

Linxon

Unifikovaný dizajn zapuzdrených rozvodní VVN v el. staniách realizovaných firmou Linxon

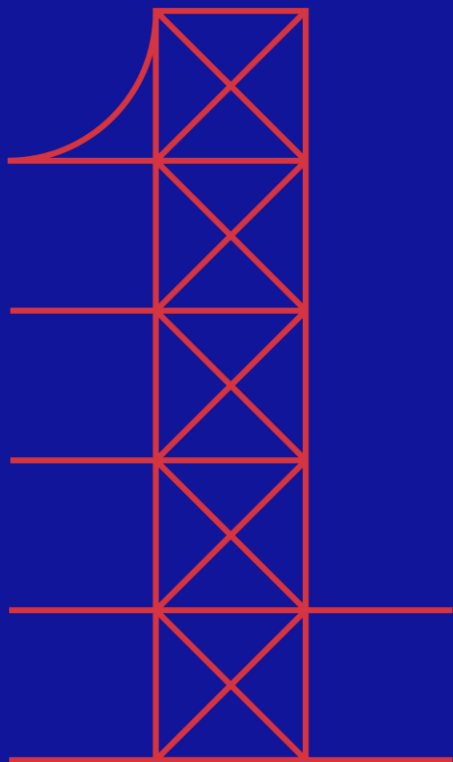
Presented by

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Introduction to Linxon

Value proposition



We combine ABB's 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.

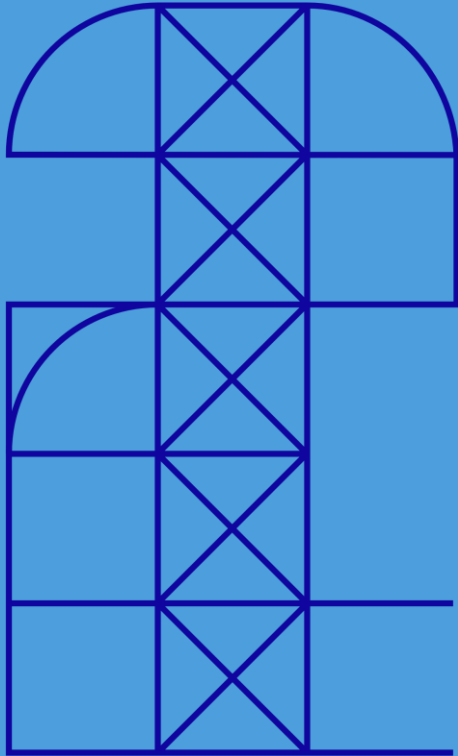
Our global presence

400 employees

3 hubs

North America
Europe and Middle East
Asia Pacific





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 capabilities

Conventional Generation 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 $\frac{1}{2}$ 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 – Waterfront 230 kV

The challenge:

- Architectural building with precast exterior
- Aging infrastructure, site was located in a congested urban community

Scope:

- 8 bays of BAAH 230kV GIS breakers with tie breakers, 6 ring bus 13kV switchgear (102 breakers total), high voltage equipment
- Relay and Protection equipment and station automation
- HVAC / Fire Protection / Building Security
- Landscaping and Construction

Benefits:

- Comprehensive, modern design
- In Service Date (ISD) achieved November 2018

Location: Washington DC, US

Customer: Pepco

Year of commissioning: 2017



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



Location: Dubai, United Arab Emirates

Customer: DEWA

Year of commissioning: 2017

Linxon capabilities

Renewable generation – Mohammed Bin Rashid solar park, 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 400 and 132 kV gas-insulated switchgear, power transformers, protection, automation and control systems as well as surveillance and communication systems
- IEC 61850

Benefits:

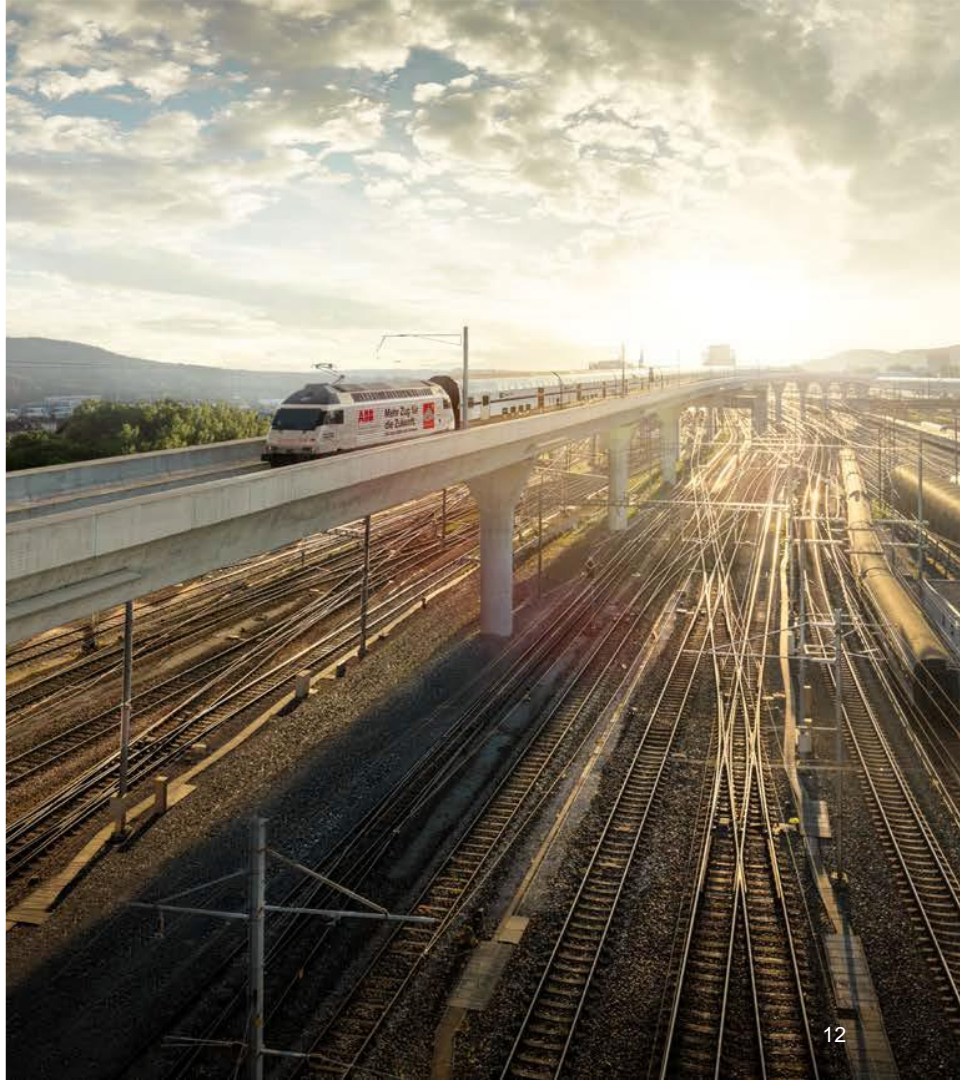
- State-of-the-art technologies that will boost capacity and bring clean solar power
- Digitalization to support open and seamless communication with all intelligent devices



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 – Pink and Yellow monorail network

The challenge:

- Two monorail projects in Bangkok which transport millions of city commuters in the Greater Bangkok area
- Reducing air pollution and easing traffic congestion

Scope:

- Bulk substation, traction and service substations and critical equipment
- Complete turnkey solution which includes engineering, supply, installation testing and commissioning
- 115 kV AC/22 kV AC/750 kV DC

Benefits:

- The substation package will help power both monorail projects, thus bringing respite to millions of commuters in Bangkok, easing traffic congestion and reducing pollution
- Encourages a shift from road transport to more sustainable urban rail commuting

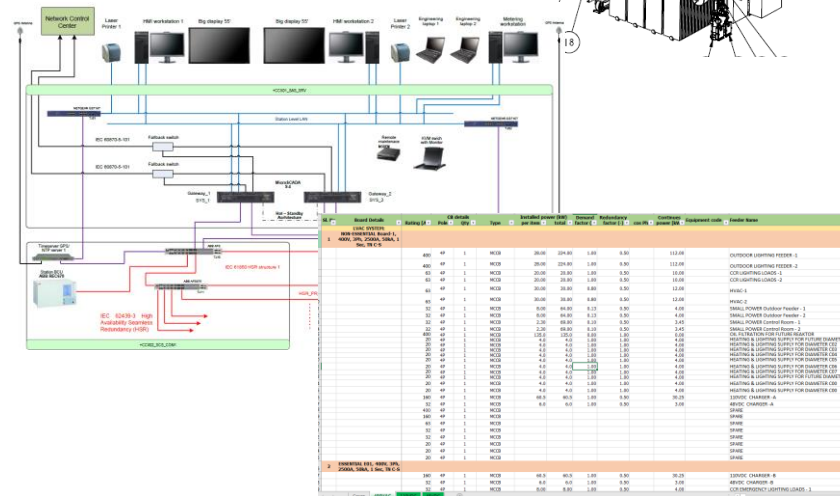
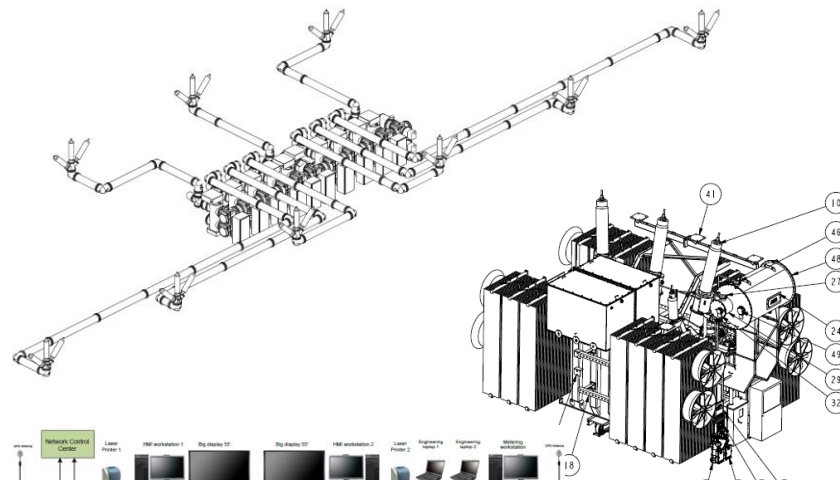
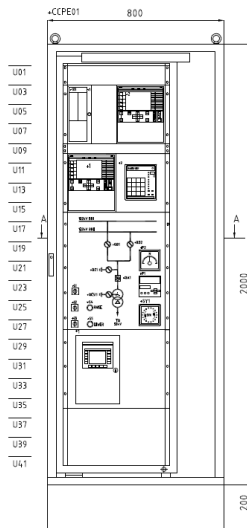
Location: Bangkok, Thailand
Customer: MRTA of Thailand
Year of commissioning: 2021



LINXON Unifikovaný dizajn zapuzdrených rozvodní

ABB technológia

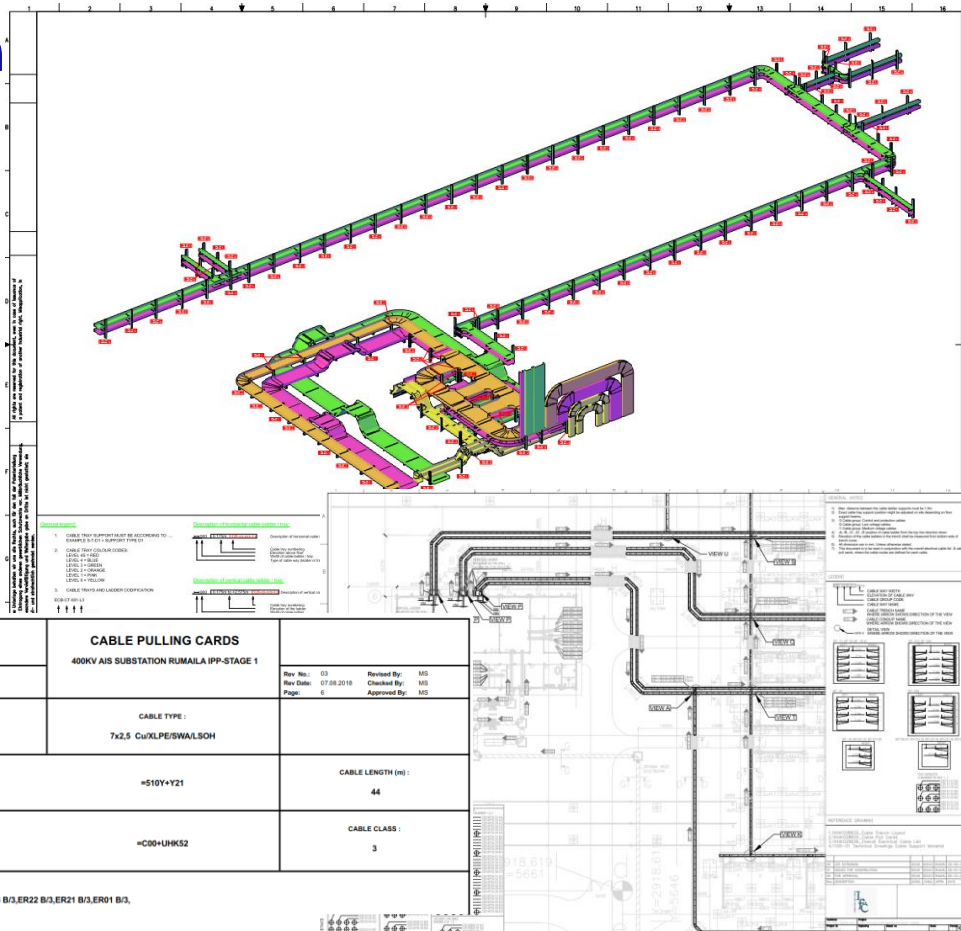
- ABB Plynom izolované rozvodne
- ABB Výkonové transformátory
- ABB Riadiaci systém
- ABB Ochrany
- Zoznam spotrebičov elektrickej stanice
- ❖ Štandardné vstupy
- ❖ Rýchle dodacie lehoty
- ❖ Odladené chyby
- ❖ Rýchly a presný inžiniering



LINXON - Unifikovaný dizajn zapuzdrených rozvodní

3D model systému káblových trás

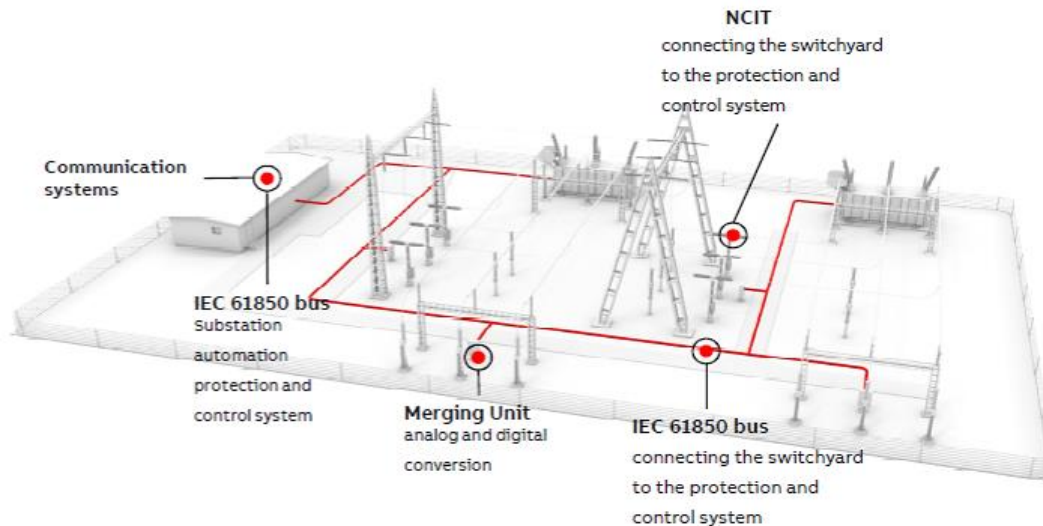
- Presný odhad materiálu
- Presné dĺžka silových a kontrolných káblov
- Zjednodušená inštalácia káblových trás
- Presné trasovanie káblov
- Prehľadné a jednoznačné karty pre inštaláciu káblov
- Kontrola preťaženia káblových trás
- Začlenenie 3D modelu do BIM – informačný model budovy
- Menej problémov počas realizácie
- Podpora údržby počas prevádzky stanice



LINXON - Unifikovaný dizajn zapuzdrených rozvodní

Digitalizácia rozvodní

- Pomáha predvídať a plánovať údržbu
- ‘Príprava na budúcnosť’ ovládanie cez IEC 61850 medzinárodný štandard
- Až 80% úspora medených káblov,
60% úspora miesta v domčekoch ochrán,
40% skrátenie času potrebného na inštaláciu
50% redukcia času výpadku počas upgradov sekundárnych systémov
- Kontrola v reálnom čase, implementácia „chytrého“ plánovania a manažmentu.



Digital products and solutions from ABB

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