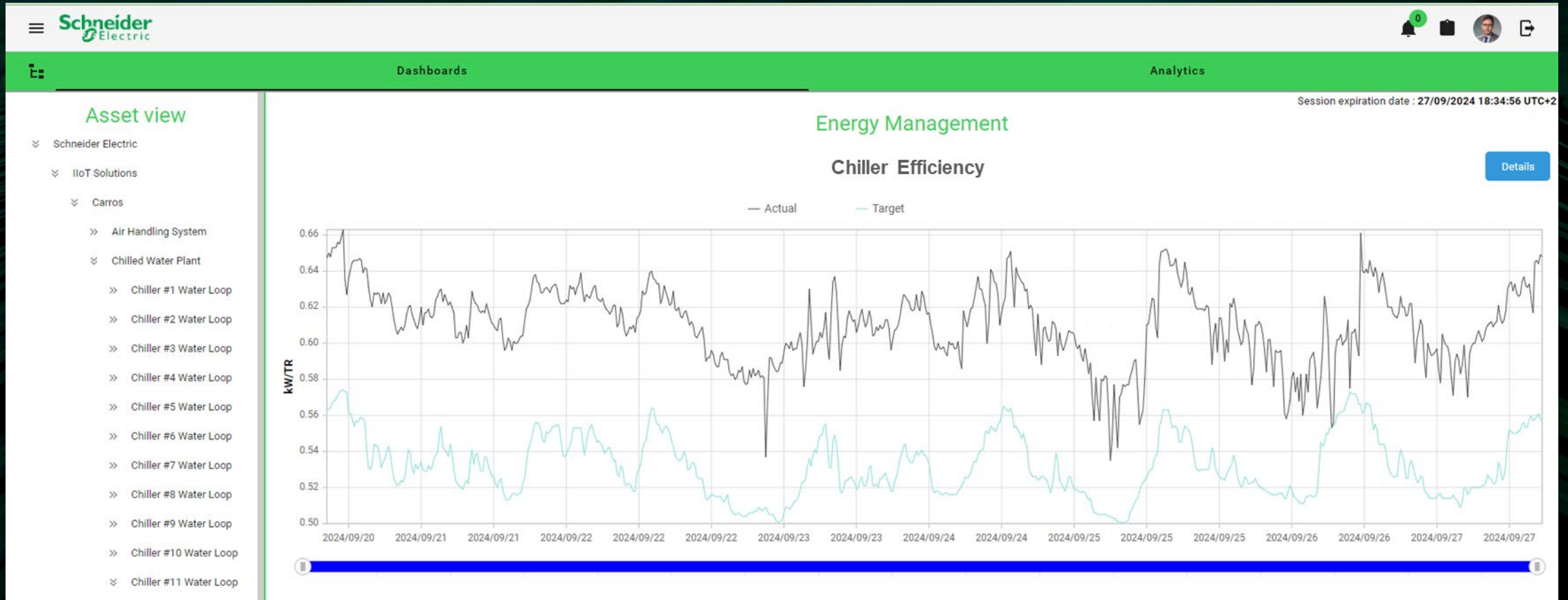
1

**Collect and
contextualize**

2

**Benchmark
and analyze**

Visualize your actual consumption and ensure you are not consuming more than necessary



Implementation of EcoStruxure Industrial Advisor – Predictive Energy

1

**Collect and
contextualize**

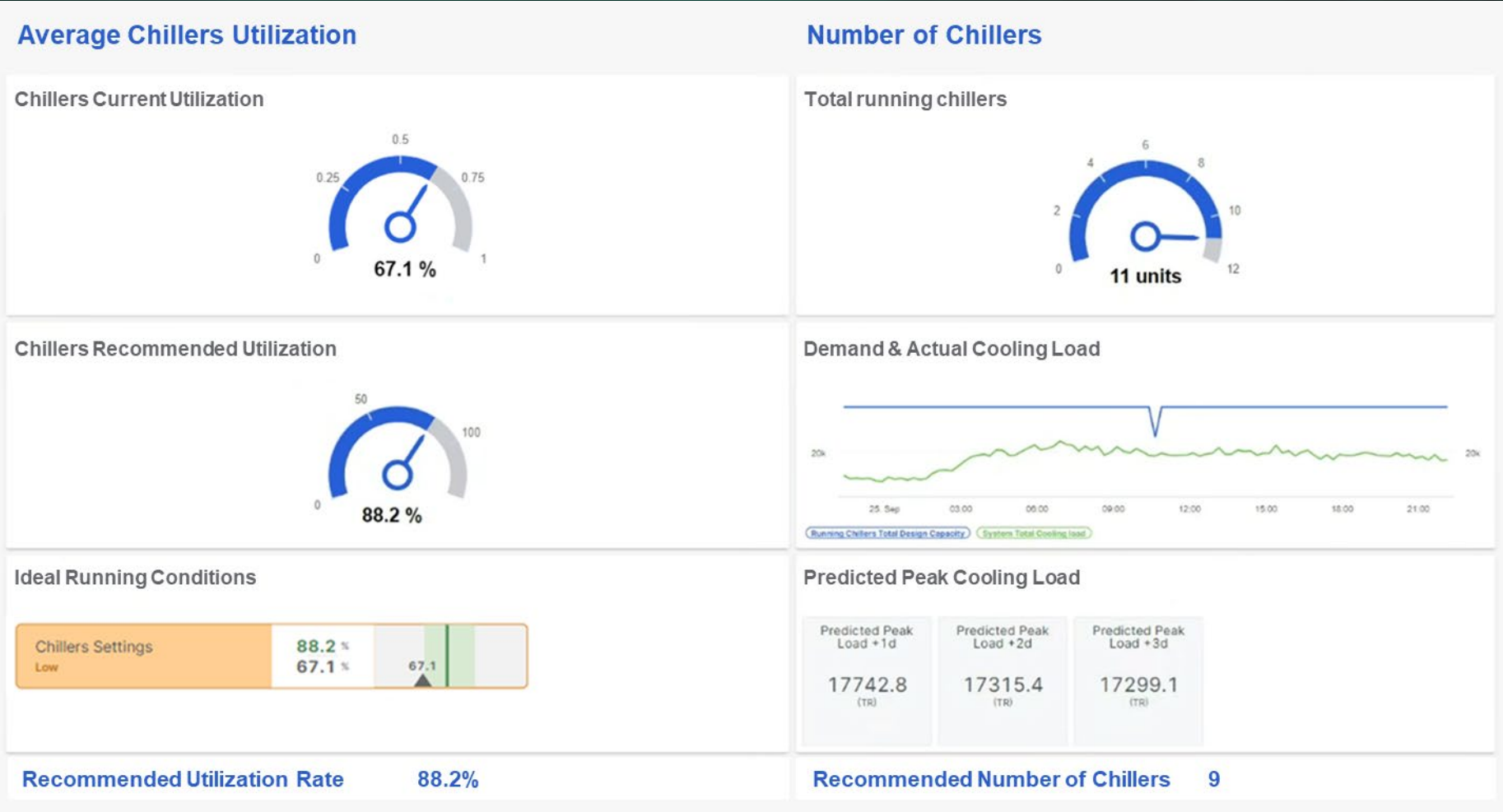
2

**Benchmark
and analyze**

3

**Provide AI-based
recommendations**

Leverage AI-based recommendations to optimize your equipment's utilization



Implementation of EcoStruxure Industrial Advisor – Predictive Energy

1

**Collect and
contextualize**

2

**Benchmark
and analyze**

3

**Provide AI-based
recommendations**

4

**Transfer new
settings to edge**

Automated transfer of new settings to operational level by Energy Manager

Best Settings to Apply
Calculated 2024-08-20 18:55:16

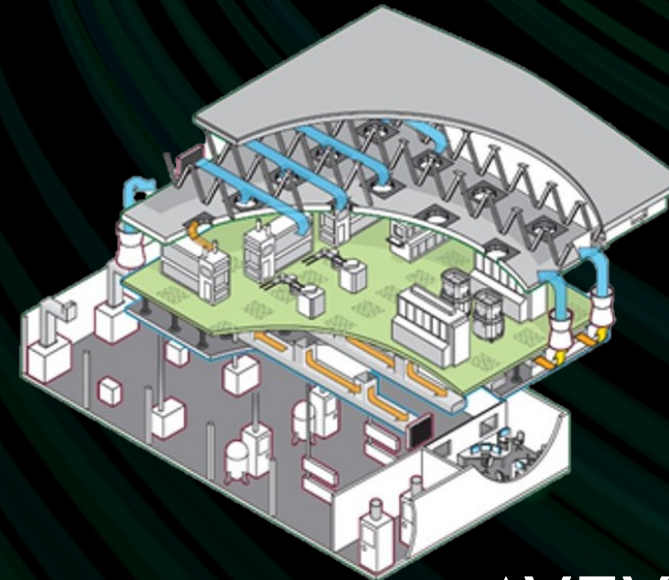
Name	New Settings to apply	Cloud to Edge (Channel)	Instruction	Status
Ideal Number of Chillers	- 2	Edge Carros #1	<input type="button" value="Send"/>	
Temperature Chillers	29°C	Edge Carros #2		Acknowledged
Valve Position	3	Edge Carros #1		Acknowledged

Send the new settings:
Reduce the number of chillers by 2

1

Acknowledgement of the modifications:
The number of running chillers has been reduced by 2

2



Implementation of EcoStruxure Industrial Advisor – Predictive Energy

1

Collect and contextualize

2

Benchmark and analyze

3

Provide AI-based recommendations

4

Transfer new settings to edge

5

Monitor energy performance

Monitor and confirm energy performance and savings in real-time



Implementation of EcoStruxure Industrial Advisor – Predictive Energy in less than 6 months

1

Collect and
contextualize

2

Benchmark
and analyze

3

Provide AI-based
recommendations

4

Transfer new
settings to edge

5

Monitor energy
performance

A complete turnkey open, scalable and cybersecure solution leveraging software and services

Leading Global Semiconductor Manufacturer - Case Study results

1+ M\$

Annual savings in 1 production site only



Increases **profitability** thanks to energy costs savings (*matching the projections of the pre-study*)

18,000 MWh

Energy savings a year per production site



Help meet ambitious sustainability plans: decrease **energy consumption** by 10% and **carbon emissions** by 40%.

~10 kTons CO₂

Reduction of about 10 kTons CO₂ /year /plant



< 6 months

ROI in less than 6 months



Accelerates the IloT solutions deployment and **maximizes ROI with a pre-packaged solution**

Leveraging CONNECT to improve sustainability and energy management



EcoStruxure Industrial Advisor –
Predictive Energy



CONNECT

Service & usage management:
monitor budget, consumption, and permissions

Data services:
aggregate, share, and contextualize

Visualization services:
rich persona-based experiences

Modeling & analytics:
robust calculations using AI and ML

Application development services:
solutions to enhance customer use cases



 Plant #1

 Plant #2

 Plant #3

 Plant #4

Data sources: Manual Data, Data Bases, Sensors, Actuators, PLC, DCS, Scada, Historian, MES, CMMS, PLM, ERP

Our approach to enable energy savings and sustainability

Step 1 Solution definition & Value estimation

- Engage with business and technical stakeholders
- Understand customer context, processes and pain points to confirm applicability and scope of the solution
- Estimate and model potential savings
- Jointly create a solution scope and implementation plan insuring data, infrastructure and organizational readiness

Step 2 Pilot & Value validation

- Implement the proposed solution in a pilot site
- Training of power users
- Findings report to confirm the expected business value
- Plan value expansion to other areas of the site and enterprise

Step 3 Scale rollout & Value tracking

- Customer enablement plan
- Rollout enterprise wide
- Track the energy savings
- Plan for future areas of value from industrial AI/ML

The Equation for the Future

$$\begin{array}{l} \text{Digital} \\ \text{Automation} \\ \text{Software} \\ \text{Data, AI} \end{array} + \begin{array}{l} \text{Electric} \\ \text{Energy} \\ \text{Decarbonization} \end{array} = \underline{\text{Sustainable}} \\ \text{Green and Smart}$$

Thank you, Questions ?



**Carlos
Javaroni**

VP Industrial IoT & Edge Solutions
Schneider Electric, Boston, USA



Welcome to our Predictive Energy booth in the Innovation Zone



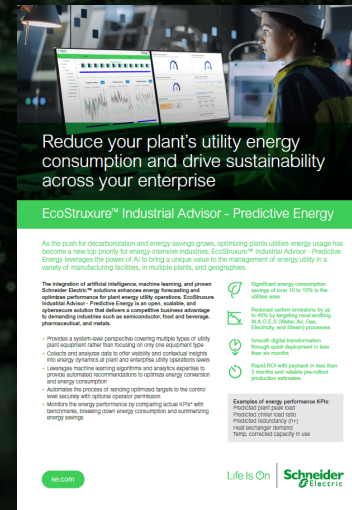
Book a demo or a
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AVEVA World App*

Laurent CHAN
Pierre LEBAS
or “**Schneider Electric**”

*From the Mobile app home page or the top navigation bar
you can access the Speaker and Attendee lists.



Scan the QR code to get the EcoStruxure Industrial Advisor – Predictive Energy brochure



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