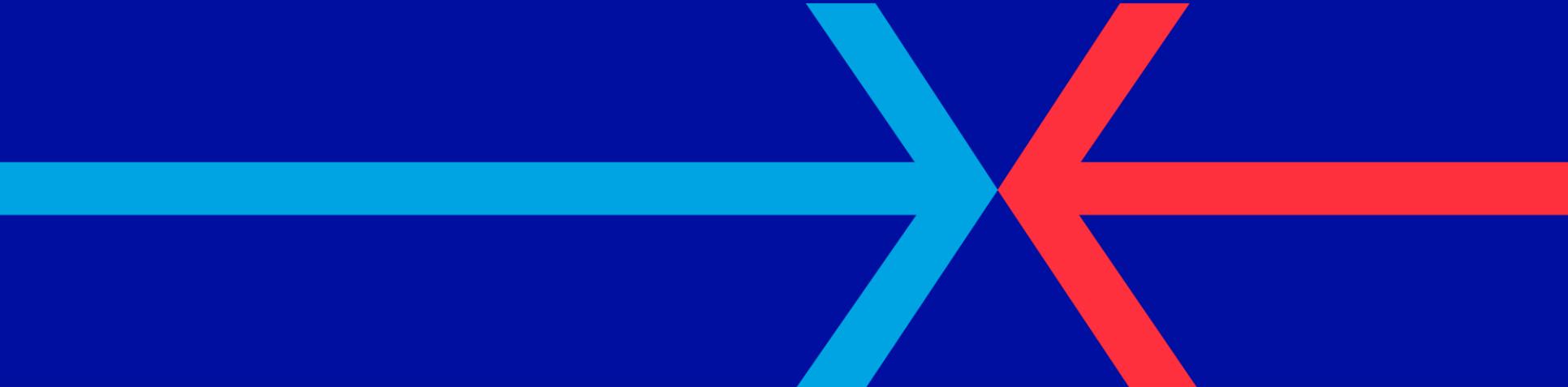
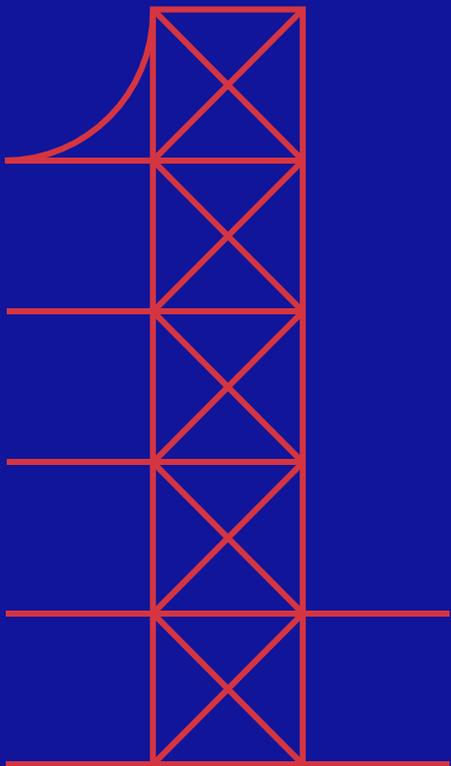


# Linxon turnkey substations

Shaping energy solutions to empower  
sustainable connectivity





# Introduction to Linxon

# The Linxon name

The origin of the name

**It's all about the link.**

**It's all about connections.**

**Human connections.**

**Business connections.**

**And the notion of always being  
"on" for our clients.**

We combine Hitachi ABB Power Grids' deep technological knowledge with SNC-Lavalin's project management expertise to create a company dedicated to turnkey electrical AC substations

**... we are Linxon.**

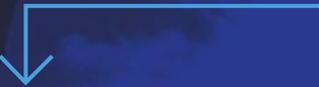
We work to shape energy solutions

to empower

sustainable connectivity



# Value proposition



We combine Hitachi ABB Power Grids' deep technological knowledge and SNC-Lavalin's project and construction management expertise

to create a company dedicated to substations.

We deliver sustainable energy solutions and act as a true partner to facilitate the digital transformation for those who depend on consistent reliability.

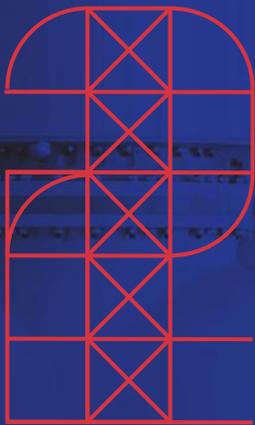
# Our pillars



## Act

as a business  
partner

- Single source of responsibility minimizes risk and reduces project complexity for our customers
  - Transparent and open communication helps to better prioritize customer requirements
  - Collaborative approach to deliver complete projects according to schedule
  - Single point of contact for after sales service
-



# Offer

dedicated domain  
expertise

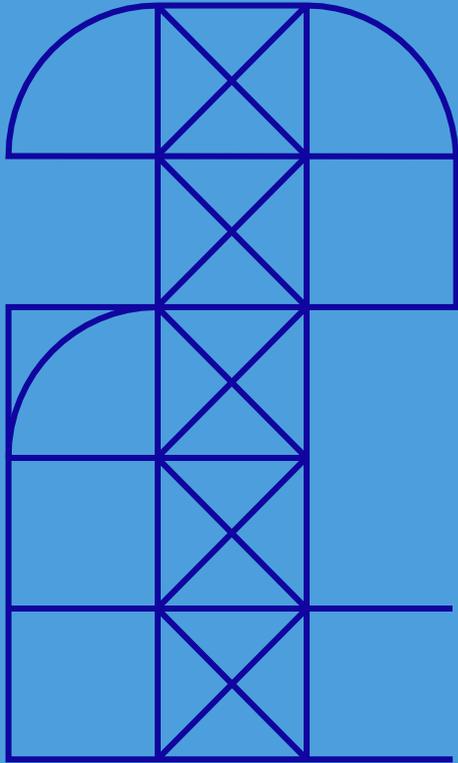
- An unwavering commitment to the highest safety and quality standards
  - Linxon brings unrivaled technology and application know-how
  - Proven track record of delivering end to end, grid compliant solutions in multiple regions
  - Ability to manage complexity as demonstrated by extensive global references
-



# Bring

long-term value

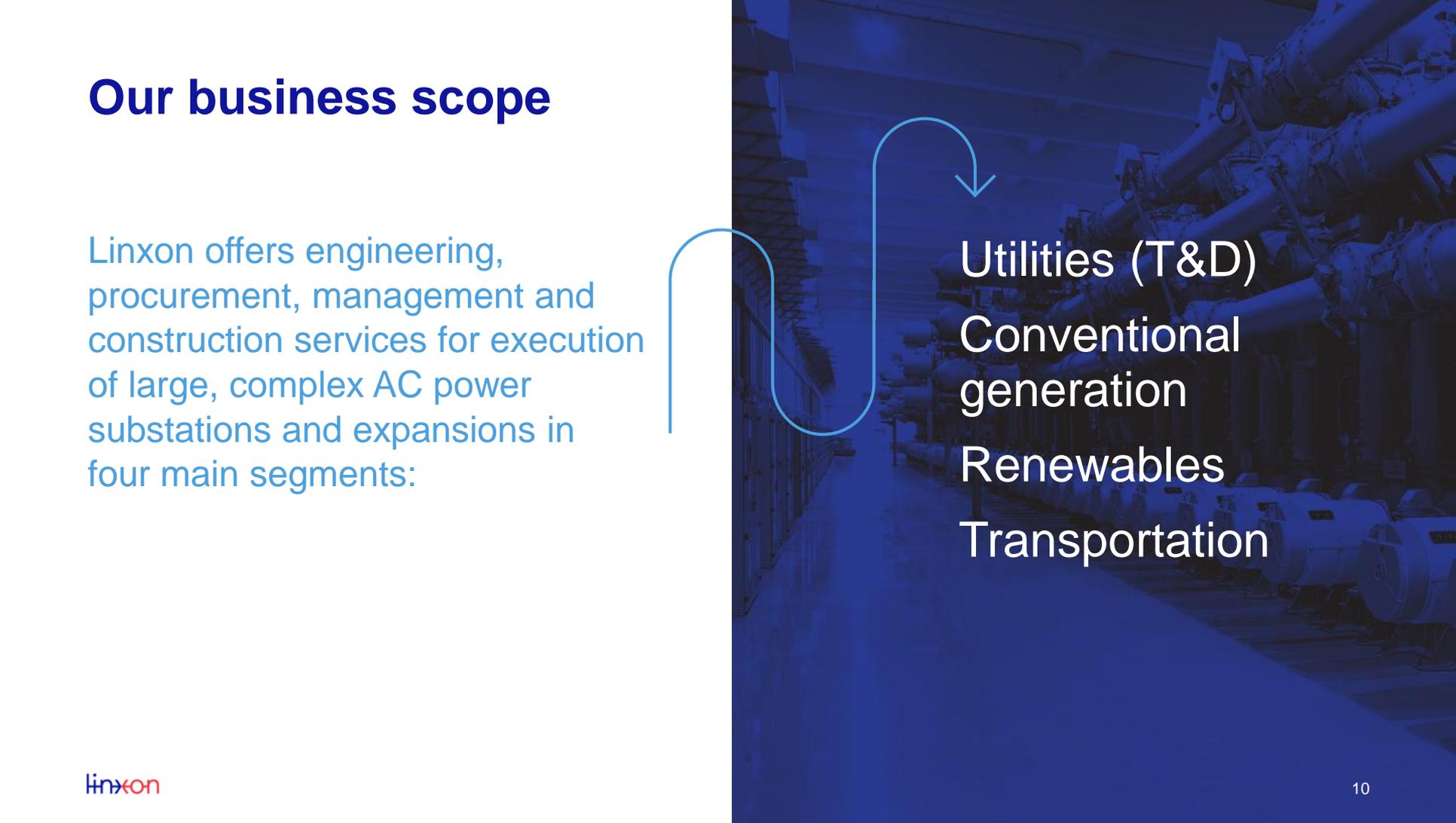
- Combining world class power technologies and project delivery
  - Enabling stronger, smarter and greener solutions
  - Future-proofed project execution helps our customers to be ready for the next generation of the grid
  - Predictable and cost-efficient lifecycle solutions
-



# The Linxon business scope and value proposition

# Our business scope

Linxon offers engineering, procurement, management and construction services for execution of large, complex AC power substations and expansions in four main segments:



Utilities (T&D)  
Conventional  
generation  
Renewables  
Transportation

# Linxon portfolio for turnkey substations

## Conventional generation

- Flexible and reliable solutions for effective integration of power from conventional generation plants
- Efficient transmission and distribution to residential, commercial and industrial consumers
- Comprehensive domain knowledge, global experience, continuous innovation and funding solutions
- Optimized turnkey substation solutions that support local grid code compliance
- Customer support throughout the lifecycle of the substation including brownfield upgrades and rehabilitation
- Interconnections with existing utility switchyards



# Linxon capabilities

Conventional: Al Fadhili 380/115 kV  
Gas Plant

## The challenge:

- Partial energization within 19 months from contract award
- Multiple stake holders (SEC/Aramco/Engie/Doosan), SEC standards
- New HCIS 2017 security standards

## Scope:

- Full turnkey 380/115 kV substation
- 36 bays 380 kV GIS ½ scheme with outdoor GIBs
- 115 kV GIS + 502 MVA power transformers
- Control and protection scope (IEC 61850)
- Civil construction, mechanical HVAC & firefighting
- Remote end modifications

## Benefits:

- Achieved full energization in 19 months (fast track)
- Pilot class 1 security standard executed

Location: Saudi Arabia

Customer: Doosan Heavy Industries

End user: SEC / Aramco Engie

Year of commissioning: 2018



# Linxon portfolio for turnkey substations

## Utilities (transmission and distribution)

- Upfront planning and systems studies including short circuit calculations
- Design for optimization & full project execution
- Full system maintenance / Life extension services
- Expertise in cutovers and sequencing to work within site limitations
- Integrated protection, control and metering systems
- Grounding and lightning protection
- AIS, GIS and Hybrid solutions



# Linxon capabilities

Utilities: Värtan 220/110 kV GIS

## The challenge:

- The largest substation project that Ellevio has ever undertaken
- The indoor technology has been chosen because this enables the construction of the substation on a smaller footprint
- Construction works whilst the old substation is operational

## Scope:

- 110 kV GIS switchgear: 17 double busbar, single breaker; 3 double busbar double breaker; 4 coupler bays
- 220 kV GIS switchgear: 16 double busbar, double breaker; 4 double busbar single breaker, 4 coupler bays
- Transformers 225/112.5/33 kV 250 MVA; 112.5/33 kV 75 MVA; reactor 225 kV 150 Mvar
- Execution in two stages: 110 kV GIS, 20 months (stage 1) and 220 kV, 55 months (stage 2) plus one option (stage 3)

## Benefits:

- Meeting the need to strengthen and renew Stockholm's electricity grid to secure future transmission capacity



Location: Sweden

Customer: Ellevio

Year of commissioning: ~2026



# Linxon portfolio for turnkey substations

## Renewable generation

- Completed several onshore and offshore wind substation projects – leveraging our experience from around the globe in this area
- Supporting our customers achieve return on investment with competitive and optimized solutions as the costs of wind and solar energy come down
- Significant experience in delivering grid connection substations for solar plants combined with complementary electrical BOP competence
- Addressing demand for grid stabilization and energy storage with innovative solutions
- Consistent and clear focus on maintaining project schedule to ensure our customers meet their commercial generation obligations



# Linxon capabilities

## Renewable generation - Shams 400 kV

### The challenge:

- Integration of solar power into the Dubai electrical grid
- Deliver reliable power to consumers and serve the building and infrastructure sector alongside utility and industry customers

### Scope:

- Supply of 14 x 400 kV, 28 X 132 kV gas-insulated switchgear, 4 x 400/132 kV 500 MVA power transformers, 2 X 400kV, 100MVA Shunt Reactor, 4 X 132kV, 30 MVA Shunt Reactor, protection, automation and control systems as well as surveillance and communication systems
- IEC 61850

### Benefits:

- State-of-the-art technologies that will boost capacity and bring clean solar power
- Digitalization to support open and seamless communication with all intelligent devices

Location: Dubai, United Arab Emirates

Customer: DEWA

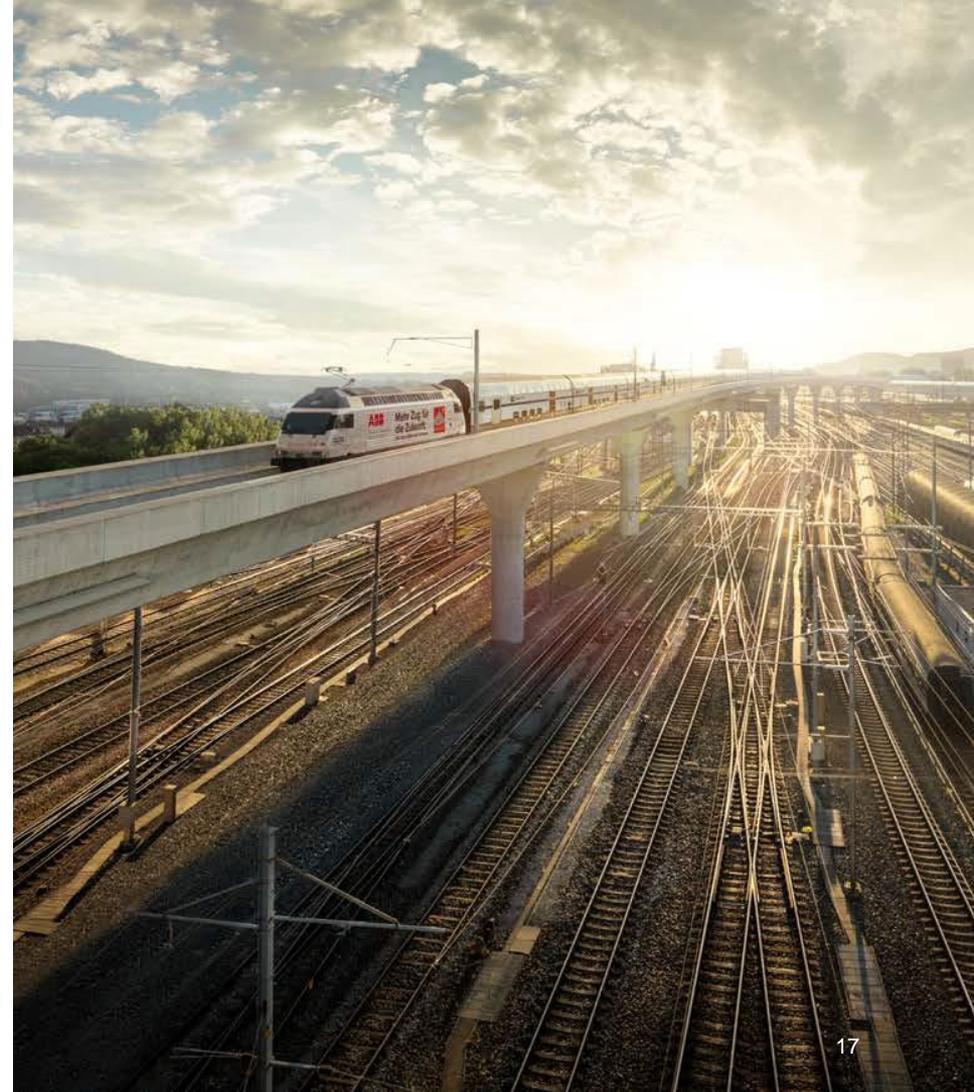
Year of commissioning: Ongoing (February – 2021)



# Linxon portfolio for turnkey substations

## Transportation

- Traction power substations (built in place and containerized solutions)
- Switching and paralleling stations
- AC & DC applications
- Wayside energy storage systems
- Feasibility and reliability studies – RAMS
- System studies and traction power simulations
- SCADA systems for railway applications
- Design, erection, testing and commissioning of Third Rails and Power Rails from 750vDC to 3000vDC consisting
- High Speed, Metro, Light rail and Monorail applications



# Linxon capabilities

Transportation: BMRCL urban mass transit

## The challenge:

- Supply of the complete power supply package (including third rail) for the new lines of the Phase II corridor Urban Mass Rapid Transit System in the city of Bangalore, India

## Scope:

- Engineering, project management, supply, erection, testing and commissioning for the complete power supply scope
- Traction substations, auxiliary substations (along with power cables), a 750 V DC third rail system and a supervisory control and data acquisition system for the complete electric traction power
- Maintenance planning system installed at BMRCL's operation control centre and integrated with the supervisory control and data acquisition system

## Benefits:

- Improved efficiency of power supply by almost + 10% compared with competitors
- Reduced carbon footprint and greenhouse gas emissions by around 17 million metric tons over a lifetime period of 25 years

Location: Bangalore, India

Customer: The Bangalore Metro Rail Corporation (BMRCL)

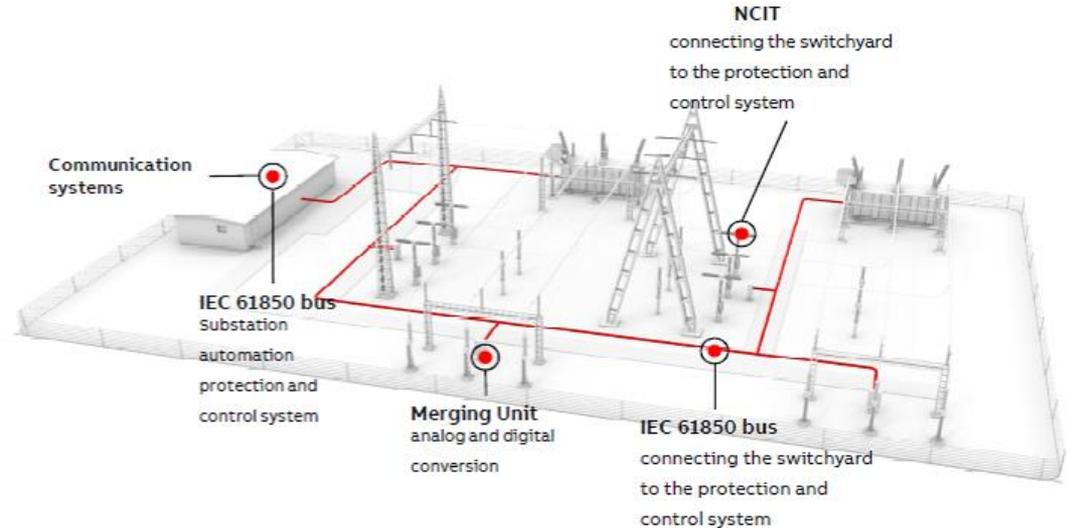
Year of commissioning: 2022 and 2024



# Linxon portfolio for turnkey substations

## Digital substations

- Reduced risk of electrical shock
- Predictive maintenance capabilities
- 'Future proof' remote control via IEC 61850 international standards
- Up to 80% copper cable reductions, 60% space reductions in relay house, 40% reduction in installation time, and 50% outage time reduction during secondary system upgrades
- Real time supervision and control, smart asset management, planning and maintenance optimization



Digital products and solutions from Hitachi ABB Power Grids

# Linxon value proposition

**Early engagement** to develop feasible and optimal solutions for our clients

**In house engineering** with our own OEM supervisors

**Innovative approaches** and project sequencing to work within challenging site limitations



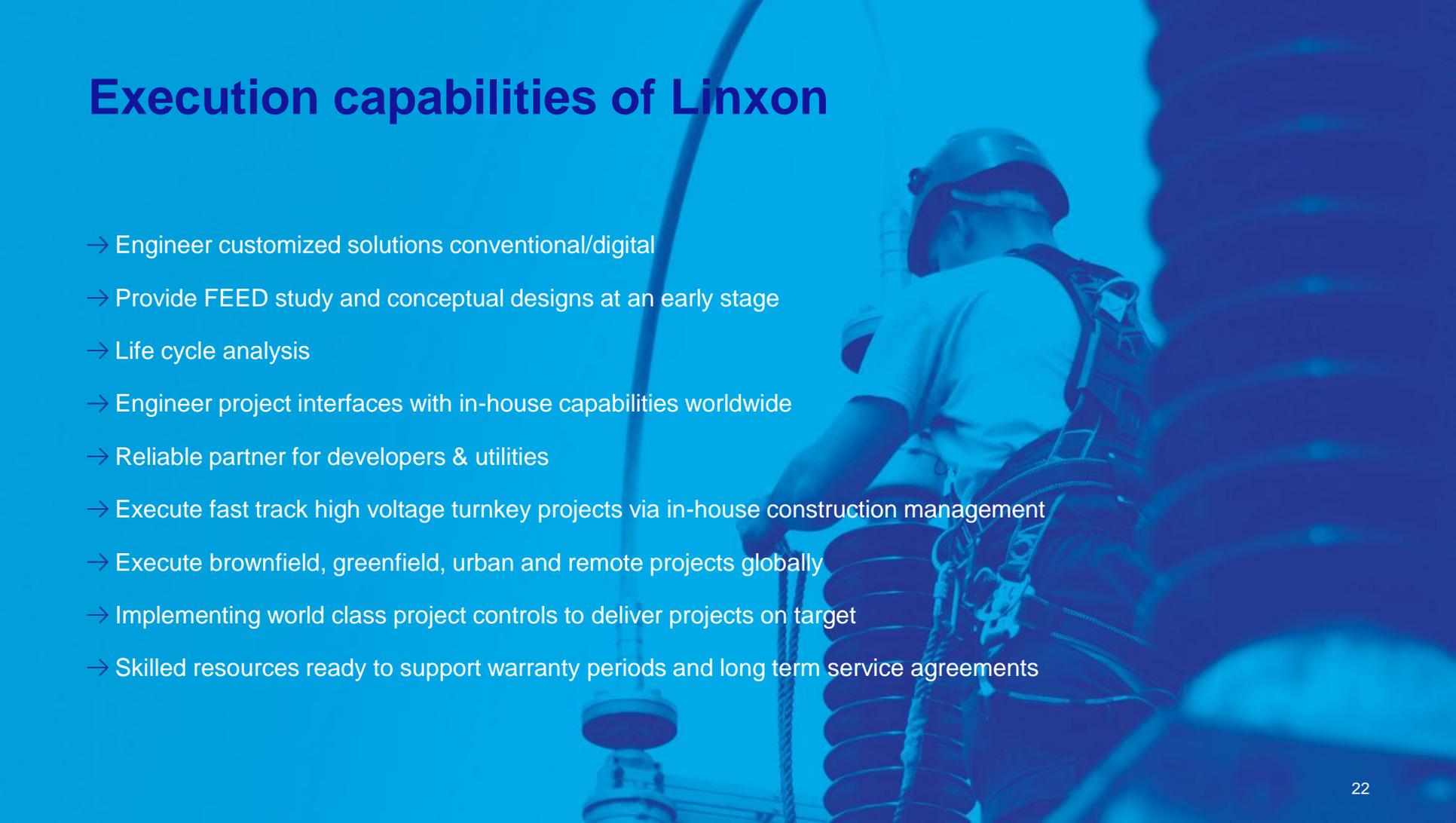


## Linxon value proposition

**Expanded scope and turnkey capabilities** – **1000** references, over **100** years of technology expertise – and **60** years of substation and electrification project experience worldwide

**Digitalization** – reduction in footprint and cabling, improved safety, reduced training

# Execution capabilities of Linxon



- Engineer customized solutions conventional/digital
- Provide FEED study and conceptual designs at an early stage
- Life cycle analysis
- Engineer project interfaces with in-house capabilities worldwide
- Reliable partner for developers & utilities
- Execute fast track high voltage turnkey projects via in-house construction management
- Execute brownfield, greenfield, urban and remote projects globally
- Implementing world class project controls to deliver projects on target
- Skilled resources ready to support warranty periods and long term service agreements

# Technology competence

Linxon's application knowledge and experience supports our customers in dealing with complex technical requirements:

- GIS, AIS or hybrid substation solutions
- Achievement of grid compliance
- Managing renewable generation within the grid system
- Grid stabilization and improving power quality
- Integrating series or shunt compensation
- Reactive power compensation (statcom)
- Design and delivery of digital substations
- Leading edge protection and control design
- After sales service including predictive and preventive maintenance solutions

# Conclusion

## **Genuine partnerships for real success**

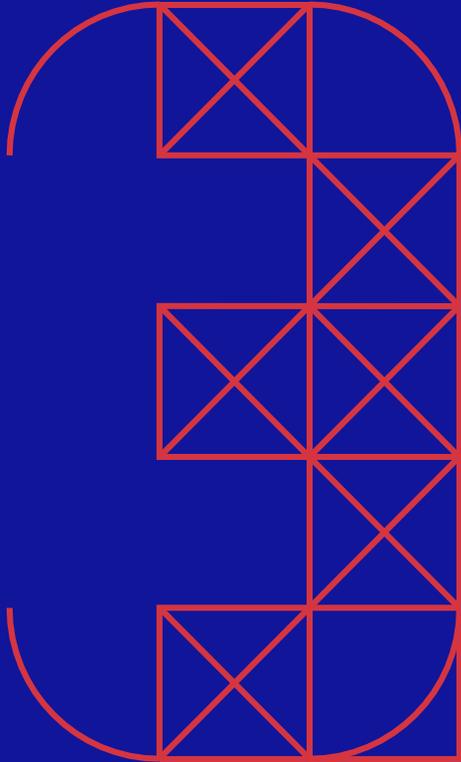
- End to end complete range of solutions
- Strong operational and safety standards
- Diverse and global know how of grid solutions and power supply packages for rail
- Customer focused approach with higher agility
- Integrated sub contractor approach
- Securing multiple interfaces
- Value creation through joint engagement with end customer
- Unique proposition for end customers
- Fully integrated system offering

“

As one of the leading engineering companies, we help our customers with turnkey solutions in the field of substations for power transmission, renewable energy and transportation. As a single point of contact we combine the accumulated knowhow of key-suppliers and contractors in a sustainable way so that customers benefit from efficient solutions, increased industrial productivity and a lower environmental impact

”





# Linxon corporate values

Values into action

# Our heritage and vision gives us our purpose

## **Our heritage: We bring together Hitachi ABB Power Grids and SNC-Lavalin strengths**

Linxon combines Hitachi ABB Power Grids deep technological knowledge with SNC-Lavalin's project management expertise into a company dedicated to substations. We deliver sustainable energy solutions and act as a true partner to facilitate the digital transformation for those who depend on consistent reliability.

## **Our vision: Shaping energy solutions to empower sustainable connectivity**

Linxon delivers the best market offer of EPC projects through world-class power technologies and the highest level of competence in managing infrastructure activities. We want to meet and exceed the expectations of our customers and partners whilst complying with the highest standards of quality, safety, efficiency and sustainability.

## **Our purpose: Building a sustainable future**

Linxon delivers turnkey electrical AC substation projects that transform communities by bringing opportunities and lasting, environmentally responsible solutions. Our deep technological knowledge, digital know-how and project management expertise are set to benefit our customers from efficient innovations, increased industrial productivity and a reduced environmental impact.



# Building a sustainable future

## Our values

We never compromise on safety, ethics or integrity

We are customer oriented, agile and collaborative

We are transparent and trustworthy

We are reliable and predictable

We are innovative and entrepreneurial

## Our purpose: Building a sustainable future

Customers

Employees

Society

THROUGH:

Shaping

Business

Engaging

People

Delivering

Results

Our success is when our customers, employees and shareholders reach their own successes because of Linxon performance and value added

# Our values

## We never compromise on safety, ethics or integrity

- Each employee has the right to return home safe every day, and our physical and mental wellbeing matters. We strive to maintain the highest standards of ethics and integrity in all areas of our business.

## We are customer oriented, agile and collaborative

- We continuously develop our ability to anticipate, adapt and react to our business and changes in our environment. Collaborating closely with our customers, we adapt our solutions to their needs and customer satisfaction is our main objective.

## We are transparent and trustworthy

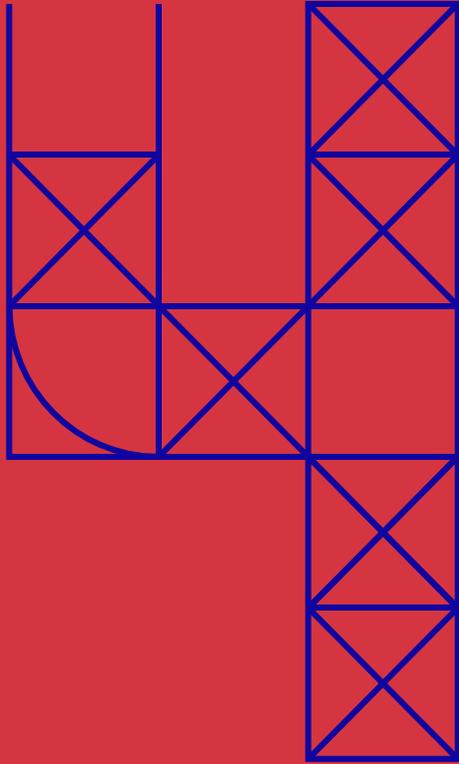
- We are open and always aiming to build trust and strong relationships.

## We are reliable and predictable

- We identify and understand internal and external counterpart expectations, and work tirelessly to meet or exceed them. We deliver what we promise to internal and external counterparts.

## We are innovative and entrepreneurial

- We are a unique company with a strong heritage and external focus, bringing together competence, curiosity and flexibility. We identify opportunities and strive to achieve them, accepting changes, acting with flexibility and openness whilst managing the associated risks.



# Linxon's local and global presence

A local team, globally connected

# Our global presence

500 employees

3 hubs

North America  
Europe and Middle East  
Asia Pacific



# Our local offices

## Linxon (Bahrain)

Millenium Tower, Mohammed VI Av., Seef 428, Manama, Bahrain

## Linxon (India)

6 Floor, SKCL Infinite Tower, A21 & A22, Thiru-Vi-Ka Industrial Estate, Guindy, Chennai, 600 032, India

## Linxon (Jordan)

Office 509, Al Hijaz Towers, 158 Mecca Street, Amman, Jordan

## Linxon (Switzerland)

Nordhaus 3  
5400, Baden  
Switzerland

## Linxon (Canada)

455 Boulevard René-Lévesque Ouest,  
Montréal, QC H2Z, Canada

## Linxon (India Pvt. Ltd.)

RMZ Galleria Office Block,  
Ambedkar Colony, Yelahanka,  
Bangalore, 560064, India

## Linxon (Saudi Arabia)

Unit 7, 9330 Al Ulaya - Al Muruj,  
Riyadh, 12264 - 2510, Saudi Arabia

## Linxon (Thailand)

SG Tower, Soi Mahadlekluang 3,  
Lumphini, Pathum Wan District,  
Bangkok, 10330, Thailand

## Linxon (Germany)

Friedrichstraße 15, 70174 Stuttgart,  
Germany

## Linxon (India Pvt. Ltd.)

Pinnacle Business Tower, Surajkund  
Road, Sector 39, Faridabad, 121009,  
India

## Linxon (Slovakia)

EcoPoint Office Center, Magnezitárska  
2/C, 04013 Košice, Slovakia

## Linxon (UK)

Trent House, 234 Victoria Road, Stoke-  
on-Trent, Staffordshire, ST4 2LW,  
United Kingdom

## Linxon (Gulf LLC)

50th Floor, Ubora Tower, Al Abraj  
Street, Dubai, United Arab Emirates

## Linxon (India Pvt. Ltd.)

5 Floor, Notus IT Park, Sarabhai  
Campus, Genda Circle, Vadodara,  
390023, India

## Linxon (Sweden)

Port-Anders Gata 3, 722 12 Västerås,  
Sweden

## Linxon (US)

901 Main Campus Drive  
Suite 210, Raleigh  
North Carolina, 27606, USA

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