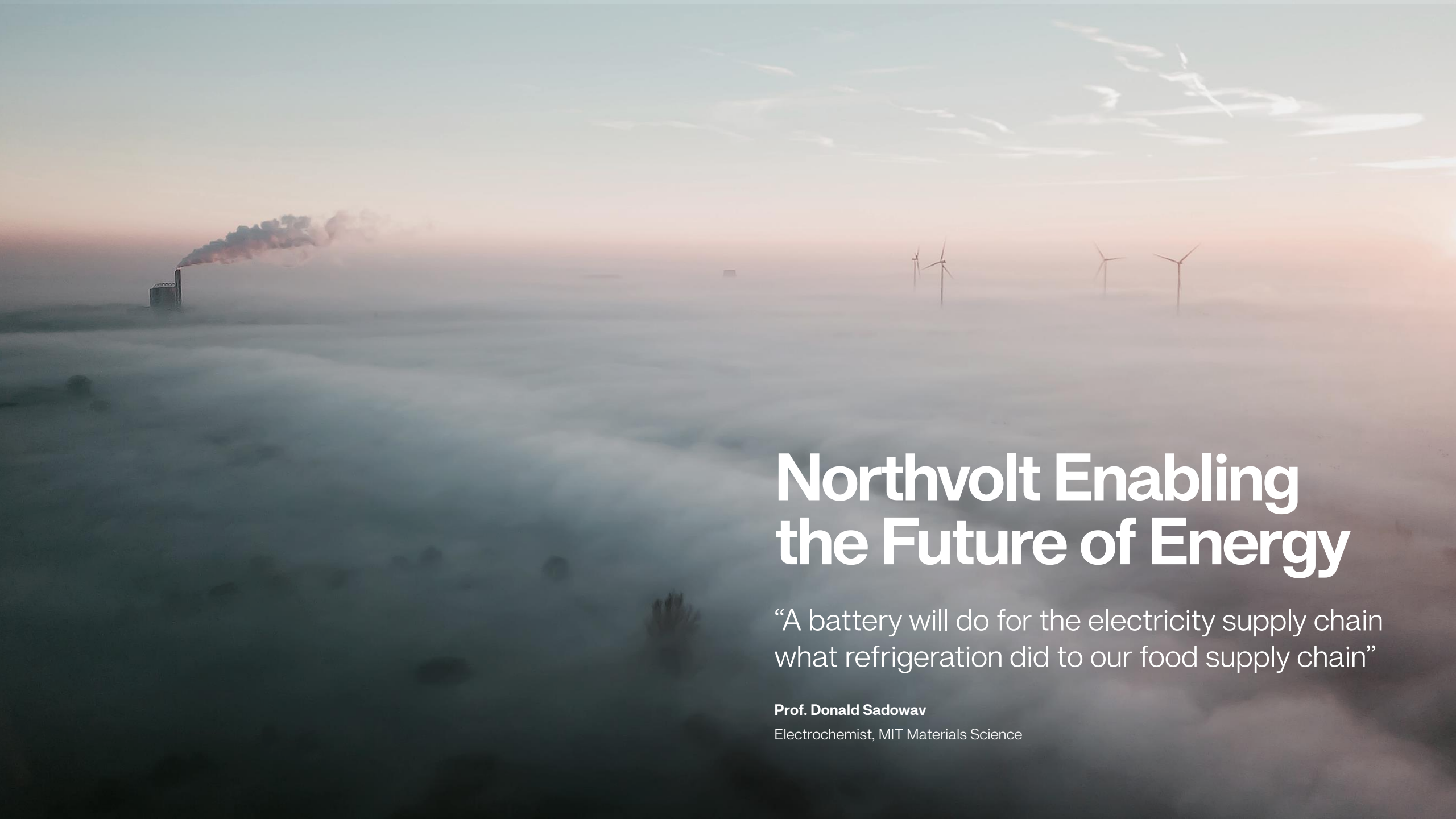




# Northvolt Enabling the Future of Energy

“A battery will do for the electricity supply chain  
what refrigeration did to our food supply chain”

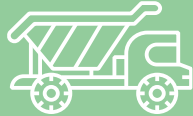
**Prof. Donald Sadoway**

Electrochemist, MIT Materials Science

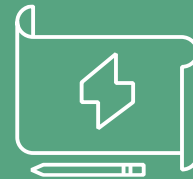
## Northvolt model



A commitment to **clean energy** in **cell production**



**Sustainable & ethical** sourcing of raw materials

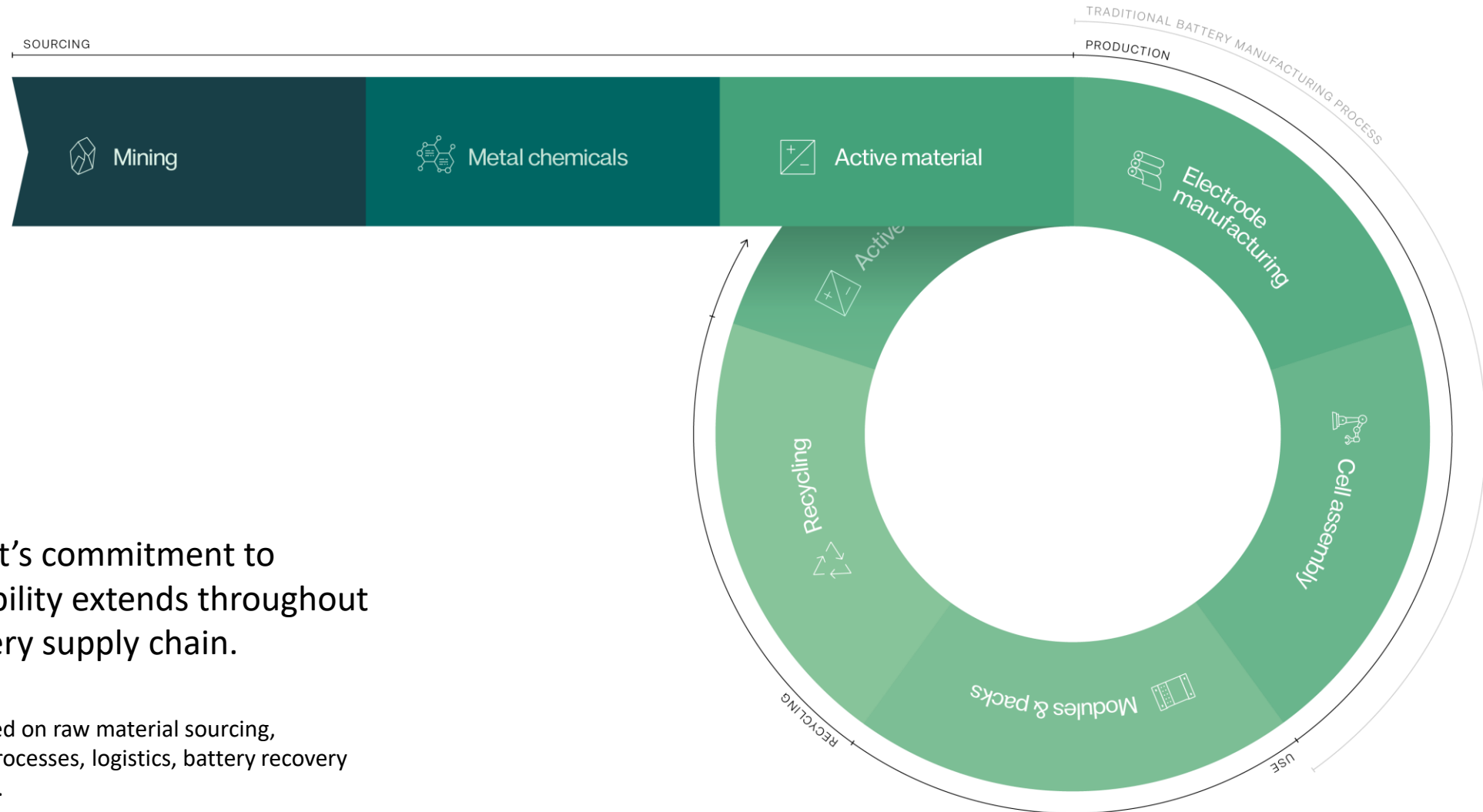


Embrace of **new methods, innovation** and **R&D** to advance our products and solutions



Partnership and collaboration with **strategic partners** who **share our vision for the future**

# Northvolt loop



Northvolt's commitment to sustainability extends throughout the battery supply chain.

Focus is placed on raw material sourcing, production processes, logistics, battery recovery and recycling.

# Northvolt's ambition of the Voltpack Mobile System

Make diesel generators history  
& enable electrification



## **Superior overall performance to diesel generators**

Technical, Operational costs, Ease of use, Mobility, Maintenance



## **Flexibility to enable all possible use cases**

Field usage, Multipurpose, Future proof



## **Lowest product carbon footprint**

Material sourcing, Vertical integration, Cells, Recycling

# The **VMS** can be deployed in **a variety of applications**



## Construction

- Replace diesel generators with batteries for off-grid applications
- Enable electrification of construction machines
- Supply green electricity to charge electric equipment



## Events

- Enable green events without compromise to
- Deploy in hybrid mode to optimize efficiency
- Supply green electricity to power electric devices



## Distribution utilities

- Decarbonize grid maintenance works
- Enable grid flexibility and load shifting
- Relief for temporary power peaks



## EV Charging

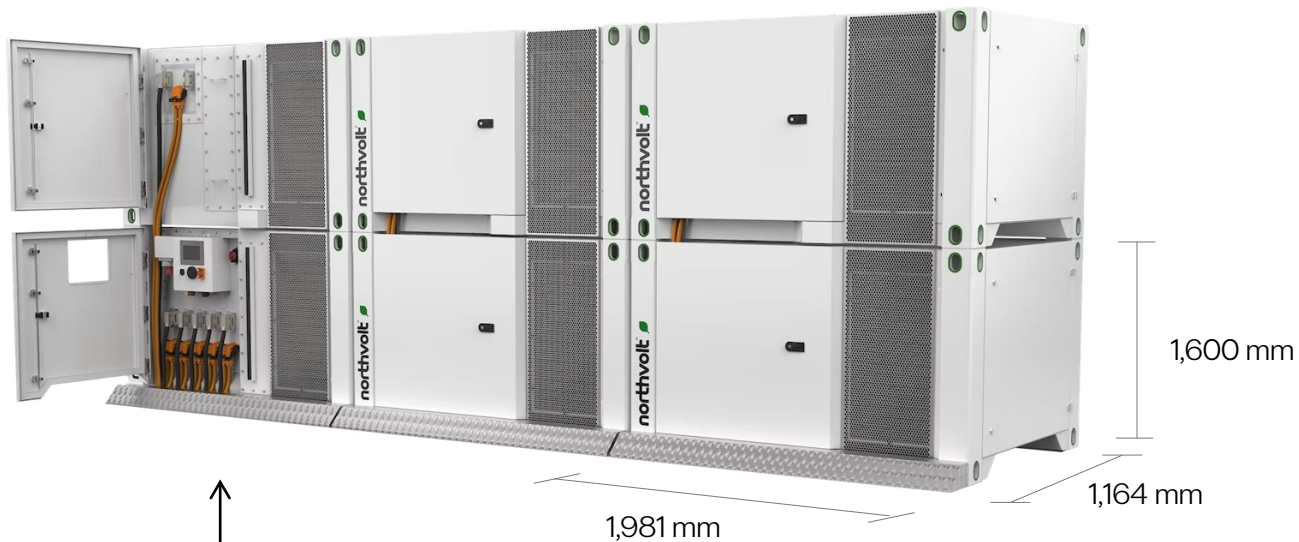
- Enable EV charging at off-grid locations
- Grid deployment to rapid peak shave
- Supply sufficient energy for high power outputs during fast DC charging

# Voltpack Mobile System

Mobile and scalable energy storage system

## Voltpack Mobile - Battery

Scalable from 281 kWh to 1,405 kWh



## Volthub Grid

AC grid interface of 225 kVA

## Key features



### Scalable

From 281 kWh to 1,405 kWh to fit the needs of every deployment.



### Safe & rugged

Incorporates safety at all levels of the design.



### Flexible

Multiple applications within virtually any circumstance.



### Mobile

Rugged hardware, quick connectors & easy handling features.



### Sustainable

No carbon or noise emissions.



### Cloud connected

Full visibility through Northcloud.

# Solving the electric construction site challenge



## Augment weak grids

- + Reduce dependence on grid
- + Increase power capacity at site
- + Slowly recharge during off-peak hours



## Charge vehicles on site

- + Mobile charging station
- + Enable longer working hours



## Peak shaving large loads

- + Limit peak power requirements
- + Enable use of larger equipment
- + Optimize generator operation



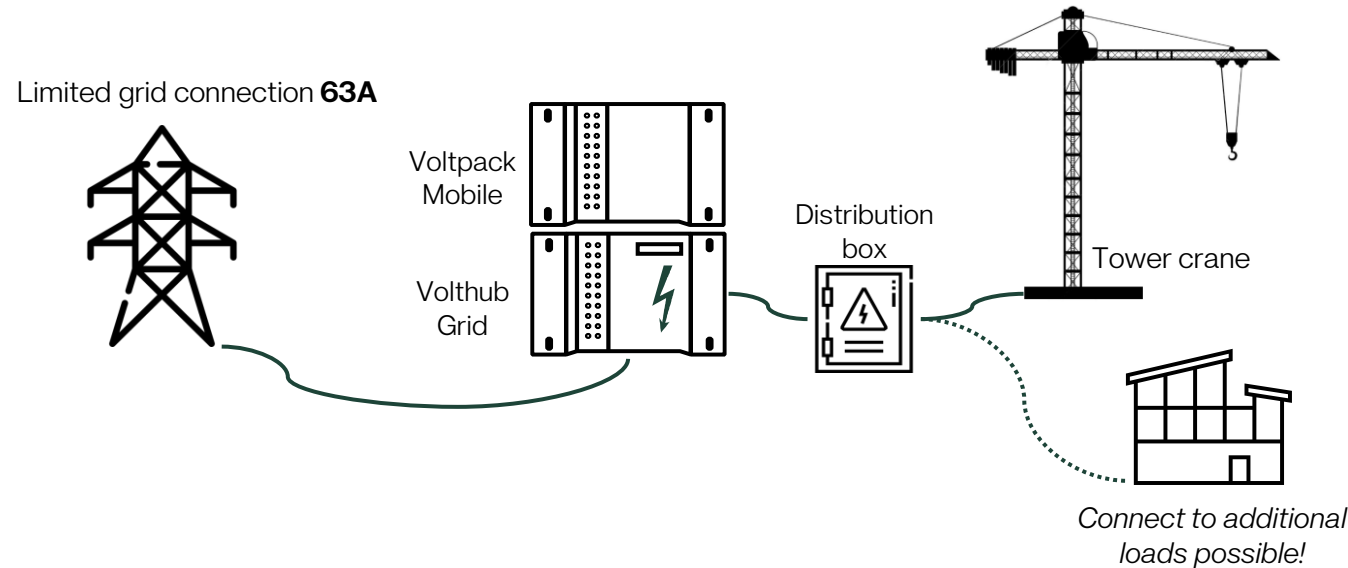
## Replace diesel generators

- + Green power without grid connection
- + Reduce noise emissions
- + Power for temporary sites

## Not enough power from grid

- Not enough power during initial construction phase
- Powering cranes (high power demand peaks)

### VMS powering tower crane in central Stockholm



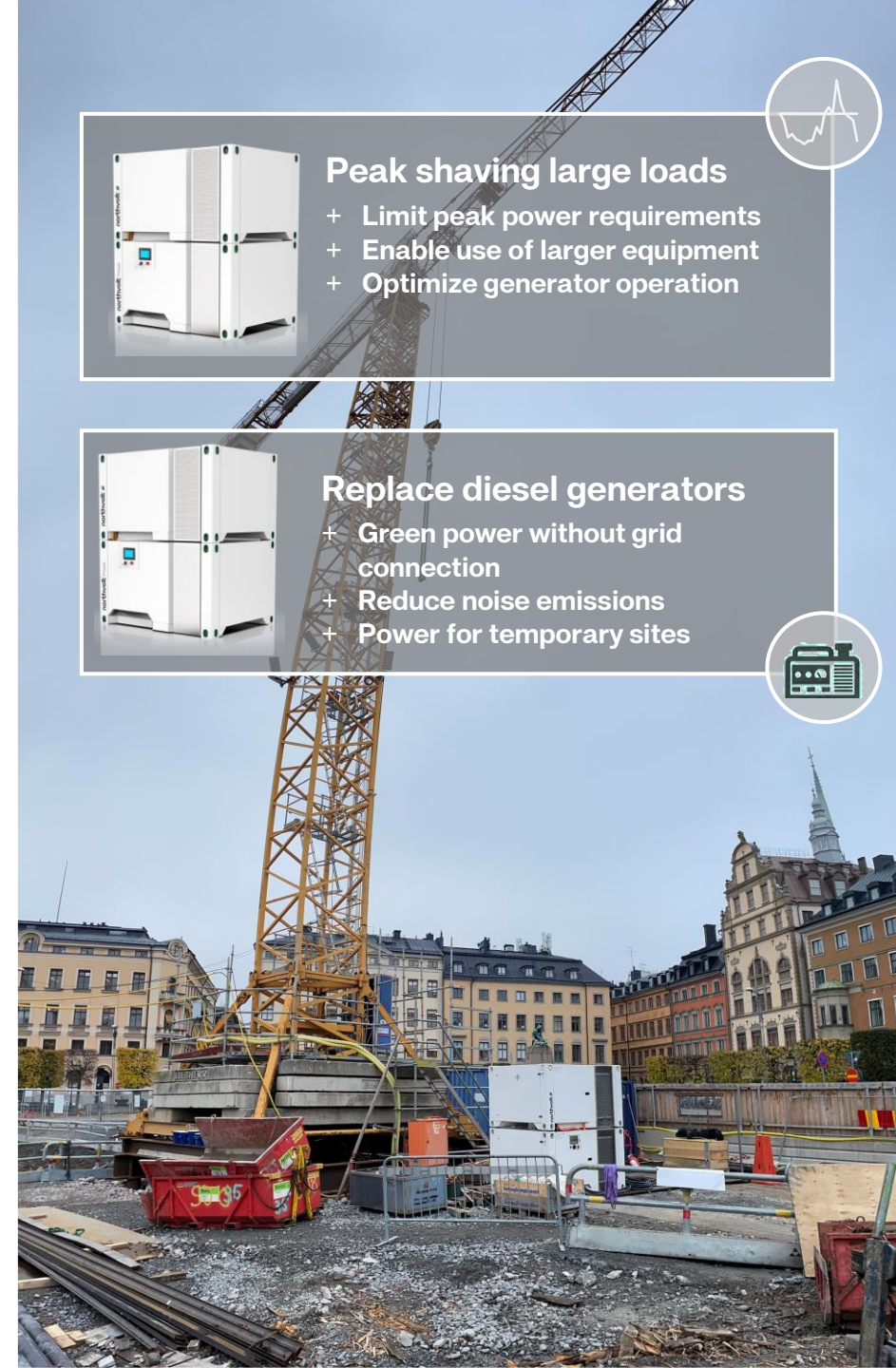
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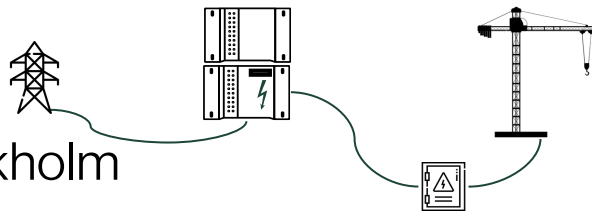
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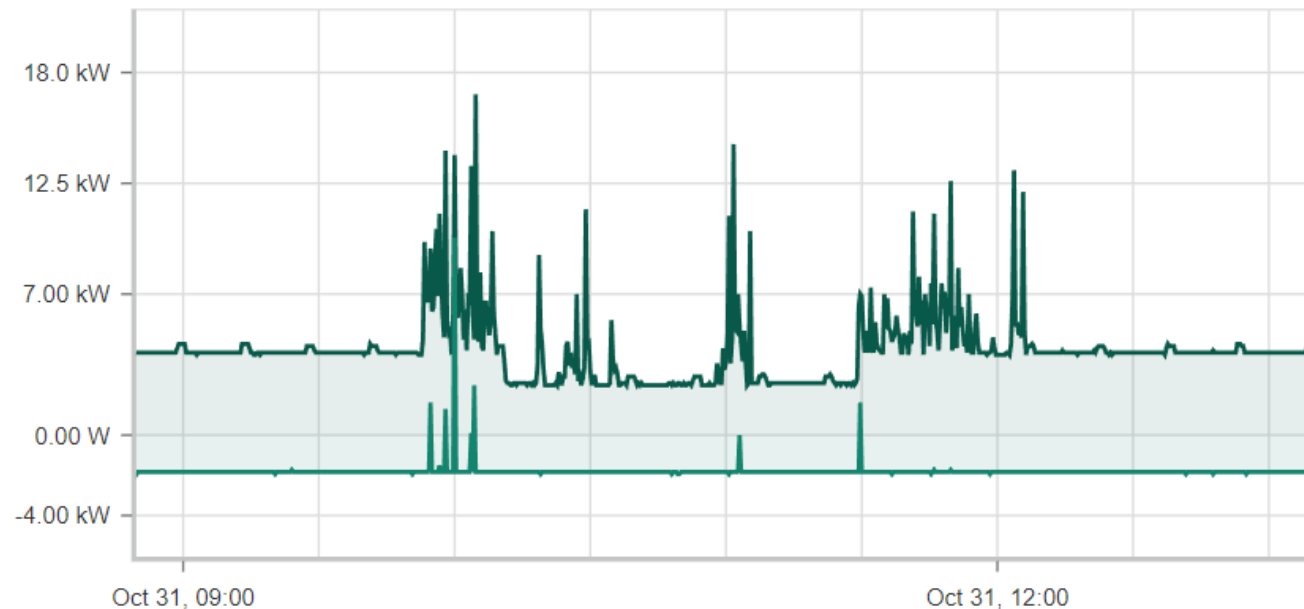


# Not enough power from grid

## VMS powering tower crane in central Stockholm



### System Power



VHG-00013 ● Inverter Output ● Grid Input

Contact us: [VMS@northvolt.com](mailto:VMS@northvolt.com)

### Power data:

- Working cycle: 28okt-7nov
  - Daily work: 07.00-18.00
- Grid connection: 63 A
- Peak power demand: ~ 30kW

To ensure max power demand without an energy storage customer would need to use a 100kVA diesel generator as back-up. Running most of the time in idle. Consuming up to 14liter per hour

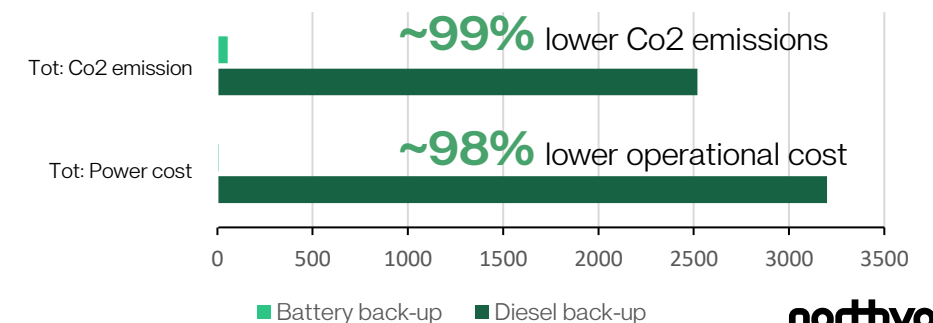
### Power data with diesel back-up:

- Working shift: 11 hours/day for 10days
- Diesel consumed: 1540 litres
- Fuel cost: €3'900
- Co2 emissions released: 4'400 kg
- Service cost: 500h €500

### Going electric:

- Approximated electricity cost: €54
- Approximated Co2 emissions released: 8,2 kg

### Monthly consumption



MAKE OIL  
HISTORY.