

Eaton Microgrid Energy Systems



Our **vision** is to improve the
quality of life and the
environment through the use
of power management
technologies and services.

Eaton's solid presence in Africa

Dedicated diverse team

- **700** employees
- More than 100 distributors throughout Africa
- **5** offices across the continent
- **2** service hubs
- Engineering Services
 - Study | Design | Build | Support

Regional manufacturing capability

- **200k ft²** of manufacturing space in South Africa and Morocco
- Africa based engineering services
- **BBBEE Level 1** certification

A broad portfolio supplemented by “made for Africa” products and services

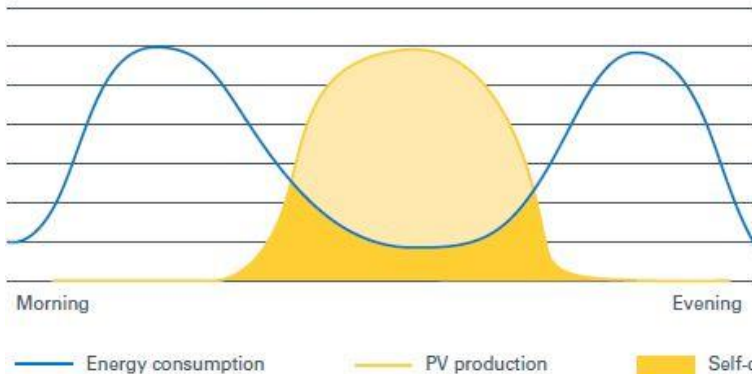
- **IEC** and **UL** approved products
- Historical brands in Africa since **1927**
- Local manufacturing & engineering of Low Voltage, Medium Voltage and Power Quality products built for Africa



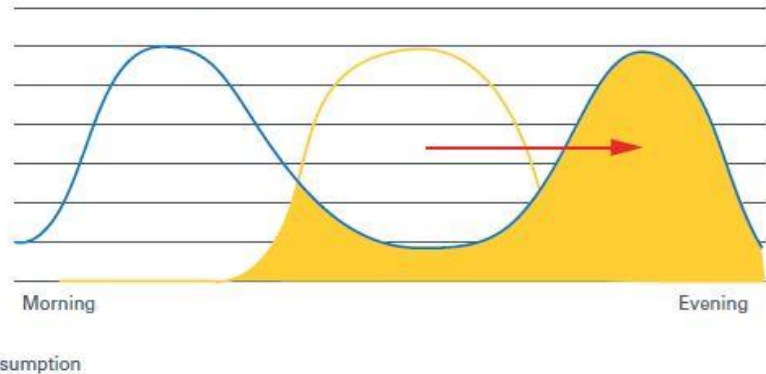
Why not solar alone?

Microgrids	vs	Solar Alone
Energy dispatchable		Renewables are intermittent, not dispatchable
Excess solar stored for later use – and keeps solar on even when grid goes off.		Excess solar curtailed by rule or when grid goes out
Configurable for many load profiles		Load profile must track sun to capture value

Solar self-consumption without energy storage

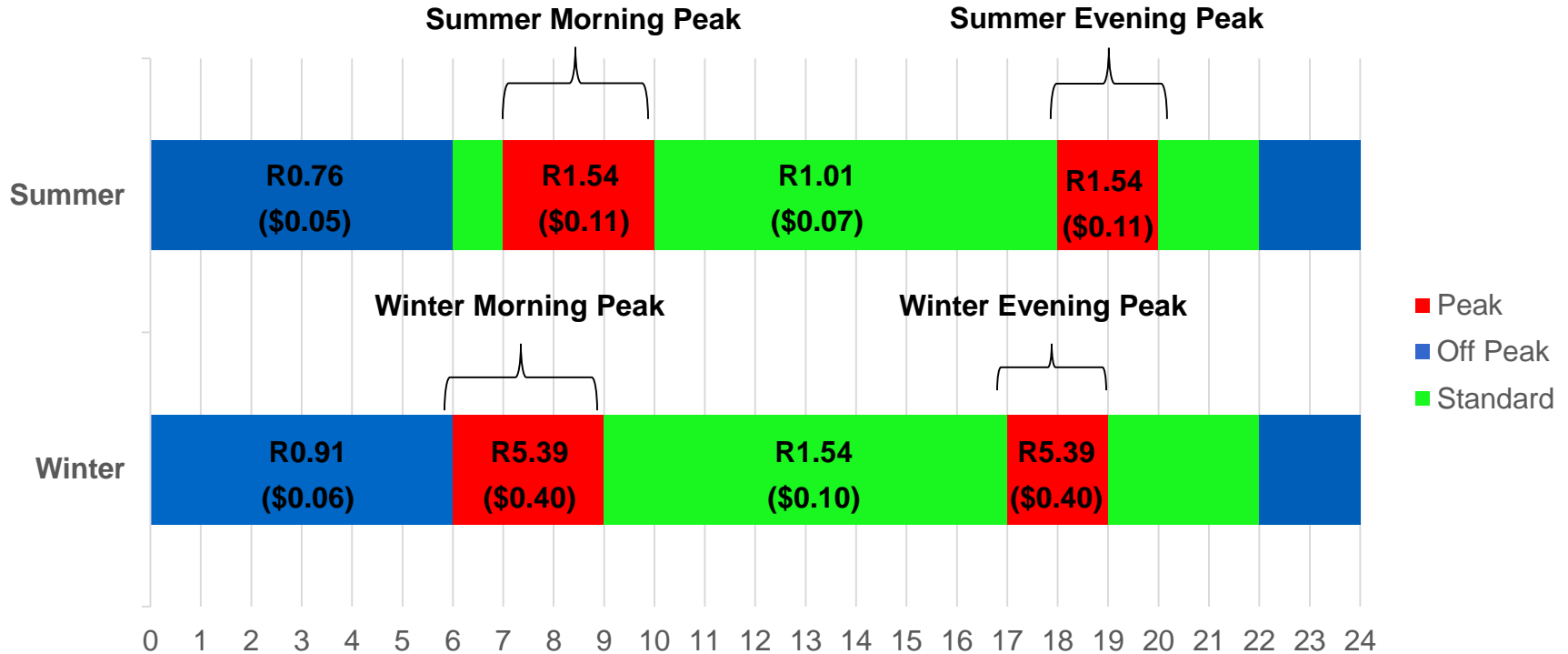


Solar self-consumption with energy storage

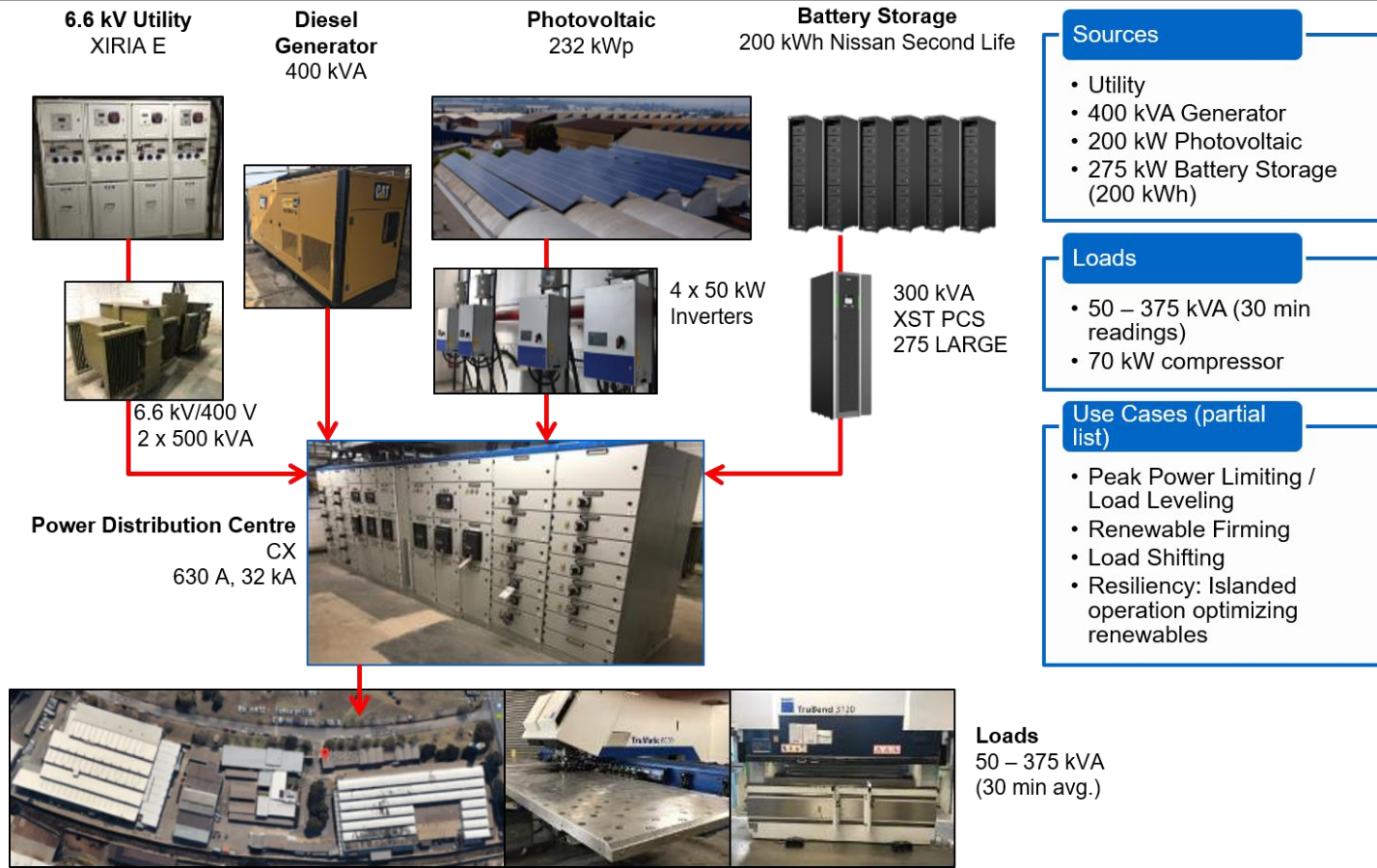




Wadeville Peak Rate Charges

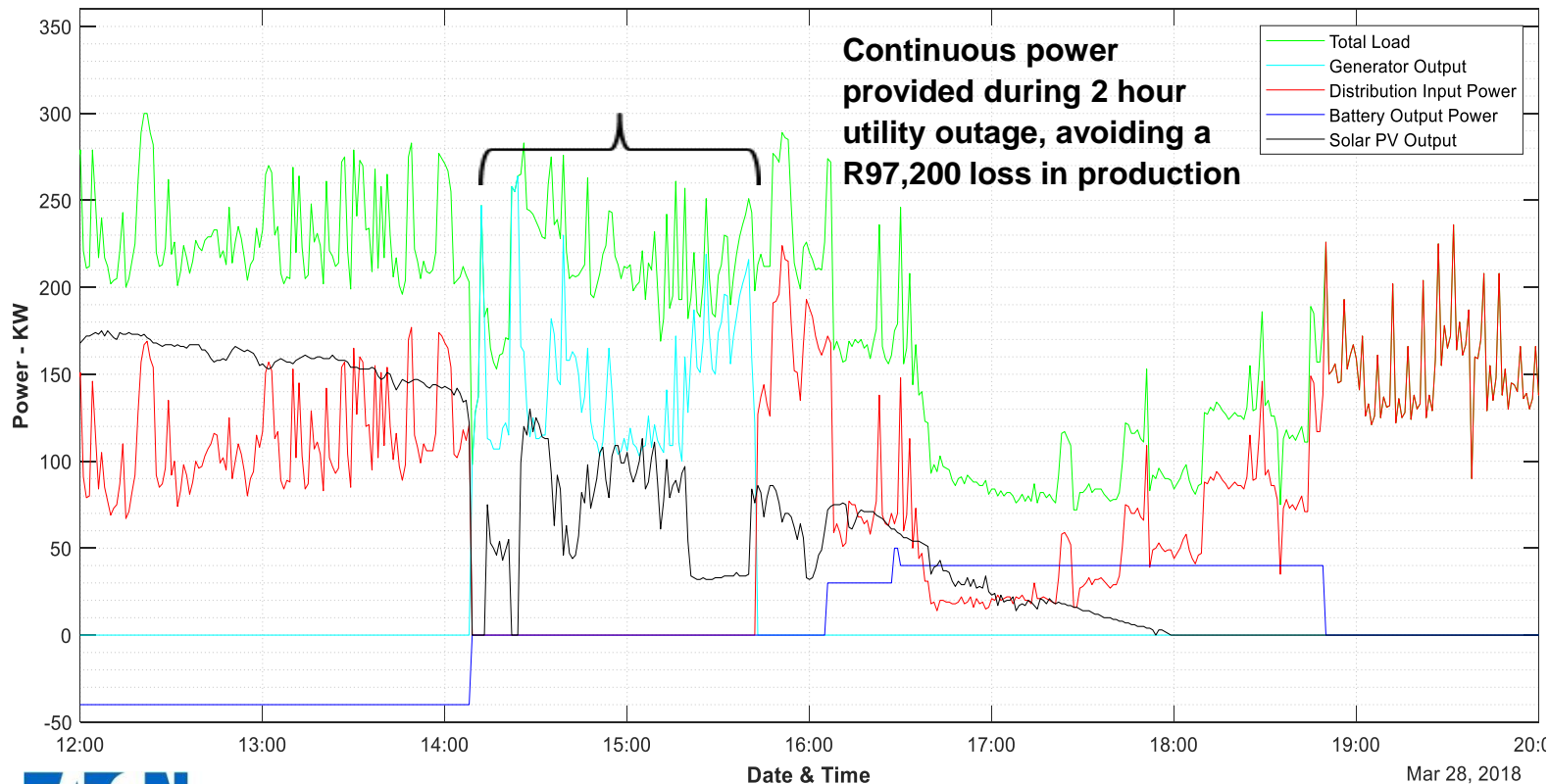


Key Hardware Components of the Wadeville Microgrid



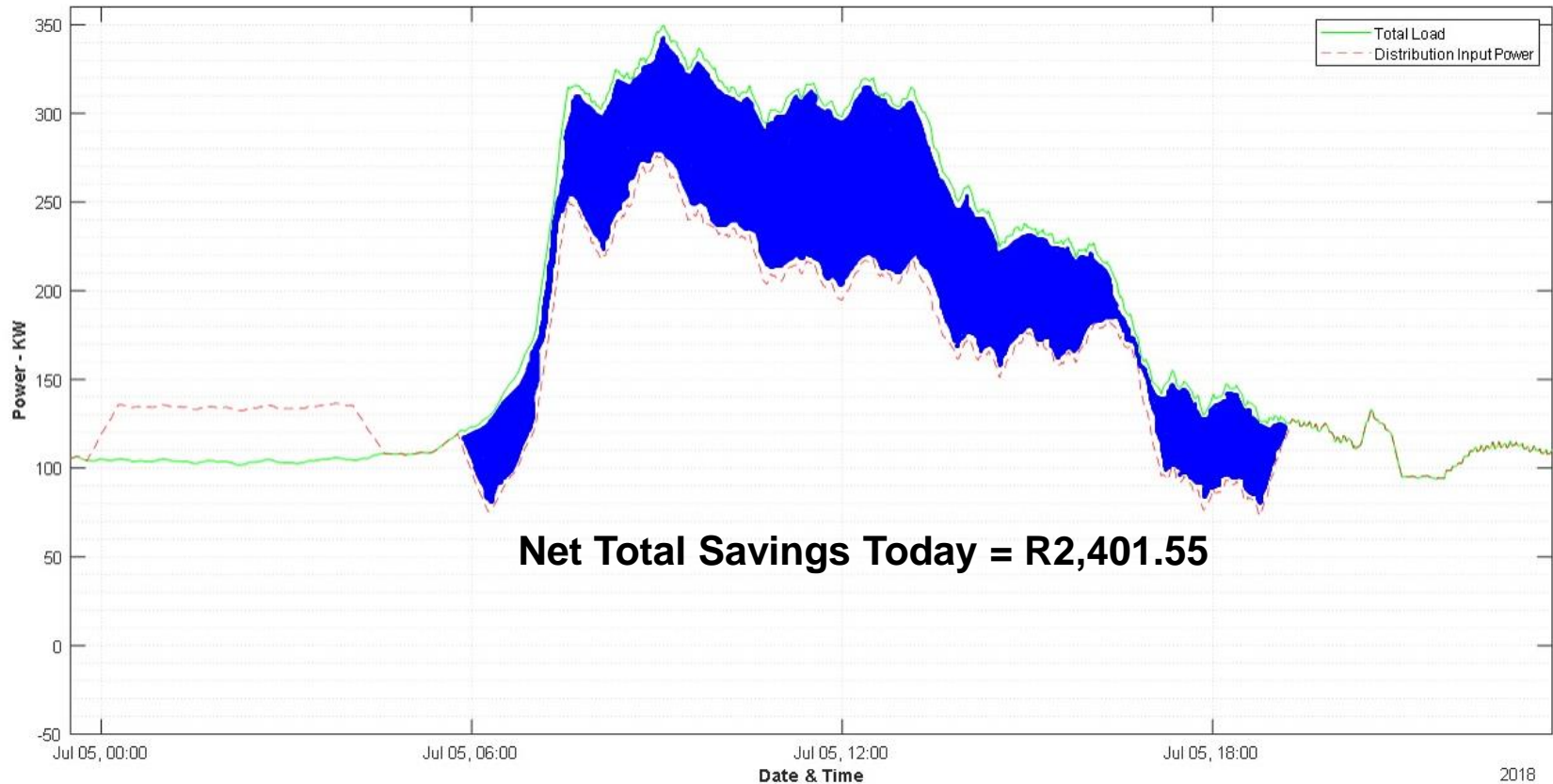
Value Stream 1: Outage Avoidance

Eliminate Production Losses Due to Power Outages

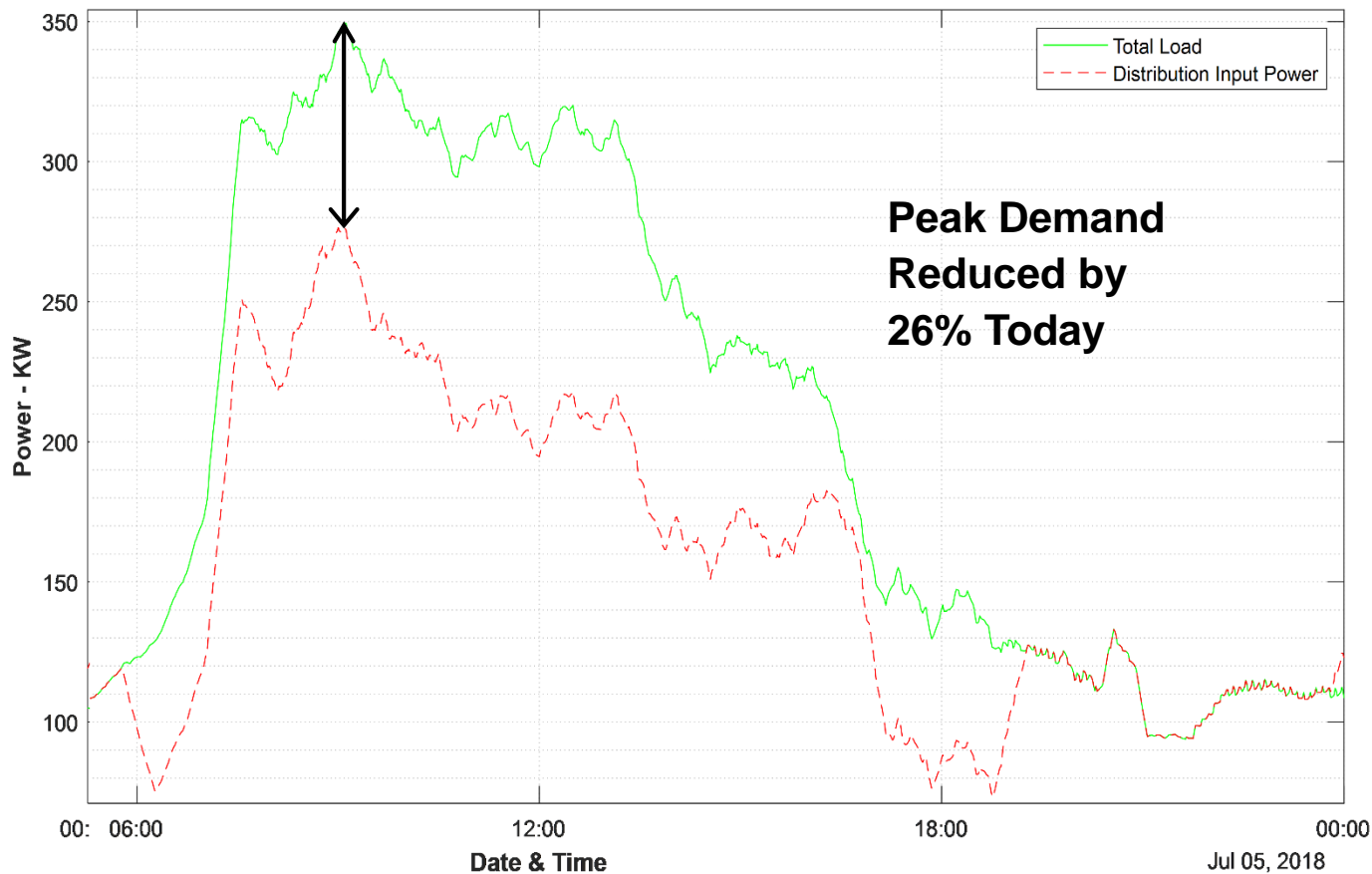


Value Stream 2: Offset Energy Costs

Solar PV and Storage Reduce Total Grid Consumption

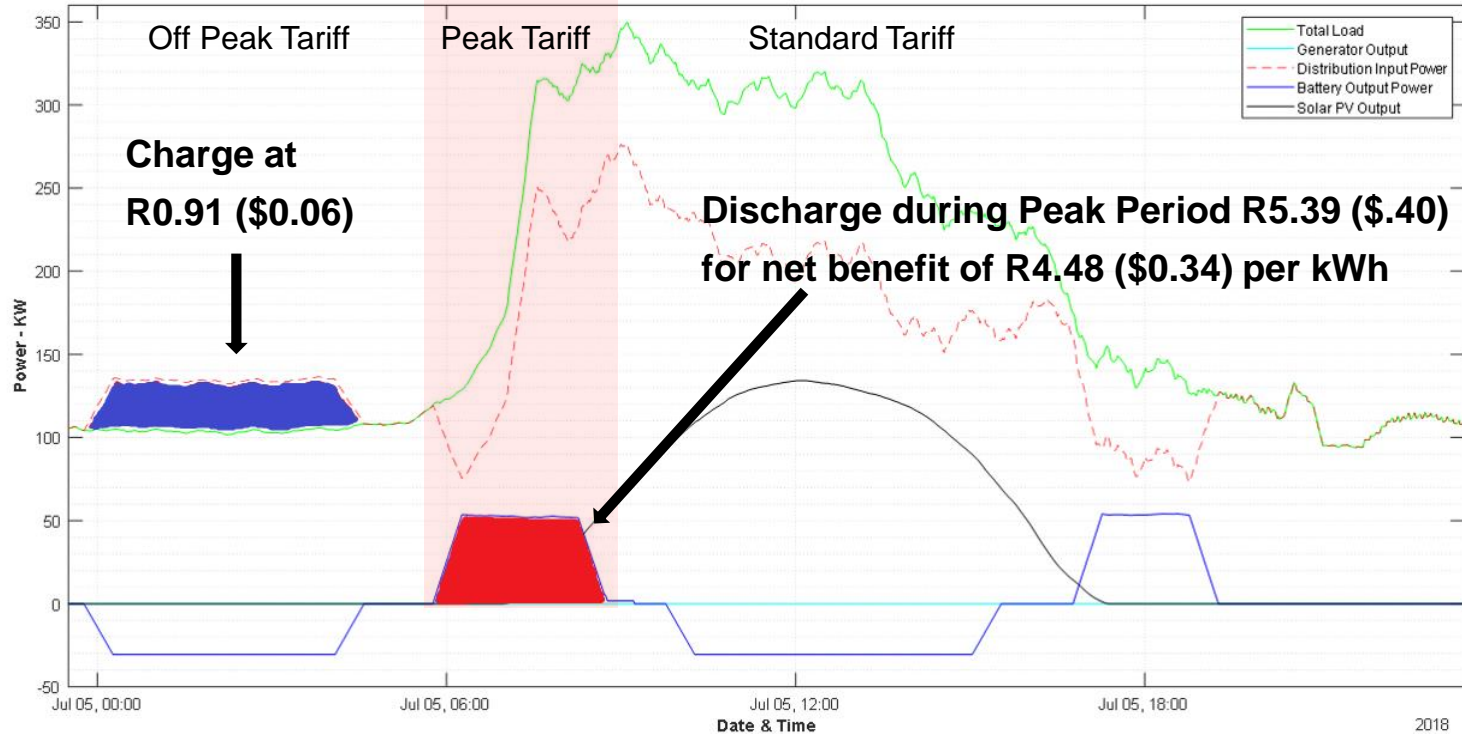


Value Stream 3: Peak Shaving Reduces Maximum Demand Charges



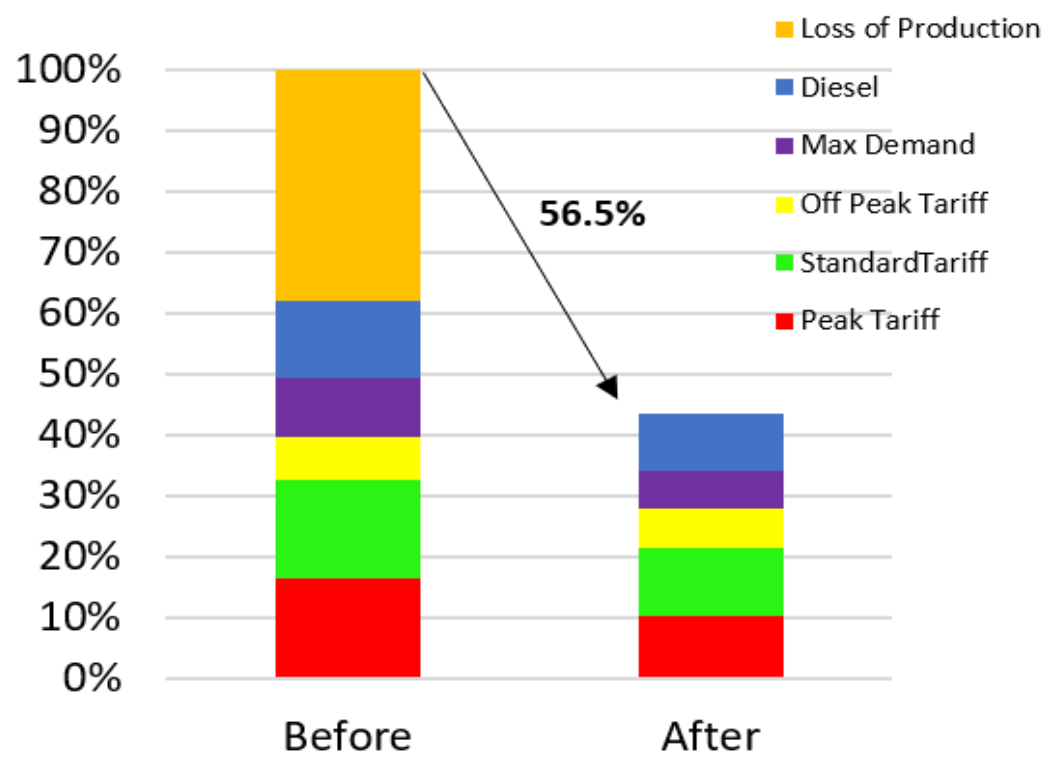
Value Stream 4: Energy Arbitrage

Reduce Grid Consumption when Costs are Highest



Combining the value streams over 12 months leads to significant savings

(Wadeville Microgrid generates 56% Operational Savings)



Electricity bill reduction of 30% total:

- 32.4% Standard
- 36.9% Peak
- 5.2% Off Peak
- 36.4% Max Demand

Diesel cost reduced 26%

Losses due to power cut eliminated:

- Uptime Savings: 1,298,100 ZAR*

Environmental impacts:

- RE fraction 18.7%
- 11,812 Metric Tons CO₂ reduced

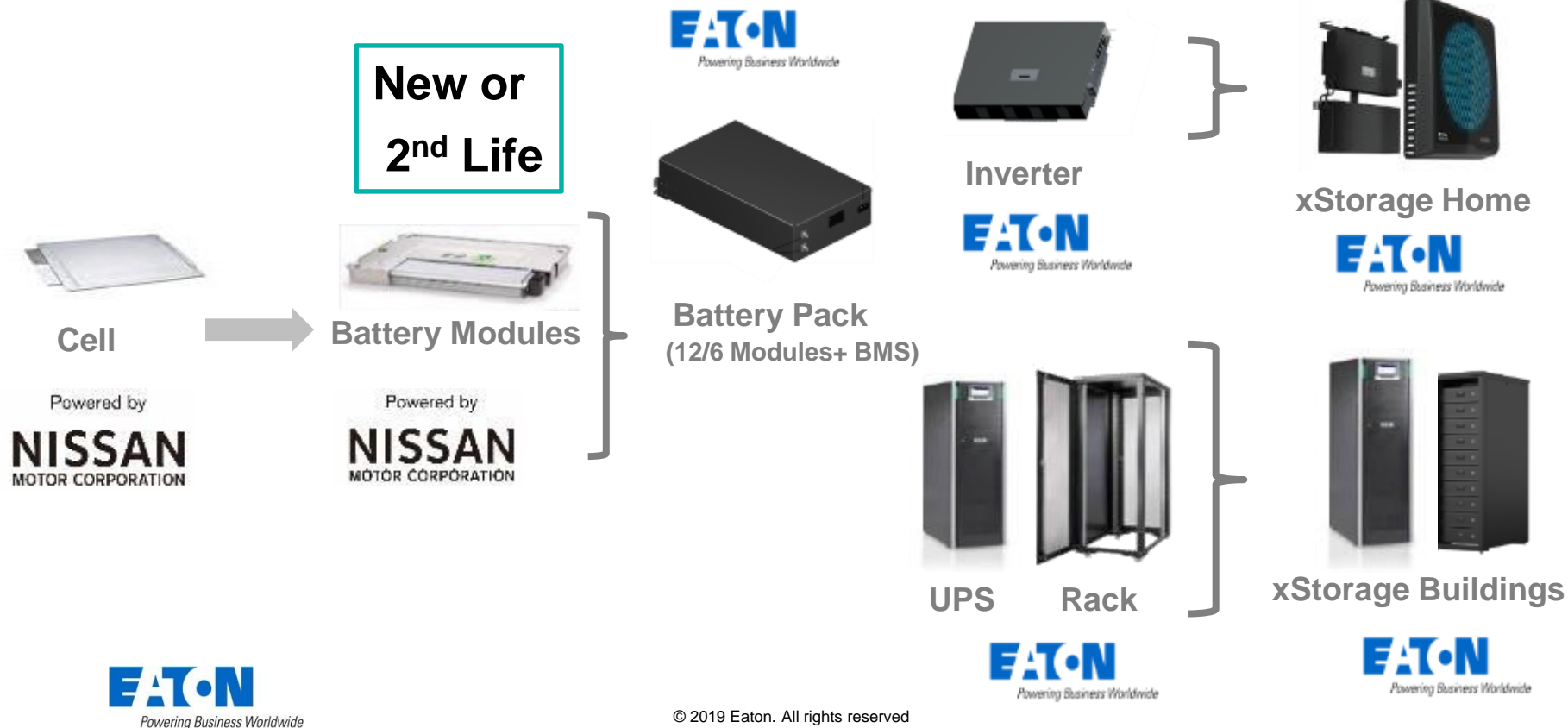
Multiple value streams stacked to reach a high ROI, and breakeven expected in less than 5 years

*Based on 33 outage hours over 12 months that directly impacted production (M-R 7:30am-4:30pm; F 7:30am-1pm)

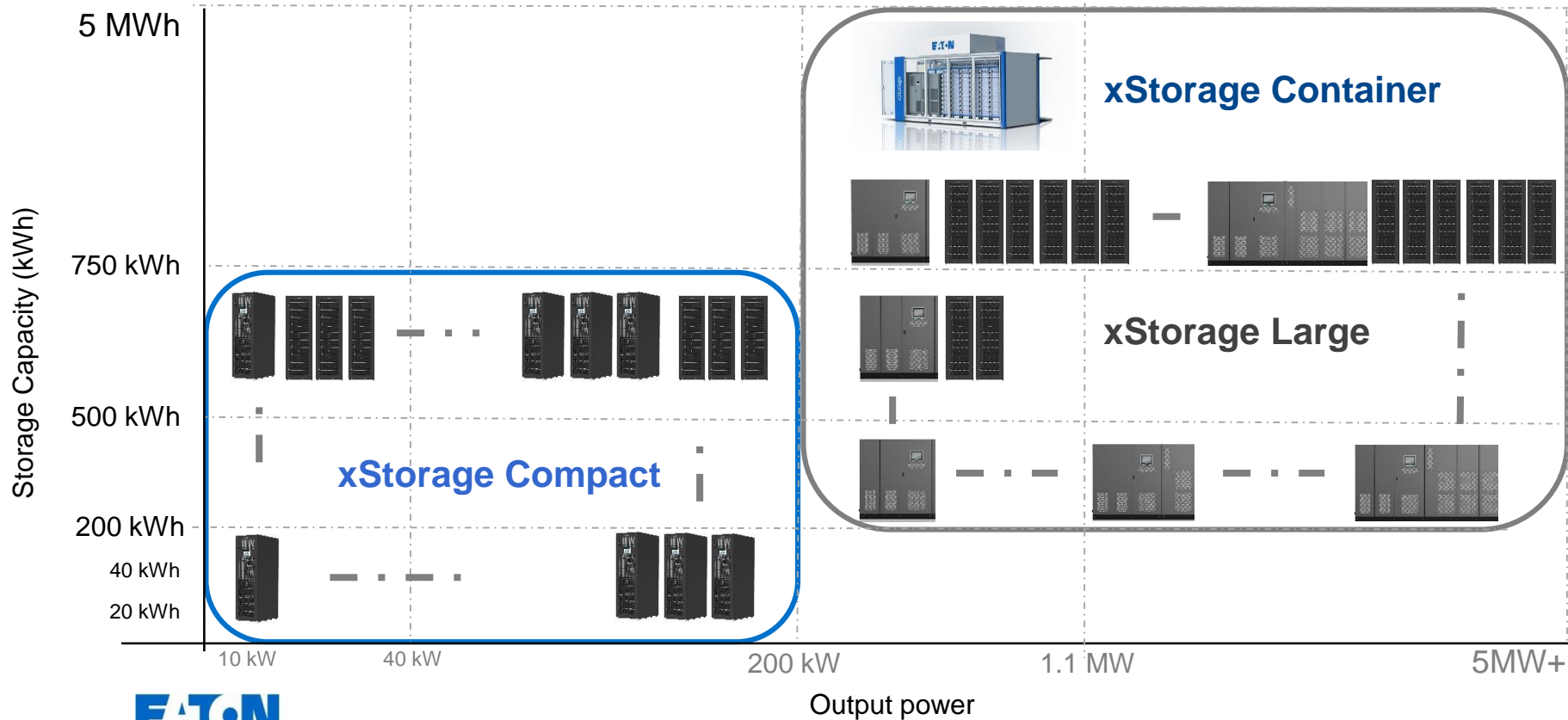


Overview of Storage

Eaton with Nissan Technology Partnership



xStorage range for Commercial and Industrial applications: Scalability and modularity





Powering Business Worldwide