



68TH AMEU CONVENTION 2022

Durban International Convention Centre

2 – 5 October 2022

A JUST ENERGY TRANSITION (“JET”) FOR SOUTH AFRICA

GRIDS OF THE FUTURE

A Key Enabler for The Just Energy Transition and Sustainability

Presented by Vladimir Milovanovic

Vice President: Power System

Schneider Electric (Pty) Ltd

Hosted by



Megatrends driving the Just Energy Transition



Data Centres



- Locate data closer to people

Renewables



- Driven by market forces

Electrification



- Commodities for the grid

Digitalisation



- Complexity of grid operation

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Leading to Two Major Transitions

Critical Path of a Just Energy Transition



DIGITALISATION

IoT 10x More new connected apparatus than individuals by 2020
(IHS, March 2016; UNO stats.)

Big Data x5 81 bn GB in 2017, 403 bn GB in 2021
(Cisco)

AI x6 In world-wide expenditure on cognitive systems and AI between 2017 and 2022
(International data corporation)

ELECTRIFICATION

50% Of energy production will be solar or wind-driven by 2050 (BNEF)

30% Of vehicle stocks will become electric by 2040 (BNEF)

x3 In IT electricity consumption between 2020 and 2035 (Schneider Electric)

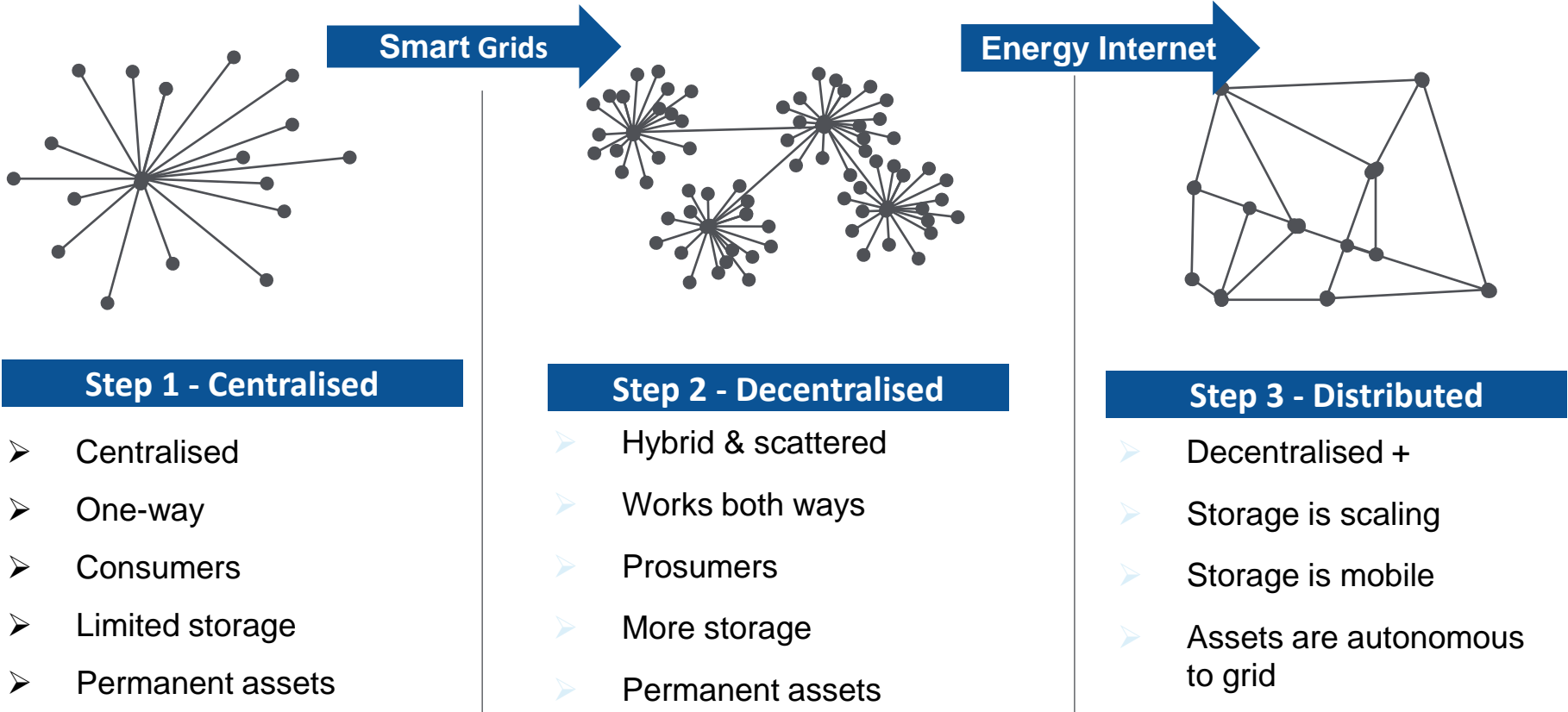
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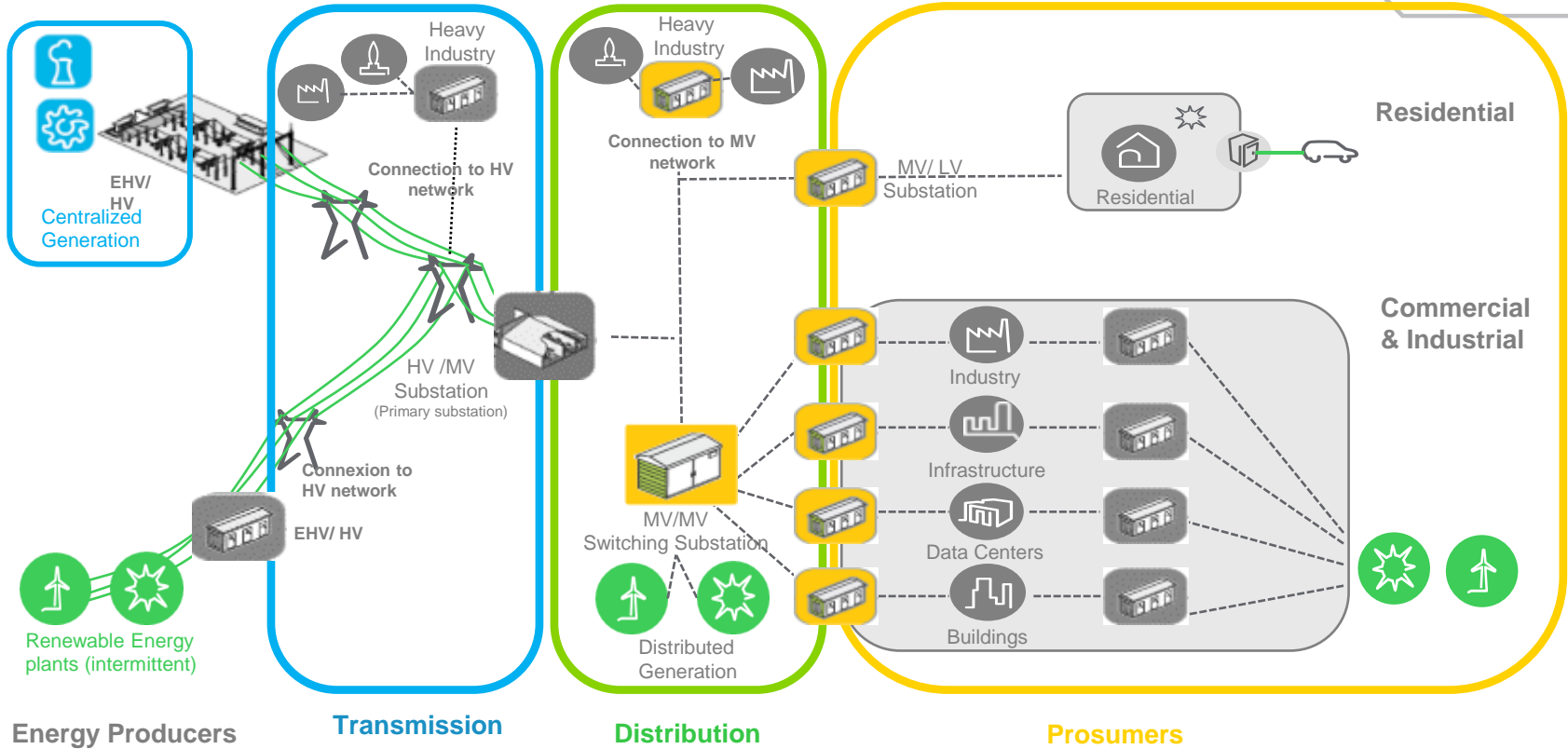
New JET Grid Architecture

A gradual shift from a centralized balancing model to a distributed balancing model



The distribution network is central to the overall JET

- Most DER connections, network losses and power quality issues occur at MV/LV network level



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Gaps in Current Processes of Municipalities

- During the JET


 No connectivity from design to project information

 Most models are not maintained and/or updated

 SCADA and operational systems are not available

 Protection, planning & modelling are independent

 Detailed substation asset model not captured

 No end-to-end network model management


 No protection database and no device integration

 Multiple databases, different models for same asset


 No training platform for real world scenario

 No asset integration model

 No predictive analytics for operational support

 No operational support platform

 No platform for future DER integration

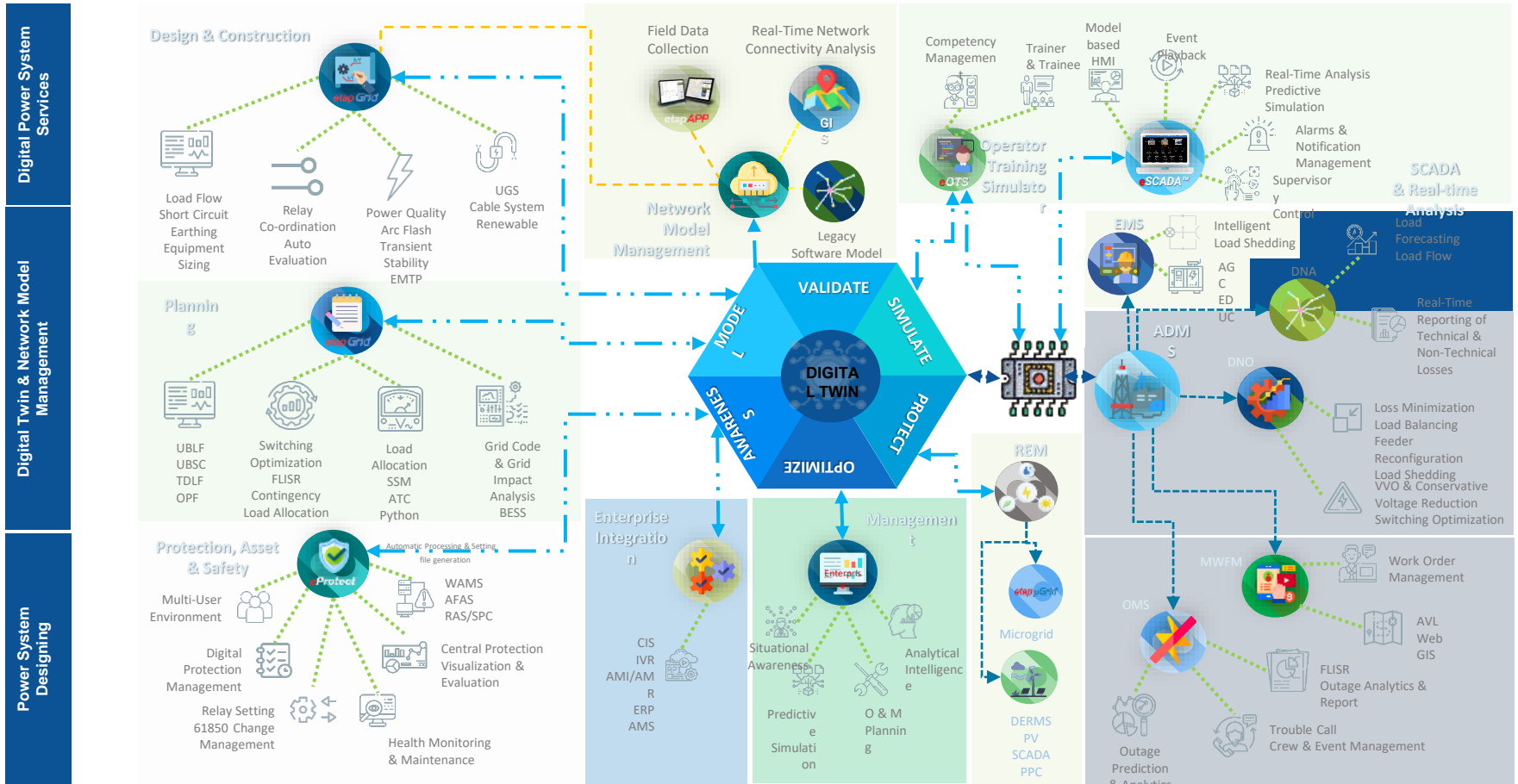
 No Utility Management System for efficient operations

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Electrical Digital Twin: To create the ultimate Energy Internet



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Looking at the Macro and Micro Perspectives

Sustainable Impact

Recovery of Key/rare metals is essential and represents a huge economic opportunity

Decentralized Markets

The global economy will be defined by a complex and continuously shifting set of economic relationships.

Digital Transformation

How soon can organizations shift to the new digital business and operating models.



Technology Changes



Competency Gaps



Business Model Structuring



Digital Mindset Adoption

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What does it mean for you?



61% of Utilities believe COVID-19 was a driver for customers' digital transformation.

Utilities that can provide continuous support for this customer journey are highly valued

Utilities who can demonstrate sustainability are increasingly viewed more favorably by customers



Industry Driven Changes



Look at use cases and not just the technology



Work in improving your customer Experience



Look at the purpose and get the trust of your customer



In the New Digital World Marketing is Sales

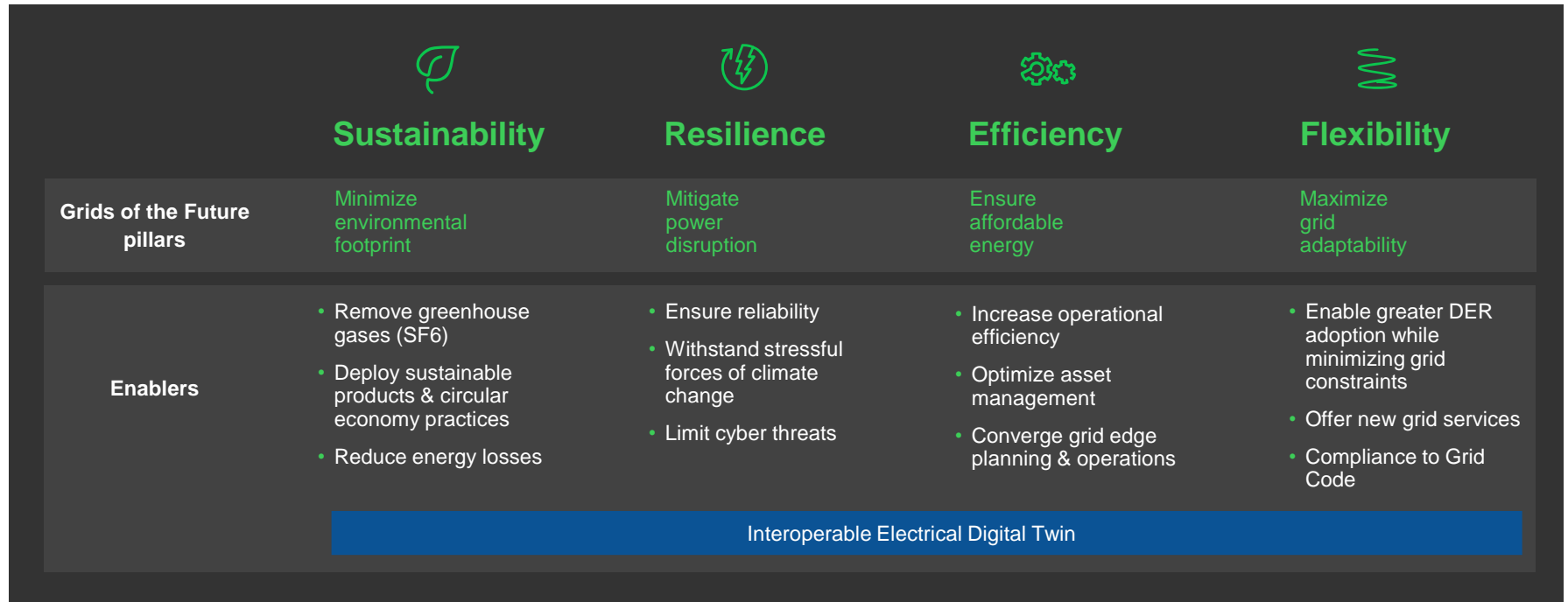
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We're shaping the grids of the future

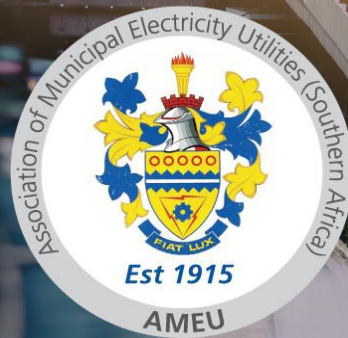
Towards a Just Energy Transition



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Thank you

