

ENTIE
Energy Core Solutions

WHAT IT TAKES TO BUILD A WORKING INDUSTRIAL POWER SYSTEM

Practical Experience from an EPC Contractor

FULL CYCLE

ENTIE
Energy Core Solutions

ENGINEERING, IN-HOUSE MANUFACTURING AND ON-SITE DELIVERY

founded in

2009

3 500+

completed projects

of production space

≈7 000 м²

120+

factory employees

installation specialists in our own teams

80+

ONE TEAM FOR EVERY PROJECT STAGE



01/
Grid connection



02/
Engineering



03/
Manufacturing



04/
Material supply



05/
Electrical installation



06/
Testing and commissioning

PRELIMINARY ENGINEERING ASSESSMENT

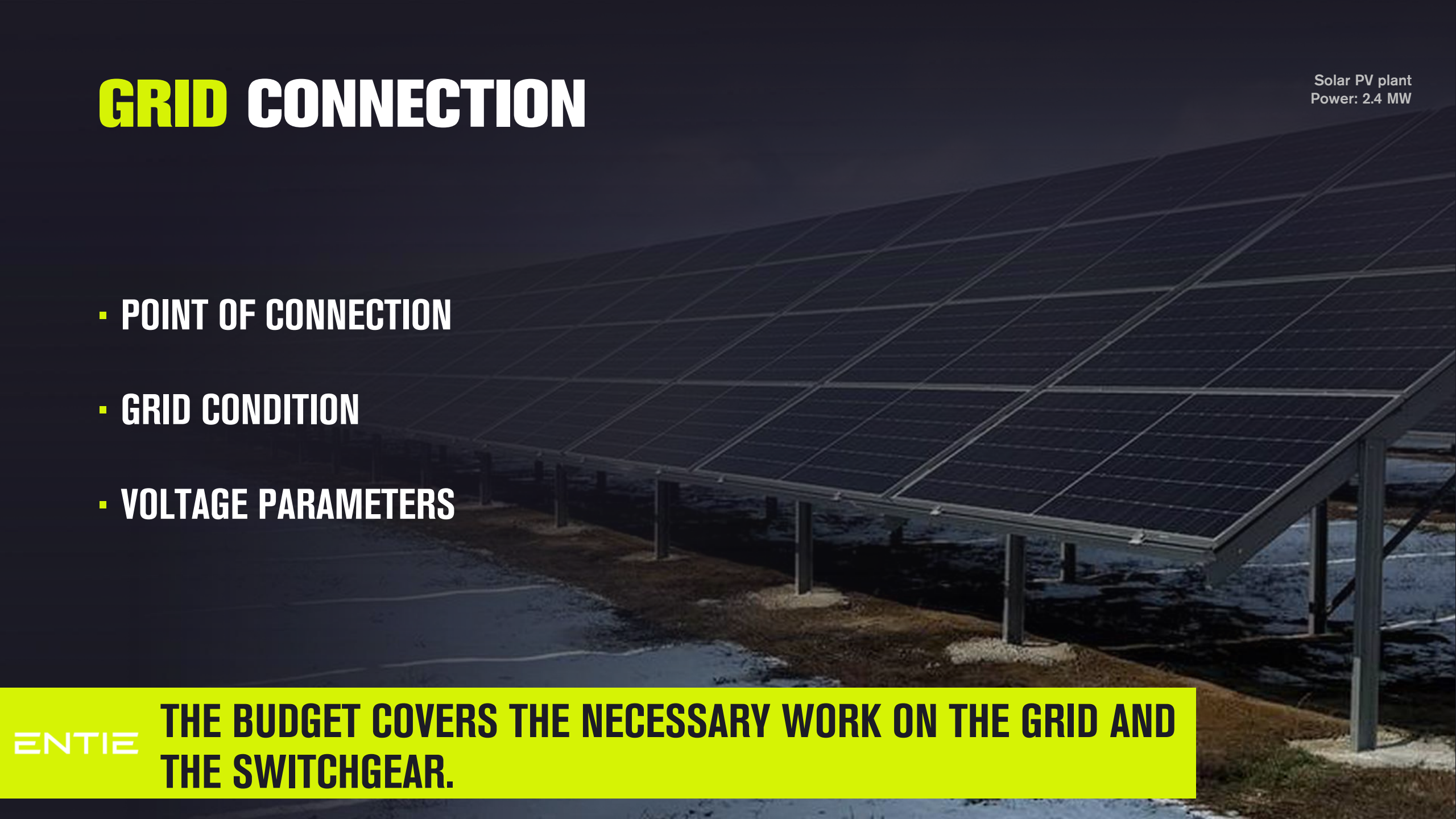
- EMERGENCY CONSUMERS
- MAXIMUM ALLOWABLE OUTAGE DURATION
- CAPACITY FOR FUTURE EXPANSION



CHP units providing emergency power to cooling systems
Power: 2 × 2.3 MW

ENTIE TECHNICAL REQUIREMENTS AND INPUTS FOR PREPARING A QUOTATION.

GRID CONNECTION



Solar PV plant
Power: 2.4 MW

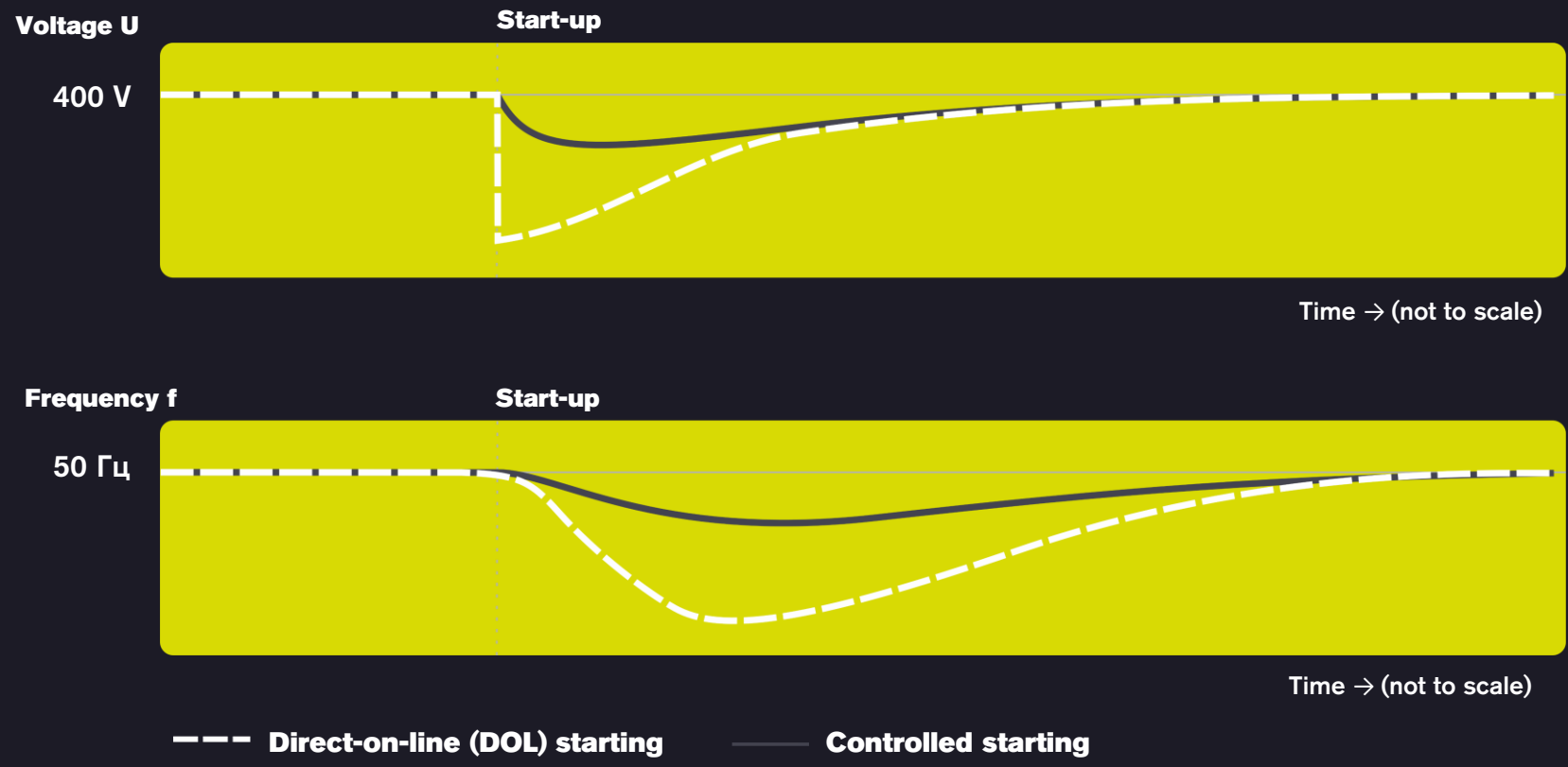
- POINT OF CONNECTION
- GRID CONDITION
- VOLTAGE PARAMETERS

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THE BUDGET COVERS THE NECESSARY WORK ON THE GRID AND THE SWITCHGEAR.

ENGINEERING DESIGN

- POWER SYSTEM ARCHITECTURE
- STARTING LOADS
- RESERVE CAPACITY



ENTIE EQUIPMENT DESIGNED TO OPERATE AS ONE SYSTEM.

ENGINEERING SUPPORT FOR PROCUREMENT

- CONNECTION SCHEME
- OPERATING MODES
- METERING AND PROTECTION
- CONTROL INTERFACES





0.8 MW solar PV plant + 2 MW / 4.176 MWh BESS

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EQUIPMENT THAT MEETS THE DESIGN REQUIREMENTS AND IS ORDERED ON TIME.

SWITCHGEAR MANUFACTURING

- SITE CONDITIONS
- CABLE ENTRY
- MAINTENANCE ACCESS













GENET packaged transformer substation
Power: 1,600 kVA

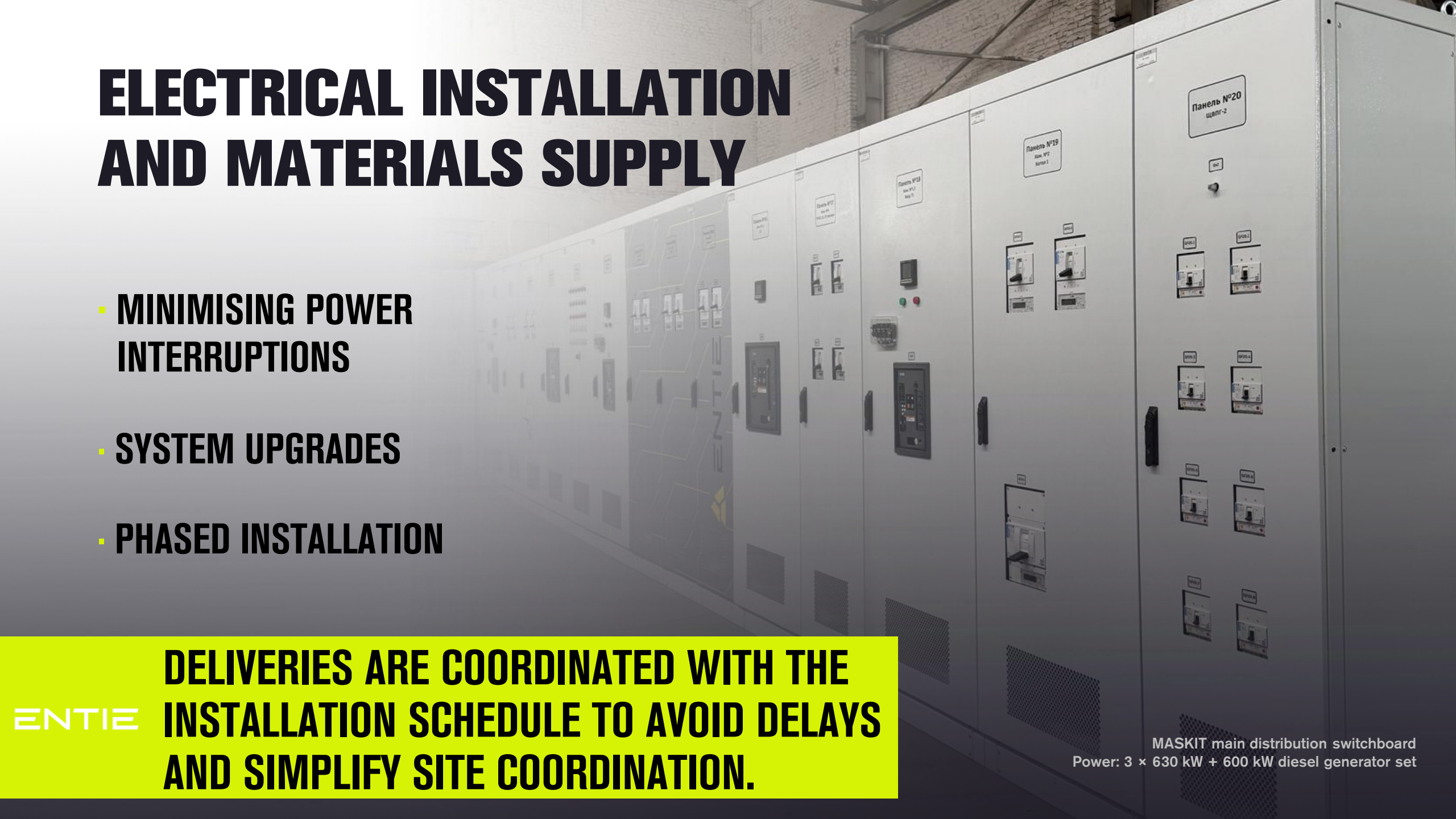
ENTIE EQUIPMENT BUILT TO SUIT SITE CONDITIONS AND READY FOR INSTALLATION.

ELECTRICAL INSTALLATION AND MATERIALS SUPPLY

- MINIMISING POWER INTERRUPTIONS
- SYSTEM UPGRADES
- PHASED INSTALLATION

DELIVERIES ARE COORDINATED WITH THE INSTALLATION SCHEDULE TO AVOID DELAYS AND SIMPLIFY SITE COORDINATION.

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MASKIT main distribution switchboard
Power: 3 × 630 kW + 600 kW diesel generator set

LABORATORY TESTING

- SPECIALIST TEAM
- SCHEDULED TESTING
- RETESTING AS NEEDED
- MODERN TEST EQUIPMENT











ENTIE **READY FOR COMMISSIONING ON SCHEDULE.**

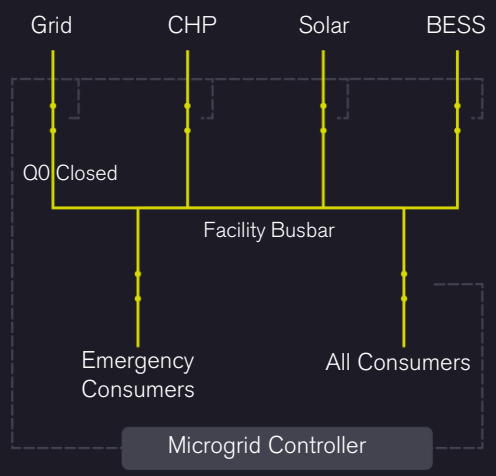
COMMISSIONING AND SYSTEM CONTROL

OPERATING SCENARIOS

MULTIPLE POWER SOURCES

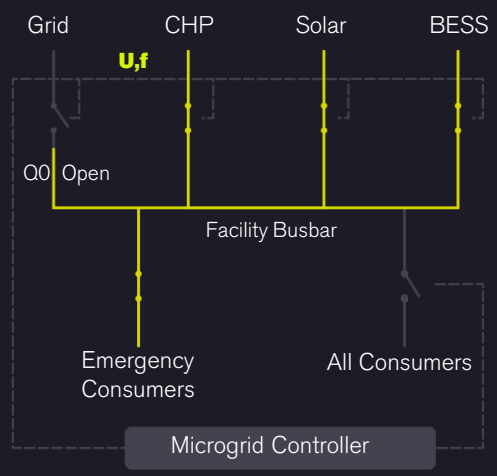
OPERATING MODES

01
GRID-CONNECTED MODE



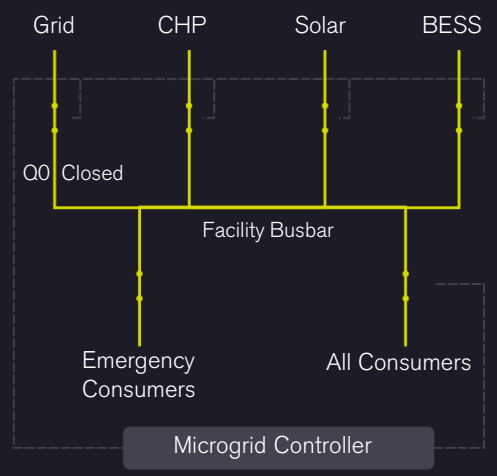
Power Setpoints for Energy Sources
BESS Charging and Discharging According to Control Logic

02
ISLANDED MODE



The CHP Establishes the Island Voltage and Frequency*
Некритичне навантаження відключене

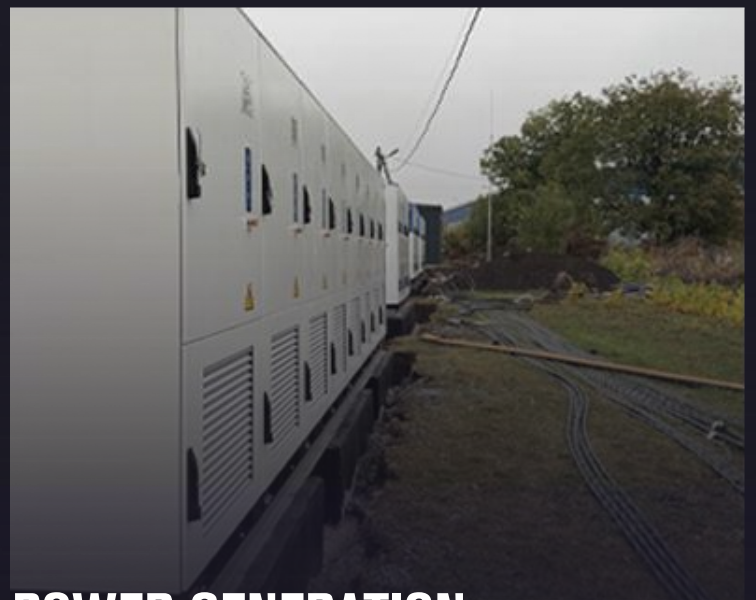
03
GRID RECONNECTION



Voltage, Frequency and Phase Angle Checks
Q0 Closes After Synchronization

ENTIE **ONE INTEGRATED POWER SYSTEM WITH COORDINATED CONTROL.**

WHAT DOES IT COST TO BUILD A WORKING POWER SYSTEM?



POWER GENERATION AND ENERGY STORAGE



INTEGRATION WITH THE EXISTING ELECTRICAL NETWORK



CONSTRUCTION, INSTALLATION AND PREPARATION FOR COMMISSIONING

Design Switchgear Cables Automation Metering Protection Approvals Commissioning

ENTIE FROM TECHNICAL REQUIREMENTS TO COMMISSIONING.

ДЯКУЮ
ЗА УВАГУ!

THANK YOU FOR YOUR ATTENTION!

