Sustainability Lead's Roundtable

Tuesday 1st February 2022
Schneider Electric, 2nd Floor, 80 Victoria Street,
London SW1E 5JL

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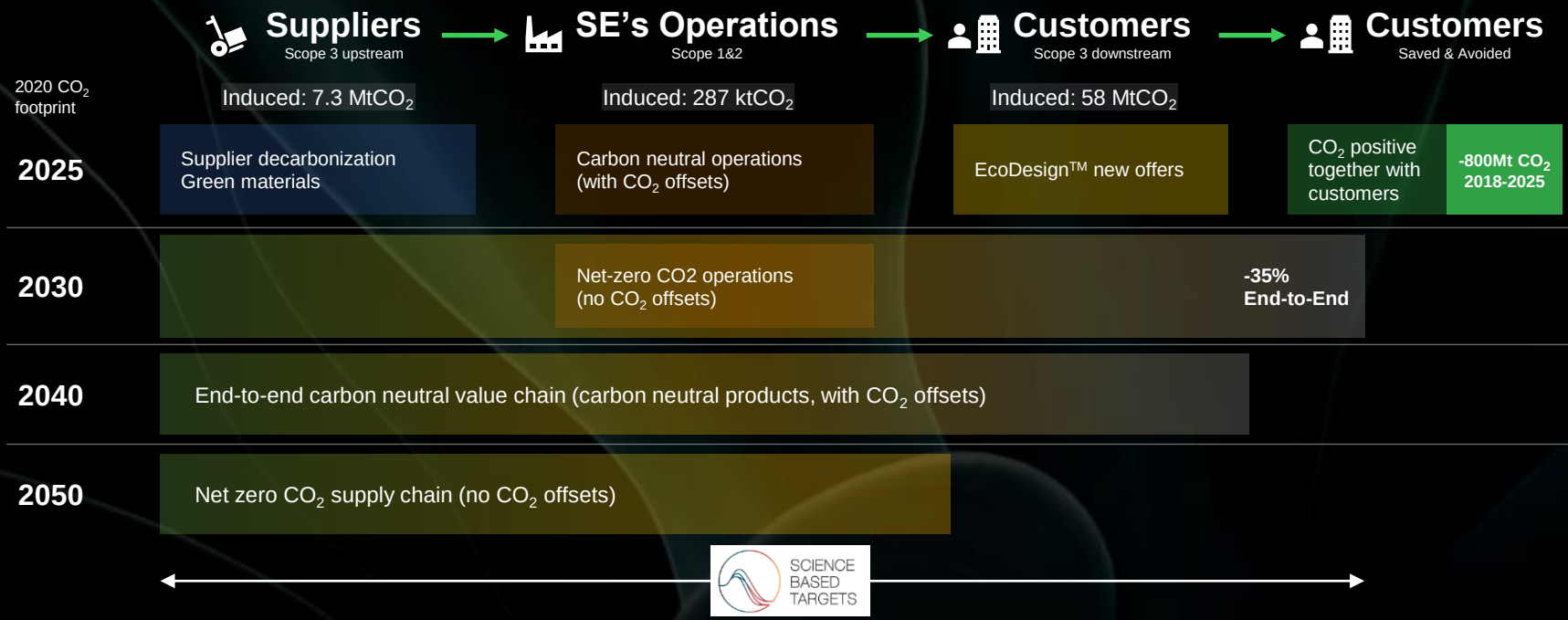
Schneider Electric Carbon Pledge

Leading the way towards the 1.5°C climate objective



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* enabled by digital technologies

Sustainability score (Emissions focused)

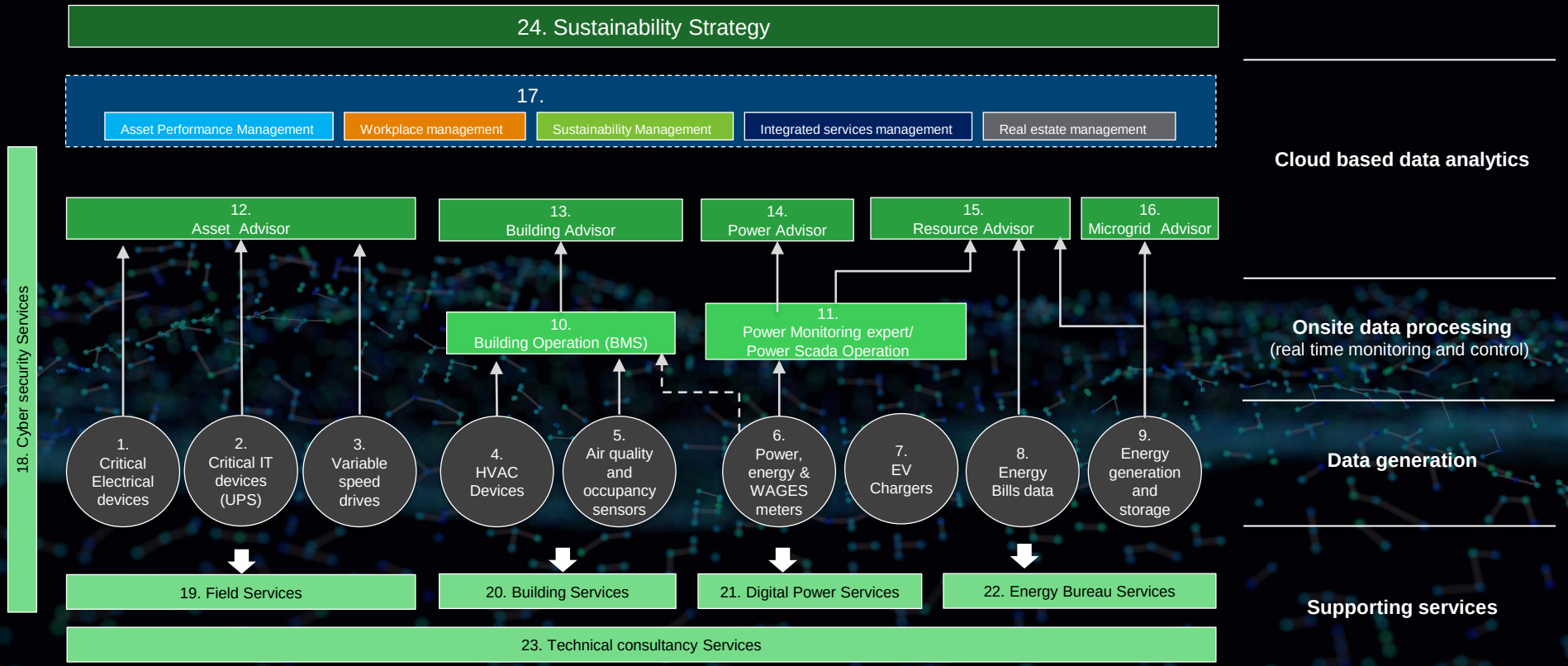
Assessment criteria / Score		1 Starting	2 Planning	3 Emerging	4 Leading	5 Best in class
○ Scope 1	• Targets (Science based Targets initiative)	✓ Targets not set yet	✓ Initial target set a few years ago ✓ Not aligned with Climate Science	✓ Targets aligned and validated to 1.5c SBT	✓ On track to achieve scope 1 & 2	✓ Scope 1 and 2 Achieved ✓ Actively working on 3
	• Electrification	✓ No work started for decarbonizing primary business operations	✓ Feasibility studies and scenario modelling done for decarbonizing primary business functions	✓ Plan in place for decarbonizing primary business operations in the next 5-10 years	✓ Corporate PPA in Place ✓ Primary business functions do not use fossil fuels	✓ Zero fossil fuel used across all business operations
	• Thermal	✓ Fossil fuel based traditional thermal systems in place ✓ No plan for transition	✓ Feasibility study in progress for moving from fossil fuels to low carbon thermal systems	✓ Transition plan to Low carbon/ Biomass/ Heat pumps in place, execution over 5-10 years	✓ Biomass and Heat Pumps in place for the baseload operation	✓ Zero fossil fuels used for Heating/ Thermal processes
○ Scope 2	• Energy Data Quality/ management	✓ Metering plan not in place ✓ Basic Energy data available for ESG reporting (example: Through BMS or utility)	✓ Clearly defined metering strategy ✓ Comprehensive software in place for Energy data aggregation and efficient use of HVAC systems	✓ Energy data quality ensured through 3 third party validation ✓ Completely modelled Electrical network with a Digital Twin	✓ SW based Power network/ quality management ✓ Condition based monitoring of critical equipment	✓ Sustainability management digitally integrated with other business processes
	• Renewable energy	✓ 0-10% procured energy is RE ✓ Some RE targets but either low % or plus 5 years in future	✓ Up to 50% renewable energy ✓ Energy Attribute Certificates for RE ✓ Plan in place to improve RE purchase quality / mix	✓ Up to 75% renewable energy ✓ Detailed Global roadmap done – Microgrid ✓ Plan to move to Corporate PPAs	✓ 100% Renewable energy used (at site level) ✓ Corporate PPA in Place ✓ Microgrid implemented	✓ 100% Renewable energy used, across entire portfolio ✓ Corporate PPA in Place
	• Offsets	✓ Not aware ✓ Or, Offsetting considered as core to the GHG emissions programme	✓ At early stages of Carbon Neutral Strategy, offsetting required to balance up to 50% of non-renewable energy	✓ Offsetting is an integral part of the Carbon Neutral strategy, up to 25% ✓ Used mainly in unavoidable situation (specific geographies,…)	✓ Offsetting part of the strategy either to 'bridge' in the short term or last resort to neutrality	✓ No offsets required for achieving Net Zero carbon footprint
○ Scope 3	• Net zero	✓ Not started: Targets not defined, no baseline, feasibility analysis ~~not~~ done,..	✓ Baseline/ Targets defined ✓ Carbon accounting framework set up with feasibility studies	✓ Carbon neutral supply chain ✓ Net zero supply chain target in place with metrics	✓ Net Zero Carbon emissions ✓ Plan in place for "CO2 equivalents" reduction	✓ Net Zero emission(CO2 equivalent) across all business operations
	• Supply chain / Circularity	✓ Not started: Supply chain mapping does not include sustainability analysis	✓ Supply chain emissions reduction programme initiated for Tier 1 suppliers ✓ Data collection & reporting in place ✓ End of Lifecycle information tracking for across supply chain	✓ Program expands to Tier 2 /3/… ✓ Toolbox for supplier engagement ✓ Education & governance across multi layer supply chain ✓ Completely digital maintenance records/ tracking	✓ Circularity embedded within all business processes ✓ Tracking mechanism and metrics in place ✓ Condition based monitoring tech used to extend equipment lifecycle	✓ Supply chain metrics linked to other relevant business processes and digitally tracked ✓ Circularity deployed at corporate level linked to recognized frameworks
	• E - Mobility	✓ No company wide policy for e-mobility	✓ Initial feasibility including microgrid analysis and electrical systems simulations ✓ Defined company wide EV policy	✓ Basic charging infrastructure in place ✓ Expansion plan includes Microgrid support	✓ EV strategy aligned to EV 100 ✓ Microgrid infrastructure and DER mgmt. SW in place	✓ E-Mobility included in business operational planning
			MPS Audits, ETAP, Resource Advisor, Green Premium, Building Operation	NeoNetwork, Energy Bureau, ETAP, IB Intel, EV Link	NeoNetwork, PME/PSO, Building-Asset-Power-Microgrid Advisors	Planon (Integrated Workplace management)

Digitisation score

Assessment criteria / Score		1 Outdated	2 Minimum	3 Aware	4 In-control	5 Best in class
○ Management of Electrical Infrastructure	• Network modelling/ documentation	✓ No updated drawings (Single line diagrams, cabling, substations..) ✓ No protection/ fault level study ✓ No maintenance records	✓ Completely up to date drawings (digitized) ✓ Current protection study Legal requirement (UK)	✓ Electrical digital twin – Fully modelled electrical installation enabling simulations ✓ Digital asset register & O&M manuals	✓ Regular data driven reports on Electrical system health check with corrective actions for long term performance improvement	✓ Uniform asset information modelling including electrical devices
	• Hardware infrastructure	✓ No connectivity ✓ Basic energy metering (if any)	✓ Basic sub-metering for primary loads	✓ Advanced metering with comms including WAGES, subtenant billing/ power quality,…	✓ Connected electrical devices (Key breakers/ relays/…)	✓ Completely connected system with digitally managed commissioning/ firmware updates
	• Monitoring & control system	✓ No software for energy/ electrical network management	✓ No software for energy/ electrical network management	✓ Dedicated software for energy data aggregation to complement the BMS ✓ Microgrid mgmt. for onsite renewables (if applicable)	✓ Power quality and network monitoring system ✓ Condition based maintenance for key electrical assets	✓ Electrical devices connected to operational task management ✓ Standardized multisite deployment (portfolio)
○ Maturity HVAC management system	• System modelling/ documentation	✓ No Control Panel drawings ✓ No standardised naming convention/protocol view	✓ Updated Control Panel drawings ✓ Updated Energy Performance Certificate	✓ Semantically tagged data (location/architecture) ✓ Digitized asset register and automated PPM checks	✓ Regular reports on BMS system health check with data driven performance improvement services	✓ Digital twin – HVAC components included in the electrical network model
	• Hardware(sensors) infrastructure	✓ No multipurpose sensors (connectivity) ✓ No interoperability	✓ Energy metering (pulse meters) connected to BMS	✓ Complete IoT Suite with multipurpose sensors	✓ Occupancy and Air quality sensors included in the system	✓ Self healing building: Weather projection to adjust BMS set points
	• Monitoring & control system	✓ No BMS ✓ Or, BMS system no annually maintained	✓ Up-to-date visualization and standardization for HVAC management ✓ Database reflects the field devices ✓ Alarms management	✓ Interoperable systems (IBMS) : Access control + Electrical devices +... ✓ Portfolio monitoring at a system level (HW/ SW lifecycle & upgrade)	✓ Condition Based maintenance of HVAC equipment ✓ Complete data driven predictive maintenance	✓ Integrated workplace management system - HVAC connected to operational task mgmt. ✓ Standardized multisite deployment (portfolio)
○ IT Network and cyber security (Compliance with CAF – Cyber assessment framework)		✓ No strategy in place for Cyber Security compliance of	✓ Basic OT cyber security: Level 1 on CAF	✓ Intermediate OT cyber security: Level 2 on CAF	✓ Advanced OT cyber security: Level 3 on CAF	
			MPS Audits, ETAP, Energy meters, Green Premium, Building Operation	PM-ION meters, ETAP, Field services (IB Intel), Resource-Microgrid- Building Advisor	PME/PSO, Building-Asset-Power-Microgrid Advisors, Pact range of switchgear	Planon (Integrated Workplace management), EcoStruxure Power Commission, ETAP

Full scope of Schneider Digital offer for sustainability

Top segments: Finance, Real Estate, Life Sciences, CPG, Automotive, MMM, Water, Education, Defence, Healthcare



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