Cheap & Clean: Is it possible?

Presented by: Emilie Ditton, MMM Segment Leader, Pacific

Life Is On | Schneider Electric

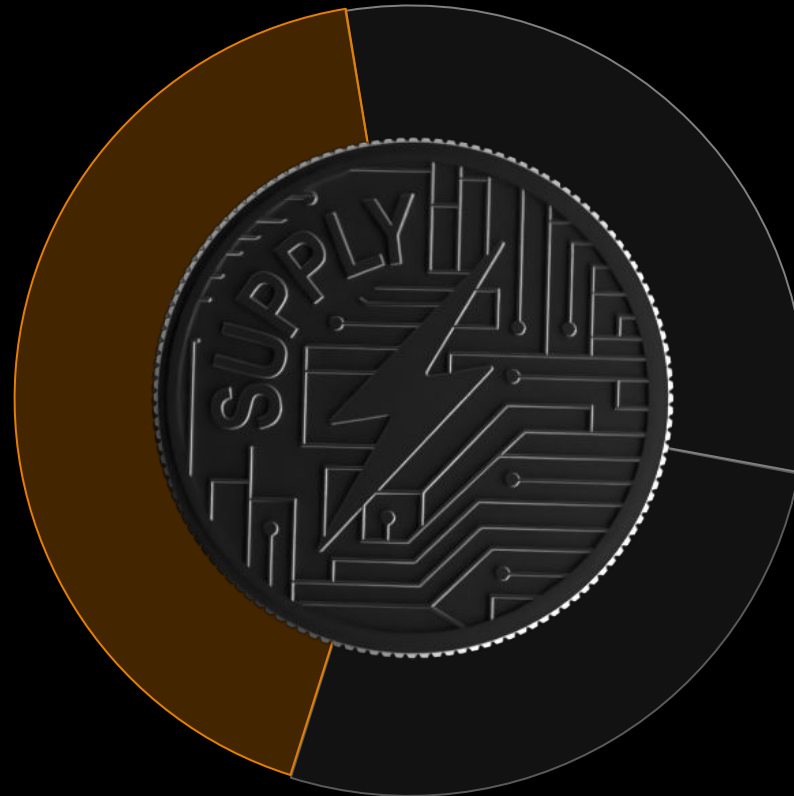# **Decarbonizing supply** is just one side of the energy coin…

Replace

energy supply

45%*

Offsite renewables purchasing
PPAs

Onsite renewables generation
Solar, microgrid, storage

Life Is On | Schneider Electric

We need to look at both sides… and tackle energy demand

Design & Build for Low Carbon
3D-6D BIM design to reduce embodied carbon

Measure, Monitor & Save
Connected systems and software for
real-time data, insights and automation

Choose green by design, with extended
life efficient usage, clean disposal options

Electrify Everywhere
From transport to heat to industrial processes…
Reduce fossil fuel demand by transitioning to
electric

The most decarbonised electron is one that is not used

Reduce
for efficiency and circularity
25%

Electrify
processes
30%

*Contribution to net-zero energy by 2050

Digita**l** + Electri**c** = **Sustainable**

For Efficiency | For Decarbonization | Green and Smart Energy

Life Is On | Schneider Electric

3 key **steps**

STRATEGIZE   **DIGITIZE**   **DECARBONIZE**

Step 1: **Define decarbonisation strategy** to meet your ambition

STRATEGIZE

MEASURE
enterprise baseline

CREATE
decarbonization roadmap

STRUCTURE
Program & governance

COMMUNICATE
commitment

- Enterprise Data Management Program

- 1.5° trajectory
- Decarbonization levers
- Roadmap & actions

- Strategy
- Governance
- Program Funding

- Internal engagement
- External communication
- ESG Reporting & Disclosures

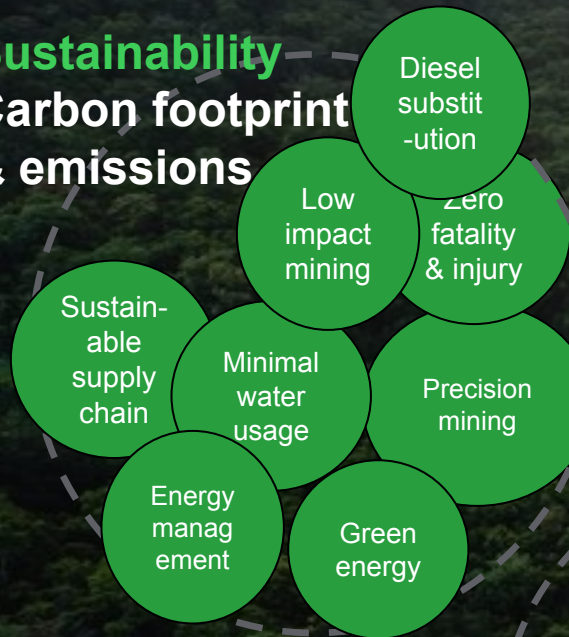## EQT is First Private Markets Firm to Set Science Based Targets

🕐 OCTOBER 14, 2021

- *EQT accelerates its journey to address climate change*

- *Schneider Electric partnered with EQT to develop SBT strategy and roadmap for implementation*

Life Is On | Schneider Electric

Decarbonisation will require strategies in many different areas

Sustainability
Carbon footprint & emissions

- Diesel substit-ution
- Low impact mining
- Zero fatality & injury
- Sustain-able supply chain
- Minimal water usage
- Precision mining
- Energy manag ement
- Green energy

Efficiency
Production targets consistently with fewer resources & waste

- Energy efficiency
- Minimal inputs & fuel
- Integrated planning & execution
- Efficient asset opera-ti on
- Process visibility

Delivering sustainability, efficiency, reliability

Resiliency
Responsiveness with visibility, Insight, Automation, Control

- Demand led mining
- Operat -ional control
- Quality led differ-enti ation
- Real time visibility
- Ore visibility

60% improvement: 3 – 5 yrs
1. **Operational efficiency** - Improve & take your operations to top-quartile levels
2. **Green energy** - Renewable PPAs and investment in renewables capacity
3. **Sustainable fuels** - Switch to drop-in sustainable fuels.

Scope 1: 40 – 50% of emissions

- Haulage: Alternative fuels/electrification
- Operational efficiency
- Process electrification and optimisation

Scope 2: 35% of emissions

- Alternative fuel sources
- PPAs
- Renewables capital investments

Scope 3: 75 - 95% of emissions

- Decarbonising the supply chain
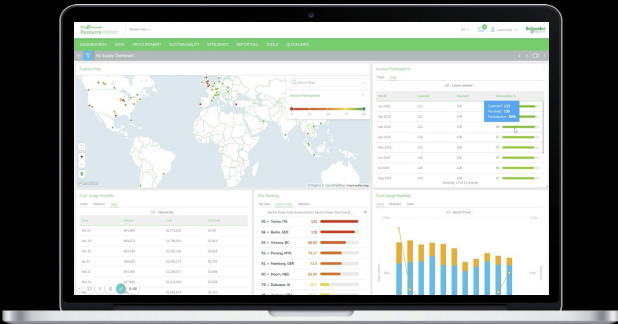
Life Is On | Schneider Electric

Step 2: Digitize to create **visibility, intelligence and automation & a single source of truth** for energy, production and sustainability data

DIGITIZE

Eco**Struxure**™ Resource Advisor

35B
Digitized data points

125M+
Metric tons of CO_2 managed

100k+
Users across 140+ countries

MONITOR
resource usage and emissions

IDENTIFY
saving opportunities

ACT & REPORT
and benchmark progress

- Energy usage, resource consumption & emission tracking
- Integrate with production control and operational monitoring
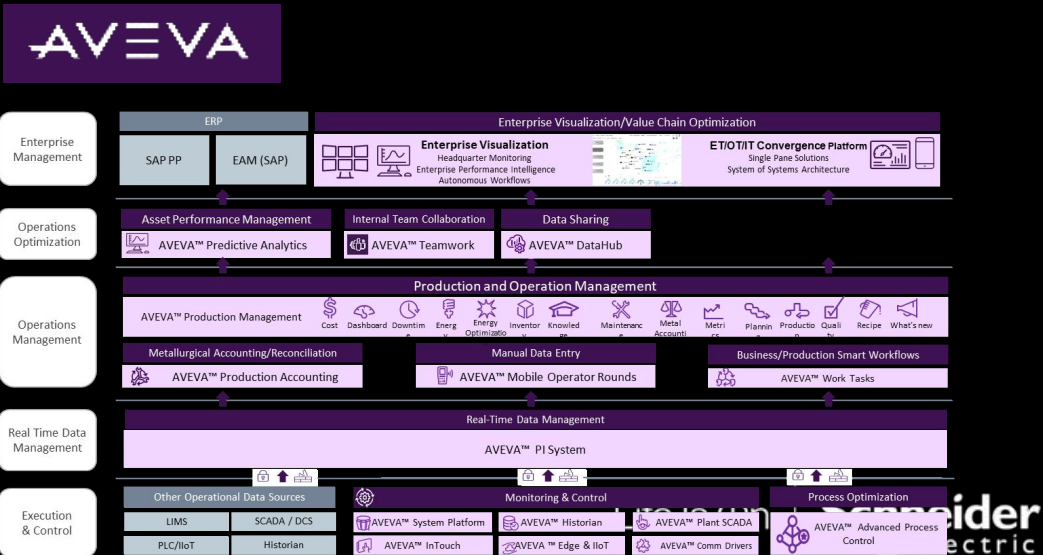- Enable digital twin of power and process

- Opportunity assessment for emissions & cost reduction

- Goal progress tracking
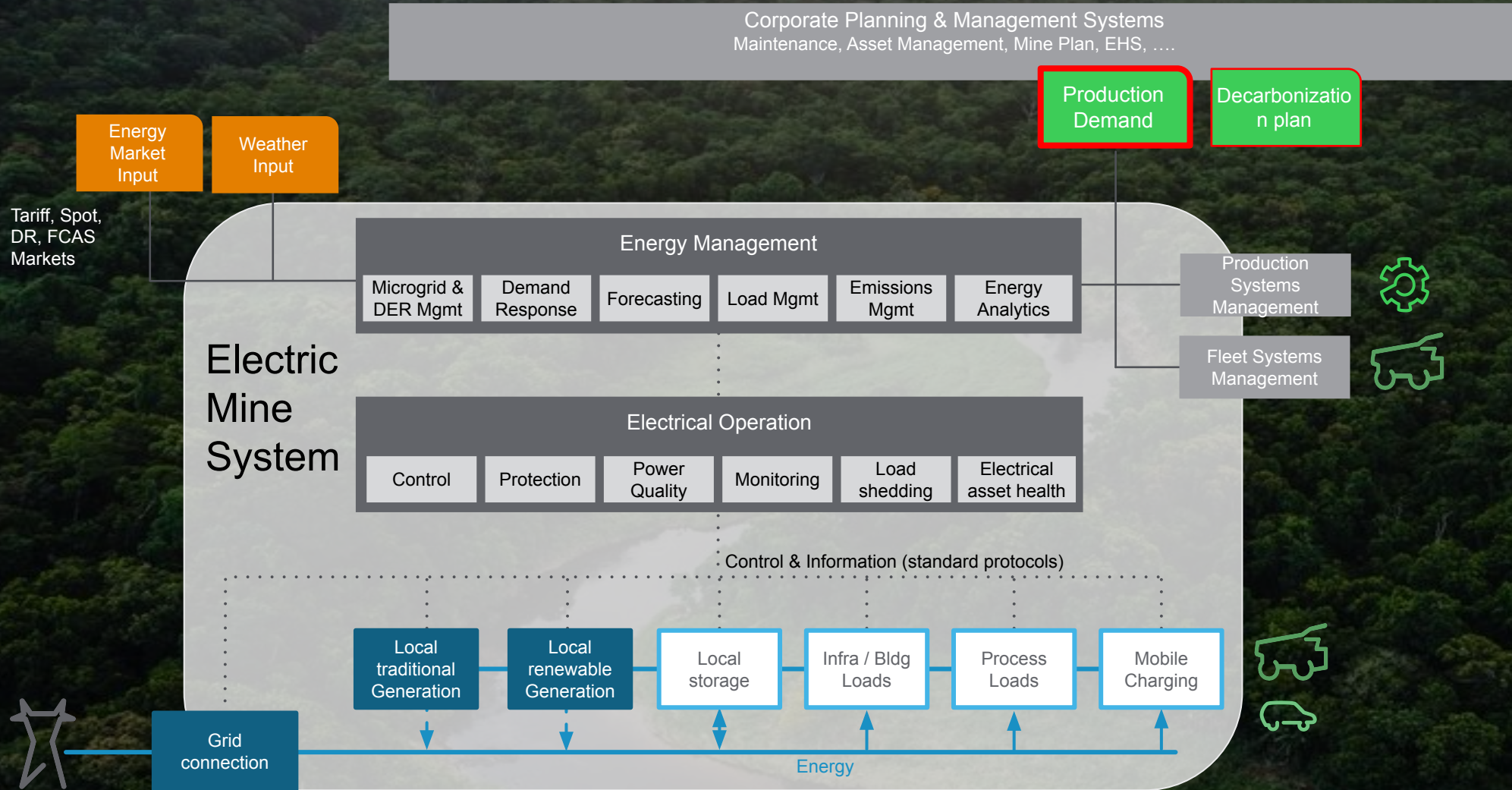- Streamlined ESG reporting
- Peer benchmarking

Data, Insight, intelligence, Automation and Action

AVEVA

Enterprise Management	ERP	Enterprise Visualization/Value Chain Optimization
	SAP PP / EAM (SAP)	Enterprise Visualization — Headquarter Monitoring, Enterprise Performance Intelligence, Autonomous Workflows / ET/OT/IT Convergence Platform — Single Pane Solutions, System of Systems Architecture
Operations Optimization	Asset Performance Management — AVEVA™ Predictive Analytics	Internal Team Collaboration — AVEVA™ Teamwork / Data Sharing — AVEVA™ DataHub
Operations Management	Production and Operation Management — AVEVA™ Production Management (Cost, Dashboard, Downtim, Energ, Energy Optimizatio, Inventor, Knowled, Maintenanc, Metal Accounti, Metri, Plannin, Productio, Quali, Recipe, What's new)	
	Metallurgical Accounting/Reconciliation — AVEVA™ Production Accounting	Manual Data Entry — AVEVA™ Mobile Operator Rounds / Business/Production Smart Workflows — AVEVA™ Work Tasks
Real Time Data Management	Real-Time Data Management — AVEVA™ PI System	
Execution & Control	Other Operational Data Sources (LIMS, SCADA / DCS, PLC/IIoT, Historian)	Monitoring & Control — AVEVA™ System Platform, AVEVA™ Historian, AVEVA™ InTouch, AVEVA™ Edge & IIoT, AVEVA™ Plant SCADA, AVEVA™ Comm Drivers / Process Optimization — AVEVA™ Advanced Process Control

Internal

Green Energy: A complex and digitally enabled system

Corporate Planning & Management Systems
Maintenance, Asset Management, Mine Plan, EHS, ….

Production Demand

Decarbonization plan

Energy Market Input

Weather Input

Tariff, Spot, DR, FCAS Markets

Electric Mine System

Energy Management

Microgrid & DER Mgmt	Demand Response	Forecasting	Load Mgmt	Emissions Mgmt	Energy Analytics

Production Systems Management

Fleet Systems Management

Electrical Operation

Control	Protection	Power Quality	Monitoring	Load shedding	Electrical asset health

Control & Information (standard protocols)

Local traditional Generation	Local renewable Generation	Local storage	Infra / Bldg Loads	Process Loads	Mobile Charging

Grid connection

Energy

✎ Planning & Design   🚜 Build   ⚒ Operate & Maintain

Life Is On | **Schneider Electric**

Step 3: Execute decarbonization strategy with **4 key levers**

DECARBONIZE

ELECTRIFY
operations

- Mobility
- Industry & Building processes
- Microgrid

REDUCE
energy use

- Digitization
- Efficiency
- Optimization

REPLACE
energy source

- Integrated sourcing
- Renewable energy
- Carbon credits

ENGAGE
value chain

- Supplier Decarbonization
- Circularity
- Design & Build for Sustainability

Life Is On | Schneider Electric

Supply Chain Decarbonization Based on Experience

Schneider Electric | GMG

Energize Program wins 2023
CPHI Pharma Award

8+ Procurement Programs

2022

pep+ pepsico positive

SUSTAINABILITY The Zero Carbon Project **Zero Carbon**

2023

CATALYZE

RENEWAY YOUR WAY TO RENEWABLE ELECTRICITY

Confidential

Materialize

2024

P&G ACCELERATE

9+ Supply Chain Programs

3+ TWh Electricity Demand Represented in Cohorts

2,000+ Engaged Supplier Companies

12+ Buyers' Cohorts in Process

Gartner Top 25 in 2023 #1 Supply Chain Award

Introducing Materialise

Materialize Program

Digital Platform | Real time data | Program Schedule

Engage Suppliers

Supplier Onboarding | Educational Curriculum

Schneider-enabled Supplier Support

Emissions Reductions Levers

Accelerate Decarbonization

Supplier Scope 1 & 2 Inventories	Emissions Reductions Targets
Renewable Electricity	Decarbonization Roadmaps
Energy Efficiency	Electrification
Digitization of Sites	Circularity

Schneider Electric

STRATEGIZE

DIGITIZE

DECARBONIZE

Climate, energy and energy domain expertise

Strategy, disclosure, communications

- Target Setting & Benchmarking
- Reporting (SBTi, CDP, etc.)
- Decarbonization Roadmap
- Digital Strategy

Global Energy Market & Sustainability Analysis

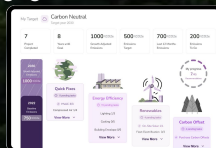**Zeigo Network**
by Schneider Electric

- Clean Technology Education & Connection
- Carbon Offsets Markets
- Renewable Energy Markets
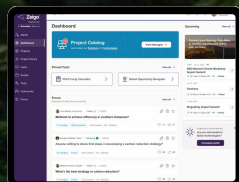
Scope 3 Decarbonization & Supply Chain Engagement

Zeigo Activate
by Schneider Electric

- Scope 3 assessment
- Implementation roadmap
- Supplier engagement program
- Carbon tracking
- Decarbonization roadmap & marketplace
- Built for small/medium companies/suppliers

Leading lifecycle software and digital services

Enterprise Sustainability Cloud

EcoStruxure™ Resource Advisor

128M+

Metric tons of CO_2 managed

Asset Optimization and Insight

- EcoStruxure Power Monitoring Expert
- EcoStruxure Energy Hub
- Ecostruxture Microgrid Advisor
- Ecostruxture Plant Advisor
- EcoStruxure Augmented Operator Advisor
- EcoStruxure Maintenance Advisor

Lifecycle software

etap

AVEVA

Electrical Design

Design, build, operate and maintain

No. 1 in energy management

Replace

Zeigo Power
by Schneider Electric

16GW+

PPAs advised with our clients[1]

EcoStruxure Microgrid Operation

Power Purchasing Agreements

Electrify

EV Solutions

Poewr infrastructure and optimization expertistise

Reduce

Power Logic Power Meters

Ecostruxture Process Expert

- Unified Operating Center
- Data Management Platform
- Demand Side Management
- Microgrid Management
- Energy Mgmt & Control Systems
- DER Management

Life Is On | Schneider Electric

1 2014 reference year