

BEEETRON

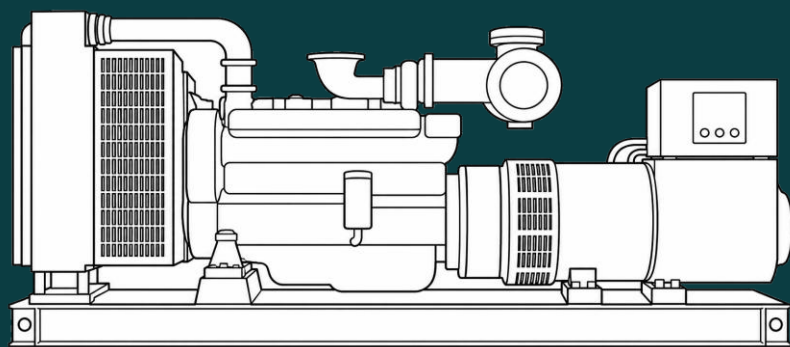
WE ELECTRIFY YOU

30% less fuel consumption
for power generators:

The Profit.

The more you run a Beetron generator, the more money you save.

Conventional genset

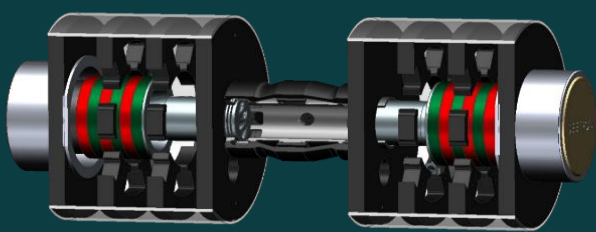


Fuel consumption
28 to 31 L/h at peak load
≈ 10 L/h at partial load

SAME ELECTRICAL OUTPUT

100 kW → 100 kW
28 to 31 L/h 22 L/h
- 6 to - 9 L/h | -21% to - 30%

BEETRON



Fuel consumption
22 L/h at peak load
≈ 6.5 L/h at partial load (- 35%)

ANNUAL IMPACT AT 7,500 OPERATING HOURS

45,000 L

less fuel / year

€90,000

lower fuel cost / year

119 t CO₂

avoided direct emissions / year

Why BEETRON can retain an advantage at part load

Conventional gensets are typically sized for peak demand and often run below their best-efficiency point. BEETRON can vary piston stroke and compression ratio with load, allowing the thermodynamic operating point to remain closer to optimum across a wider load range.

IMPORTANT DISTINCTION

21% = full-load benchmark shown above.
Up to ~35% = part-load potential, dependent on the load profile and reference genset.

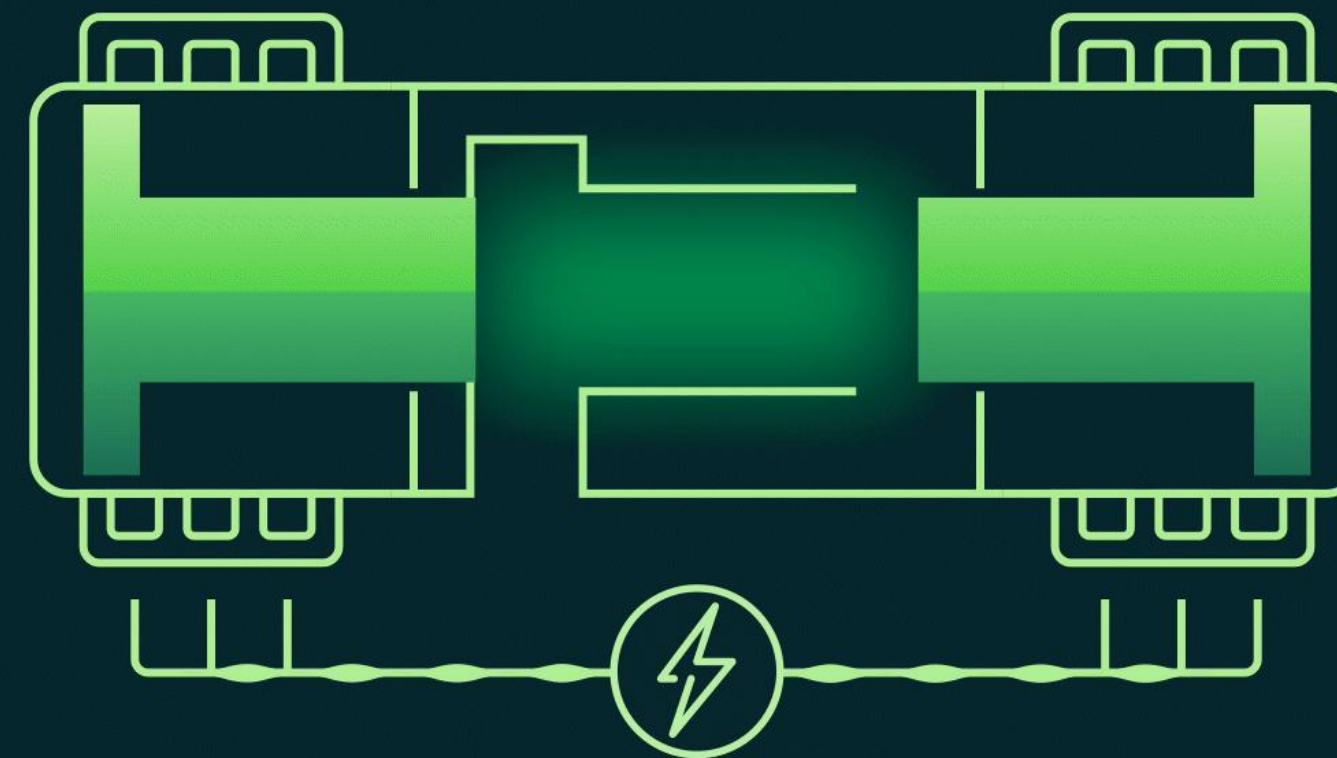


Assumptions: fuel price €2.00/L; 6 L/h delta × 7,500 h = 45,000 L/year; CO₂ factor 2.65 kg/L (direct combustion). Figures are illustrative and should be validated against the selected benchmark genset and duty cycle.

The Patented Technology.

Liquid and gaseous fuels
(diesel, gasoline, hydrogen,
methanol, natural gas, etc.)

Power Output: up to 100 kW
AC / DC current
Scalable



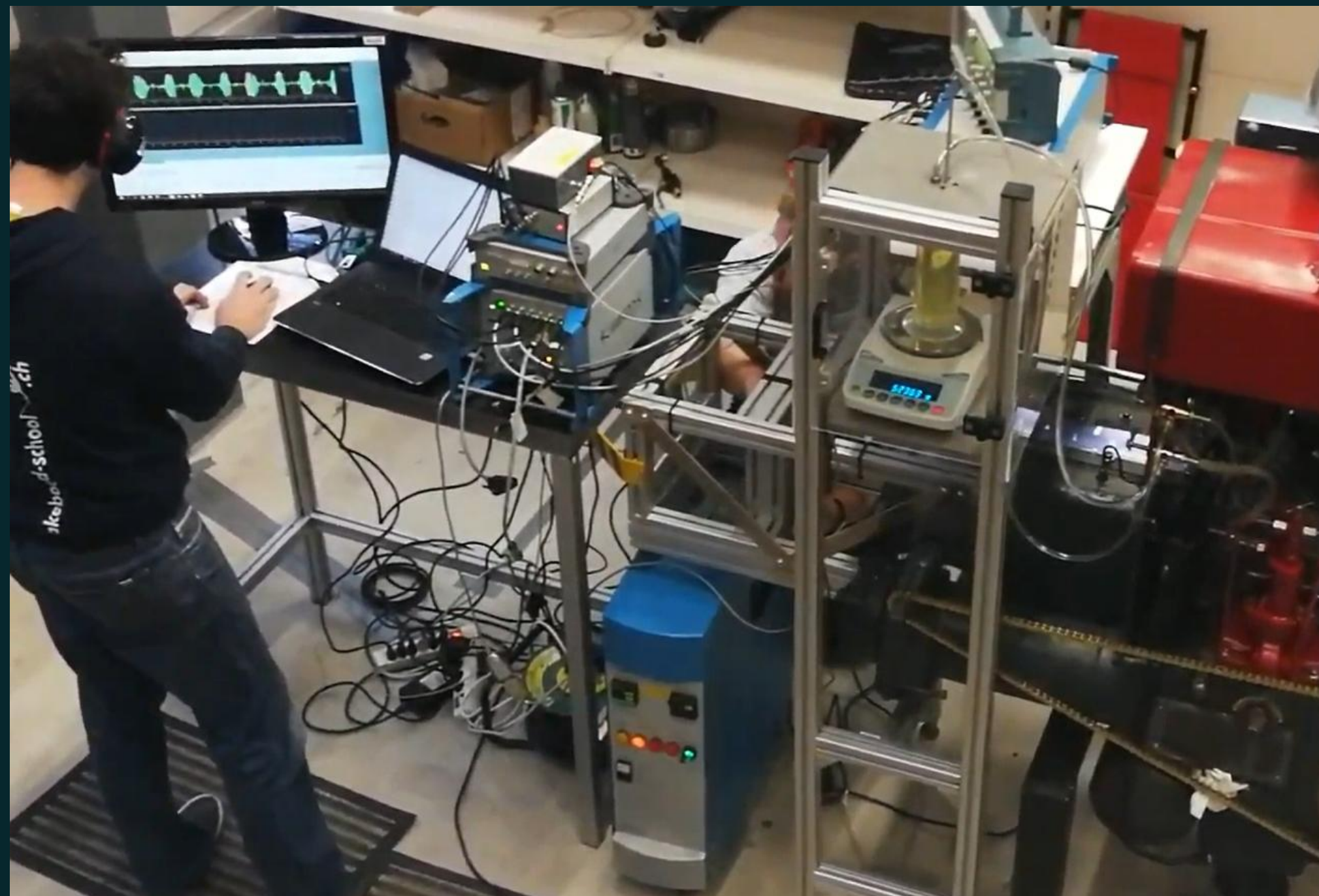
Pistons with permanent magnets
Magnetic induction in copper coils
>50% electrical efficiency

Central Reaction Chamber
Conversion of fuel into an
oscillating motion



Verification.

TRL 5 achieved: Technology achieving >50% electrical efficiency verified by the University of Applied Sciences Northwestern Switzerland (simulation, model validated by experiment).



Verified by the University of Applied Sciences Northwestern Switzerland :

- Test bench runs
- Simulation model development
- Reaction principle
- Oscillating piston motion
- Linear power generation



Fachhochschule
Nordwestschweiz

Next step: Integrated 125 kVA / 100-kW prototype on the test bench (to verify target specifications)

The Potential.



Phase 1:
Offgrid Telecom Towers



Phase 2:
CHP / Microgrids,
Heavy-Duty Offgrid



Phase 3:
Offgrid Charging, Marine, Range
Extender, Drones, etc.



Phase 1: Telecom Towers

TAM for Diesel Generators worldwide: 21–25 billion USD per year

SAM Diesel Generators for Off-Grid Telecom Towers: 3.2 billion USD per year

- Generators between 50 and 125 kVA (40–100 kW) dominate the market with a share of about 40%.
- The annual market size of the target market is estimated at USD 1.3 billion.



Telecommunications is a major consumer of diesel worldwide. India alone consumes approx. 700 Mio. liters of diesel per year just to power off-grid telecom transmission towers.

The global market for diesel generators for telecom towers is expected to double by 2035, reaching USD 3 billion- representing enormous potential for cost savings.

Key Regions: Asia-Pacific is the fastest-growing market, while North America and Africa are strongly represented by rural network infrastructures.

Sources:

Diesel Fired Telecom Generator Market Summary (MRFR)

Telecom Power Systems Market Key Takeaways (GMI)

Diesel Fired Telecom Generator Market (Research and Markets)



Competitive Advantage.

Strategic buyers gain access to a patented platform technology for highly efficient decentralized power generation:

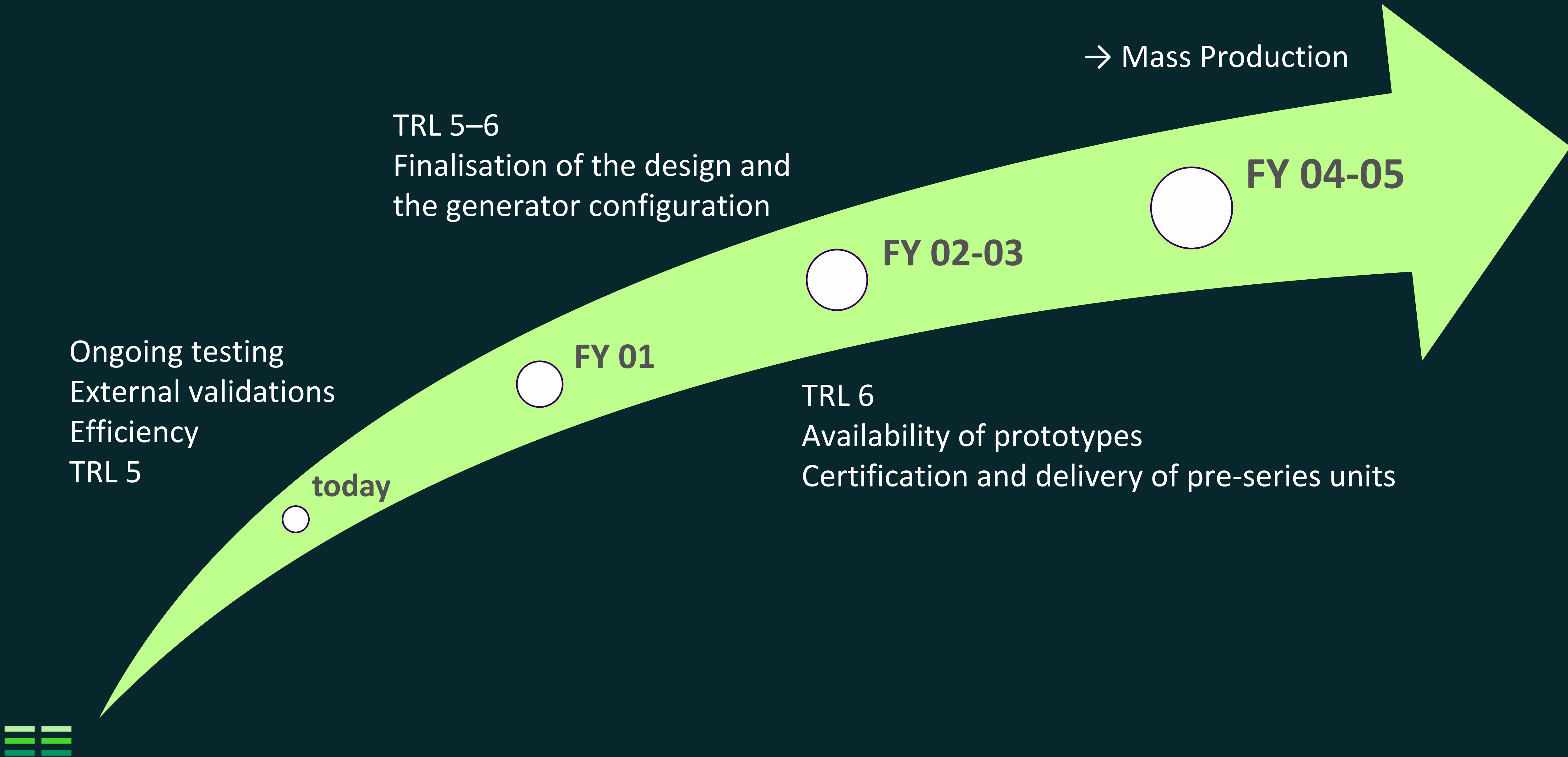
- Low Operating Costs
- Fuel Flexibility
- Efficiency Leadership

Business Model.

- Phase 1: Technology and IP companies (currently up to TRL 6/7)
- Phase 2: Sales of reference systems to OEMs and integrators
- Phase 3: Licence model / Energy-as-a-Service / etc.

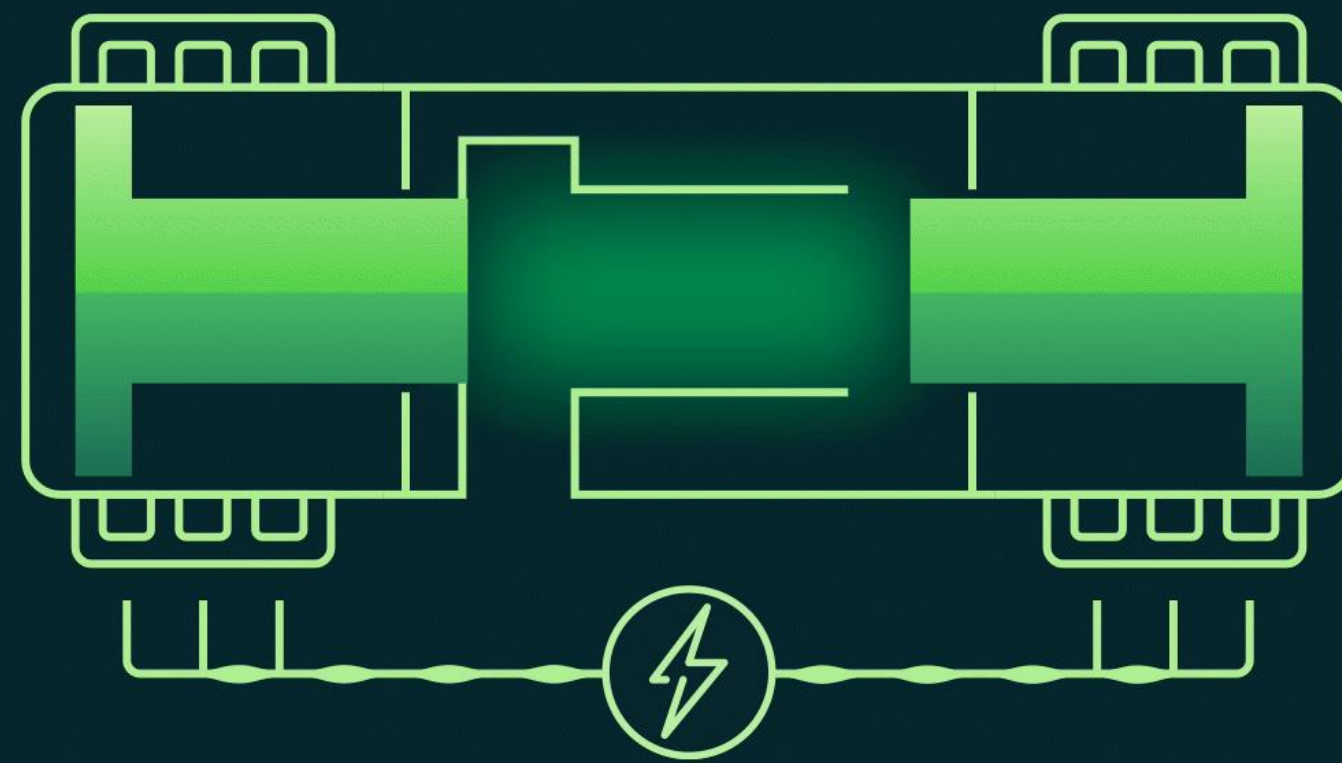


The Roadmap.



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www.beetron.ch

