



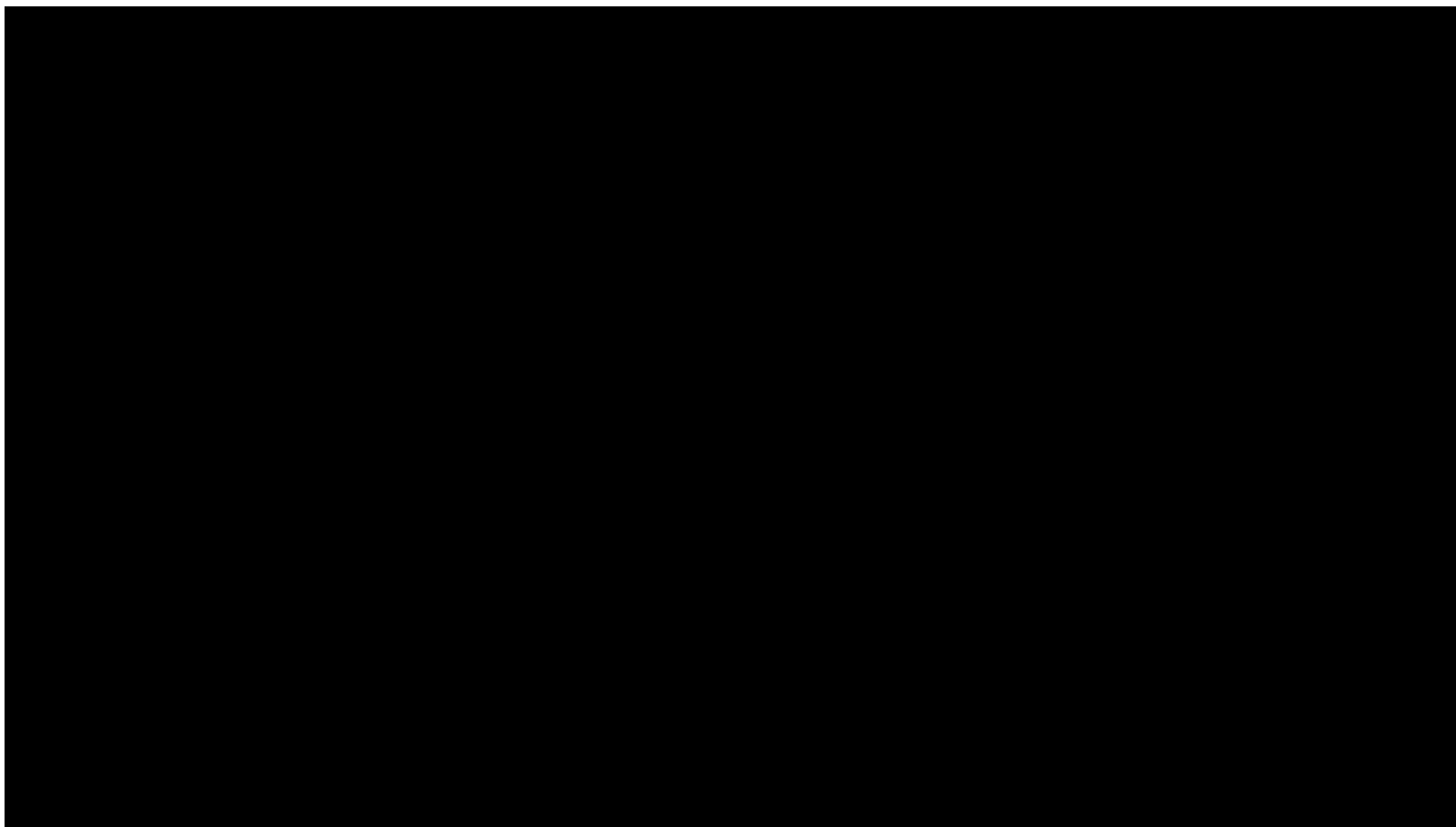
Atlas Copco



The future power grid at a construction site by Atlas Copco

Marketing Team

The Power Island



Moving towards...

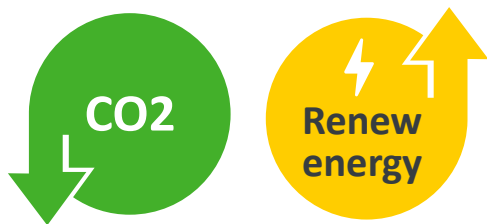
WHY?

Disruptive energy chain era

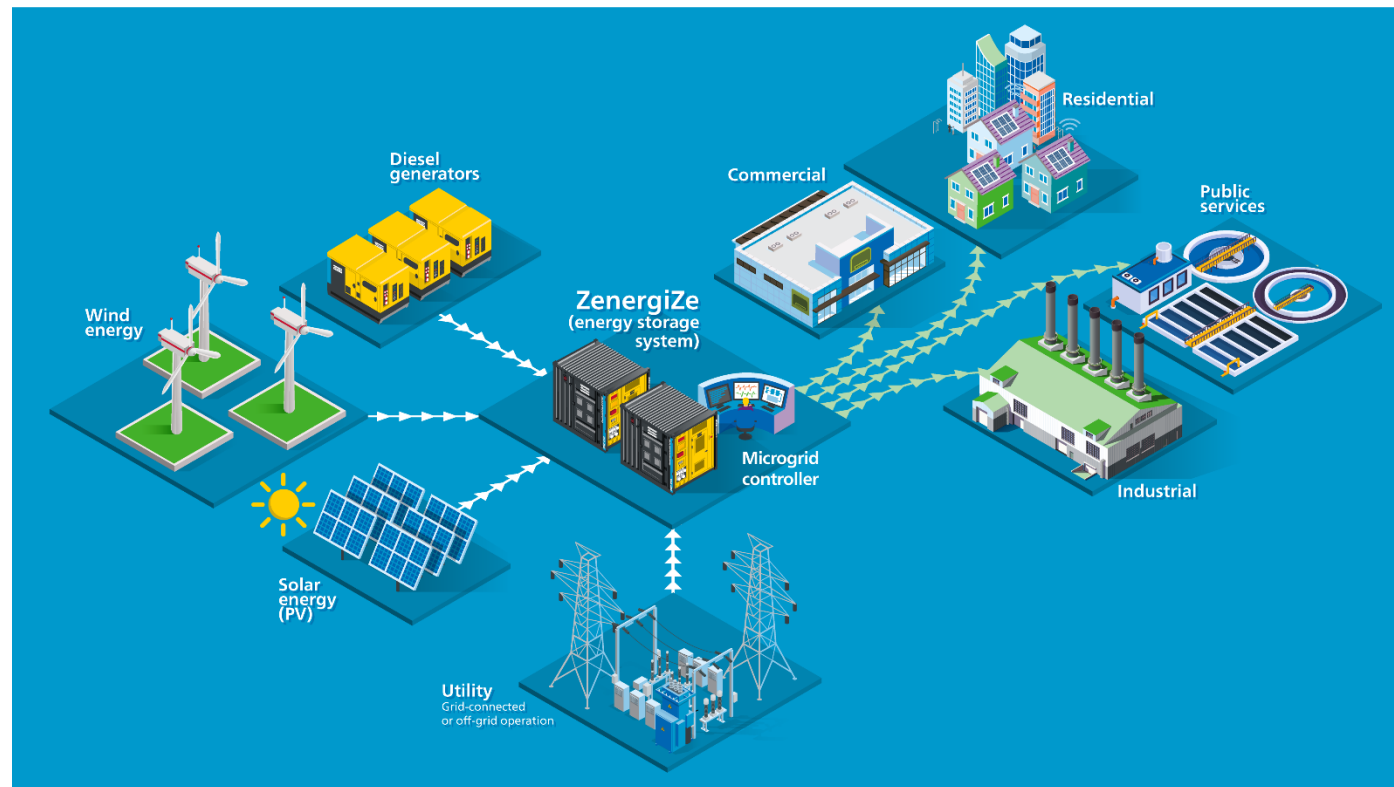
Generation - many small producers

Transmission - energy storage

Decentralization of the energy
Climate change plan



Smart and **digital** grids



How to reduce carbon footprint?



Non-Road Engines
account for 10% of
emissions



ZERO NOISE
EMISSIONS
FUEL CONSUMPTION



















Transforming to Sustainable Energy Solutions

Power



Our ESS portfolio

Application	<div> CONSTRUCTION</div> <div> RENTAL</div> <div> TELECOM</div> <div> DATA CENTER</div> <div> POWER PLANT</div> <div> EVENTS</div> <div> TELECOM</div> <div> RENEWABLES</div> <div> CONSTRUCTION</div> <div> MOTORS</div>					
Power Energy	45 KVA 45 kWh	15 KVA 45 kWh	100 KVA 575 kWh	150 KVA 575 kWh	250 KVA 575 kWh	500 KVA 250 kWh
Product	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

**All the ZBC models can be adjusted in the same machine at 60Hz 380V*

Use cases around the world

Telecom



Hybrid with solar

Construction/ noise reduction



Energy Booster

Tunneling/Mining



Metropolitan

Construction/Electric motors



Utilities



Off Shore



Construction-Crane



Hybrid grid job



Shipyard hybrid



Applications in construction site

Stand alone

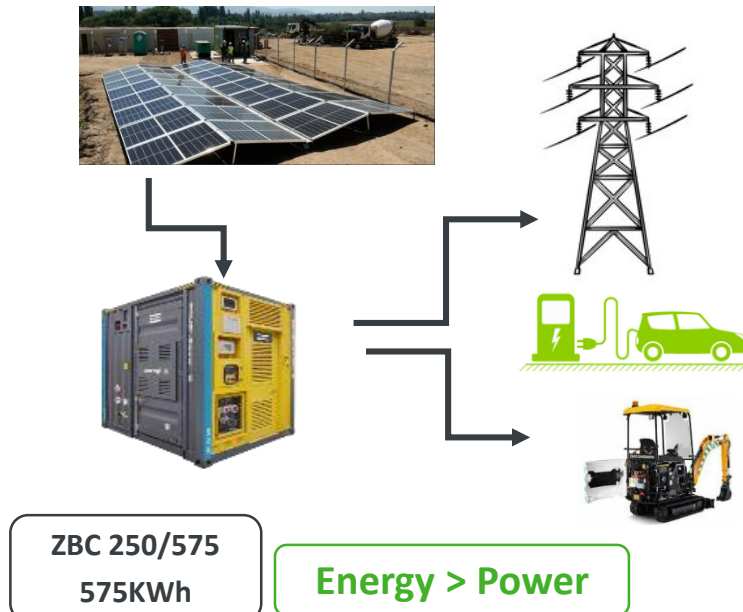
Grid Powered:

- What are the applications for grid powered mode?
 - Short-term power boost



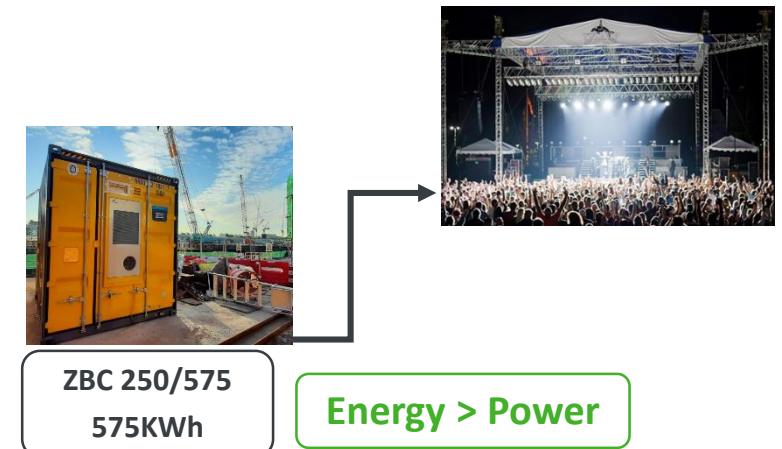
Renewable Powered:

- Powered solely by renewables
 - EV Charging
 - Peak shaving



Island mode:

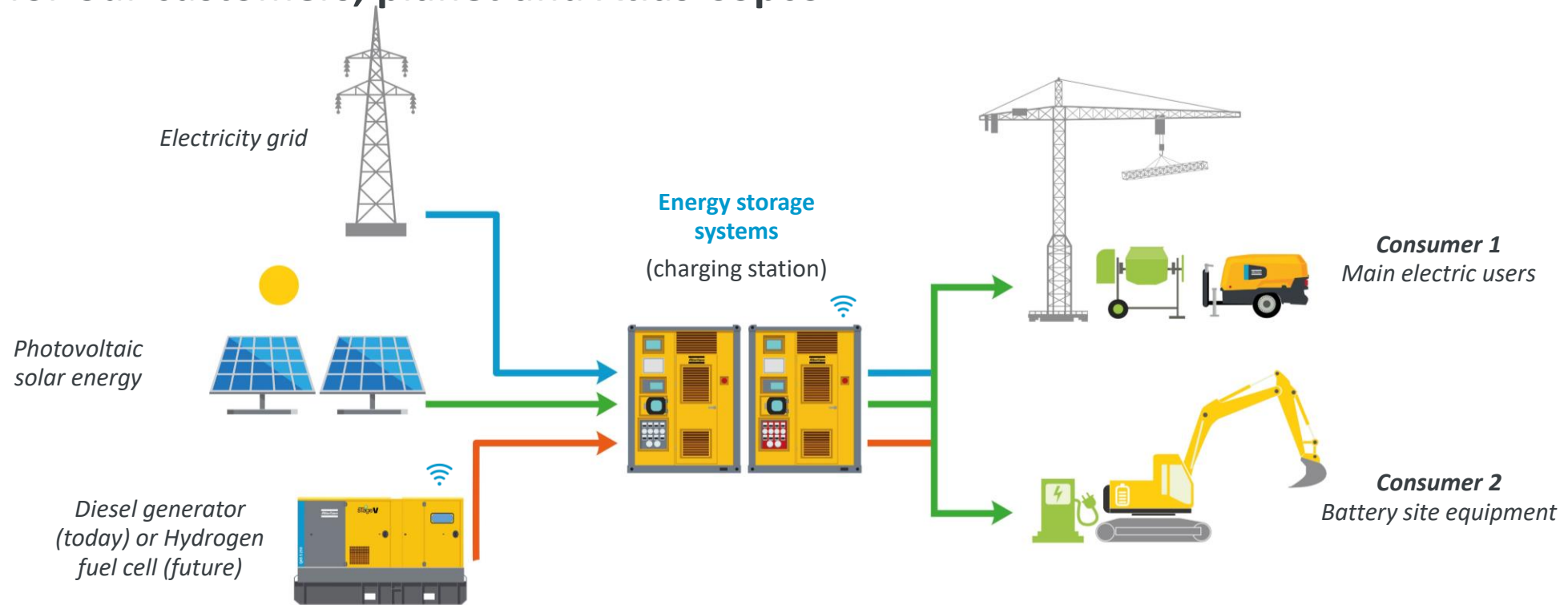
- Operate as complete "island"
- No recharge from any source
 - Only energy is supplied from battery storage
- Used for short periods events



ZERO NOISE
EMISSIONS
FUEL CONSUMPTION

Center piece in the construction site of the future

Better for our customers, planet and Atlas Copco



Current Situation

- On or Off Grid
- Cases of oversized power versus customer needs
- Fluctuating Power / Load Curve
- Diesel Site Equipment
- Impact on environment from emissions
- Noise levels can be disruptive in certain environments

Solution

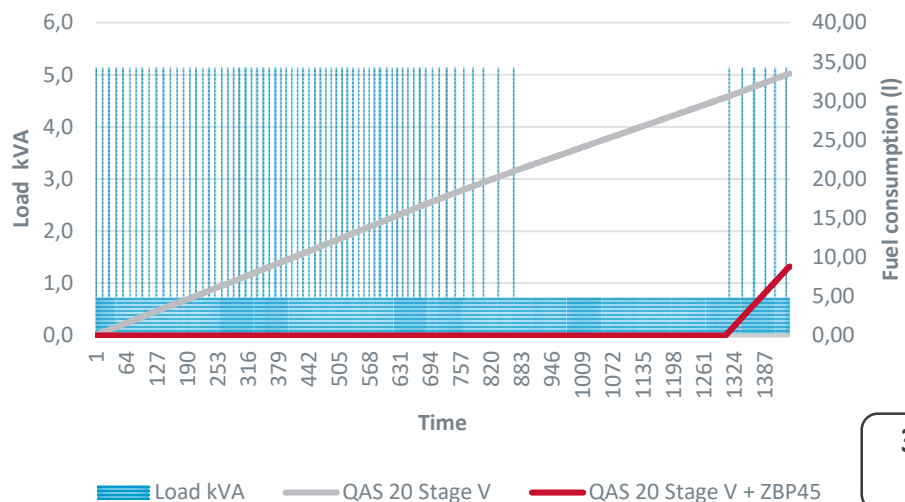
- Energy Storage Charging - Integrated transformer, inverter and switching function
- Output 11kW to 1MW
- Flexible, expandable storage
- 20kWh to 2.4MWh per unit

Result

- Electrification of Construction site of the future
- CO2 reduction
- Battery equipment with charging solution on or off grid – Connectivity / remote monitoring
- Emission Free Inner City sites
- No Infrastructure charges
- New Rental Concept

Case study: Low loads

Below 5kW loads, monitoring 1 day, full working period 100 days



30-45kWh per day

Same size generator is considered for stand alone and hybrid calculations (20kVA)



Loads: construction site, telecom or events

74%
6,5 tons

LESS FUEL
& CO₂ emissions

85% vs 9%

GENSET
Average load

91%
2.100h

GENSET
running hours saved

1 cycle
Per day

HIGH
Productivity long life

Case study: Downsize generator by 50%

Example 2: low loads, with maximum power 400kW



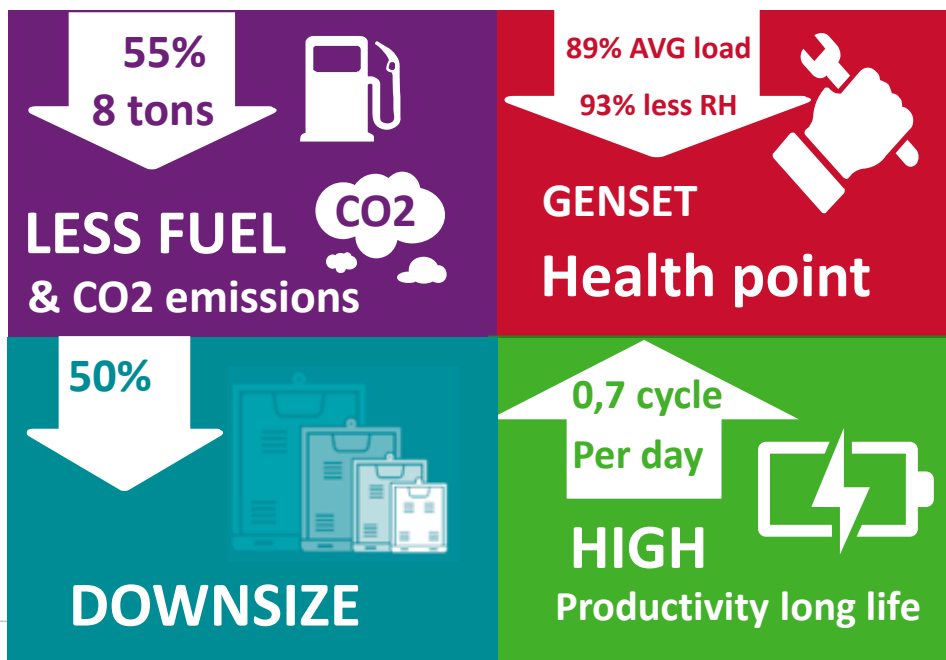
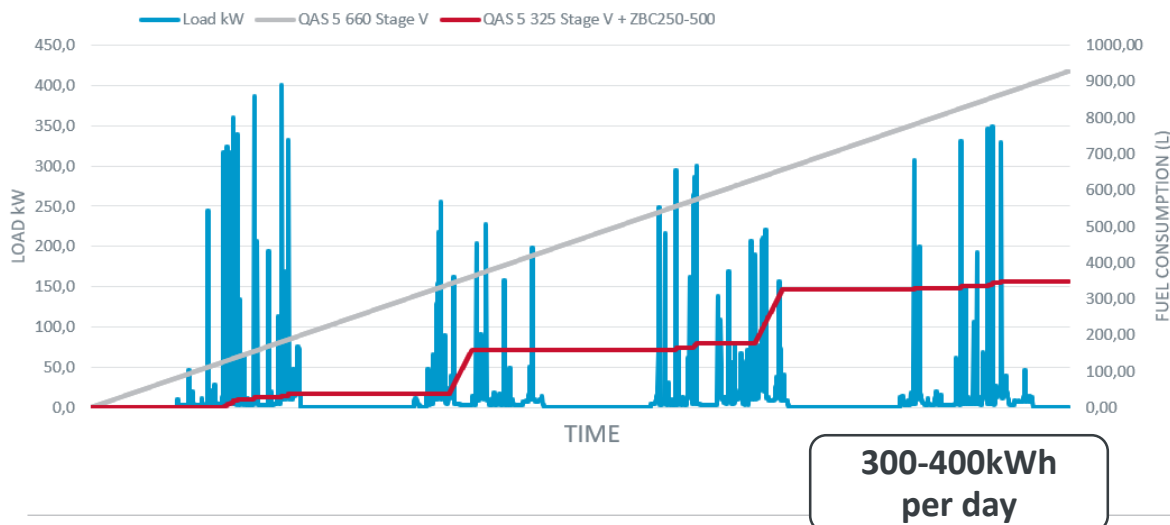
QAS 660
660kVA/520kW

Replaced by
half size genset

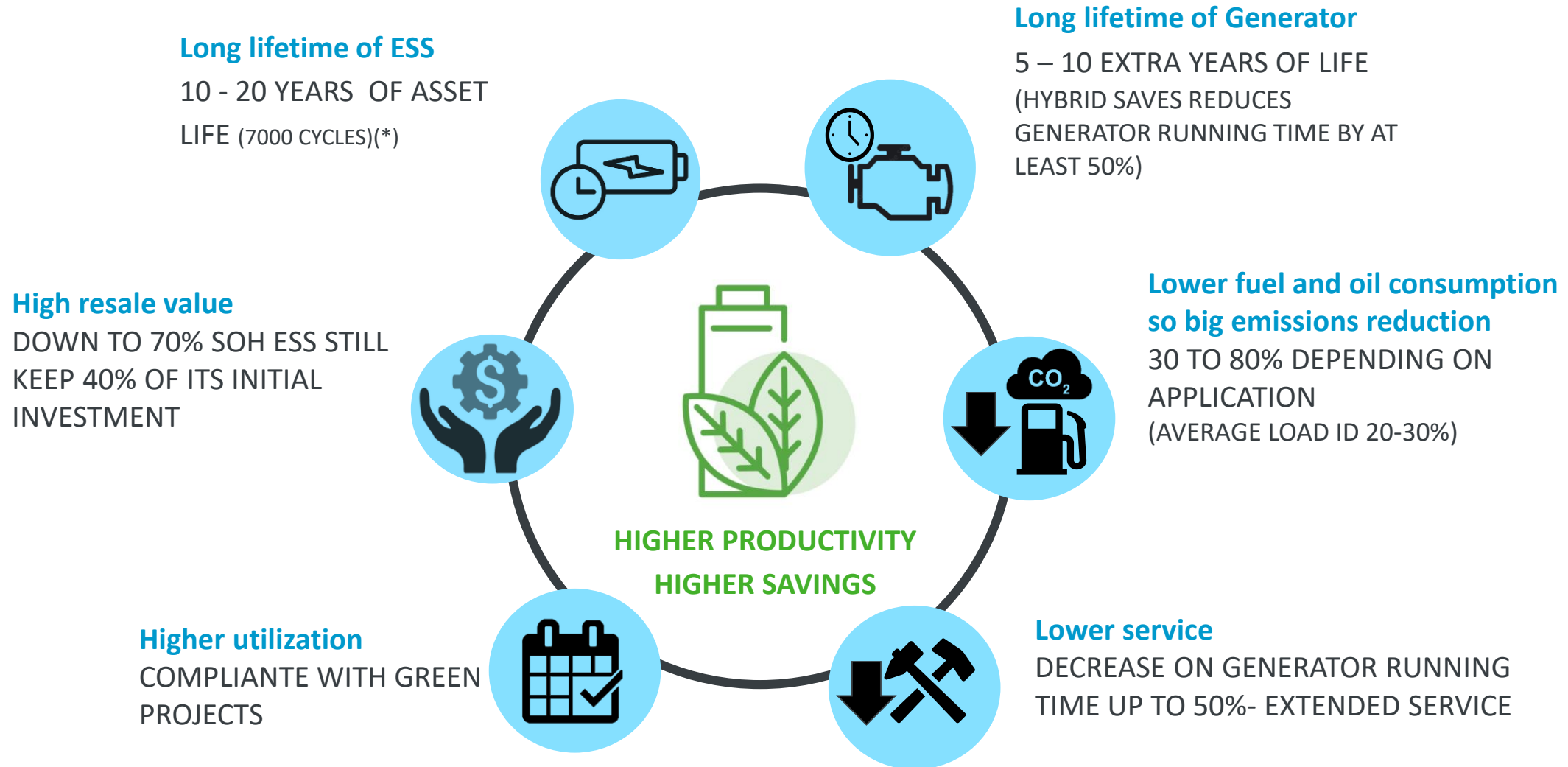
ZBC 500/250
250KWh



QAS 325
325kVA/260kW



Sustainable productivity



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