



Resolute

Megawatts to Mines

**The Syama Power Story: World's Largest Mine-Based
Off-Grid Fully Integrated Hybrid Power Plant**

Resolute: John Welborn | Ignite: Grant Berndsen



“Innovation is a process that combines discovering an opportunity, blueprinting an idea to seize that opportunity, and implementing that idea to achieve results. Remember - **no impact, no innovation.**”

Syama Mine Site

World's Largest
Mine Based Off-Grid
Fully Integrated

50MW (40MW Peak Demand with 10MW Reserve Capacity)
Hybrid Solar, Battery and HFO Plant



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System Overview – Hybrid Components

5 x 10.4MW W20V32 Wartsila
HFO Engines = 52MW Capacity

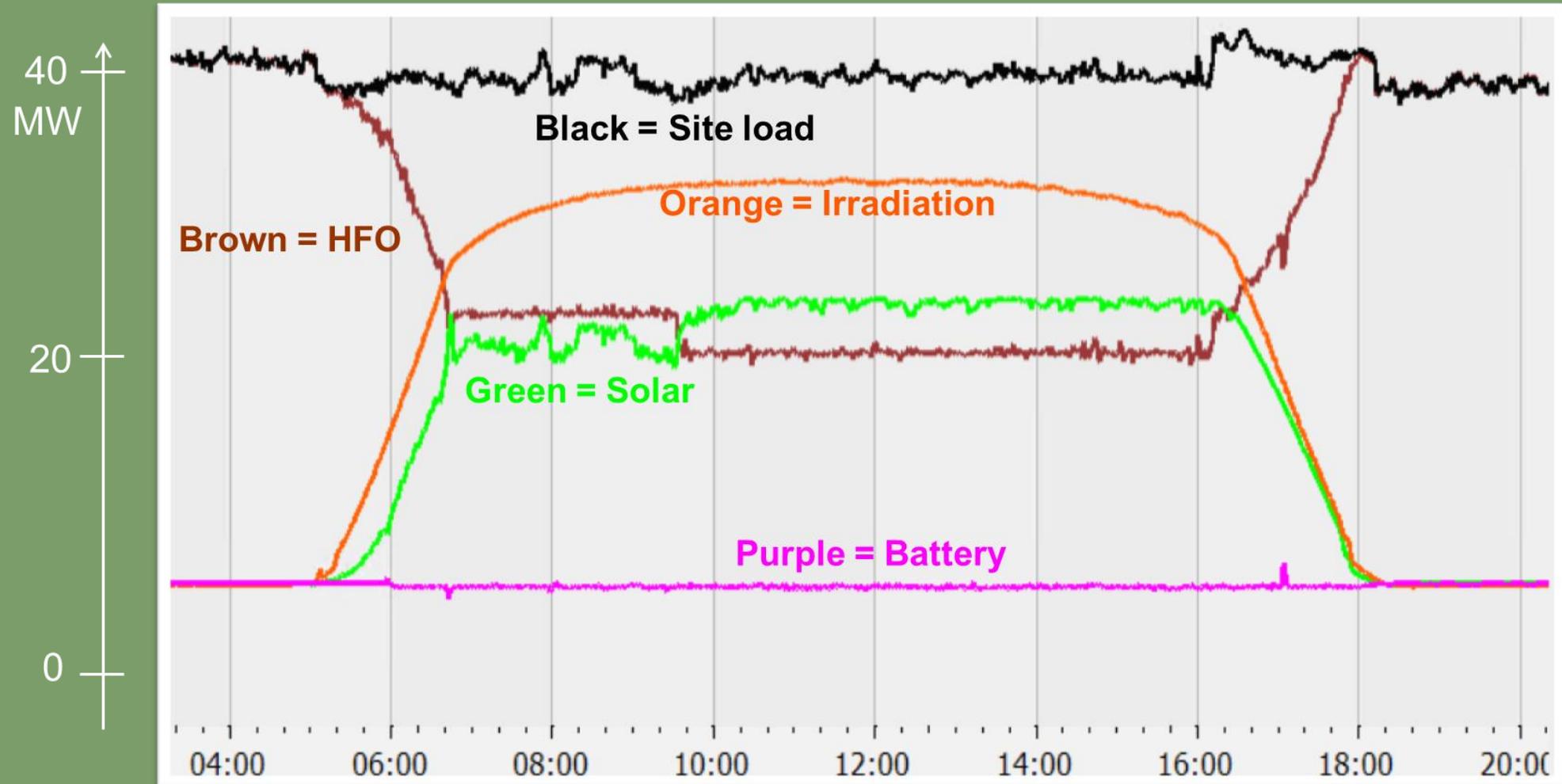
Battery Energy
Storage Solution =
15.24MW / 7.62MWh

GEMS - Energy
Management System

5 Million Litre
Fuel Farm

Single Axis
Tracking Solar
PV = 33.4MW

System Overview – Meeting the Mine's Demand





Highlights

- ✓ One **integrated power station** – ensuring optimal operations
- ✓ Single operation, **designed for maximum efficiency**
- ✓ **One major EPC and O&M supplier simplifies project** and operations management
- ✓ Standard plant design used for each technology; **integration of technology provides unique value**
- ✓ Replacing LFO with HFO – **achieving $\pm 30\%$ fuel efficiency benefit**
- ✓ **Solar penetration $\pm 30\%$**
- ✓ **Significantly greener and reduced emissions**
- ✓ **Fast-track implementation**
- ✓ **Power supply risk on the IPP**; enables Resolute to focus on core competency of mining
- ✓ The station is **modular and expandable** to meet likely future growth requirements of the mine
- ✓ **Funding** – strong interest in supporting this unique first of a kind project



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Comparison of Key Metrics

Existing Diesel Plant

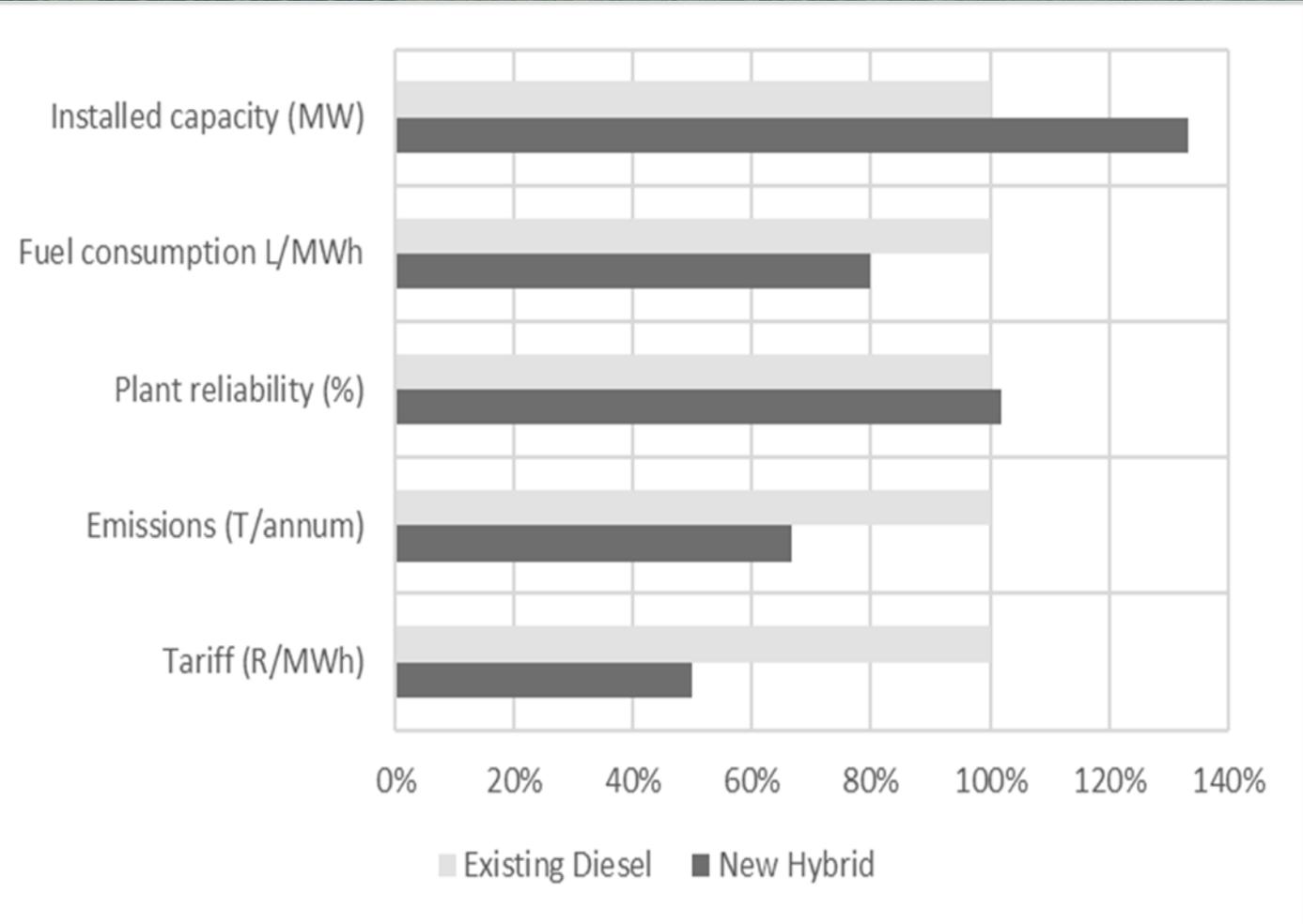
- 26MW owned by Resolute
- 13MW rental units

Typical Off-Grid Mine Power

- Thermal plants (Diesel or HFO)
- Typically owned and self-funded by mines directly
- Hybridisation not yet being properly explored and implemented

Syama Hybrid Power

- IPP structure and solution
- All technologies in one single power plant
- Modular and scalable commercial structure

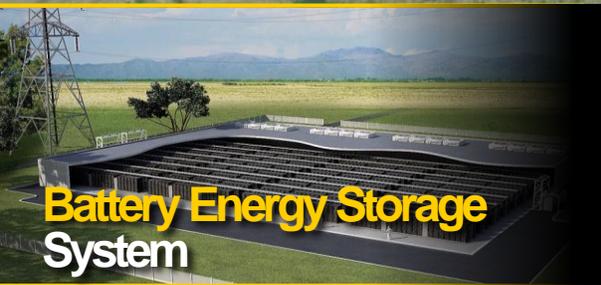




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The Innovation



World's Largest Mine Based Off-Grid Hybrid Power Solution





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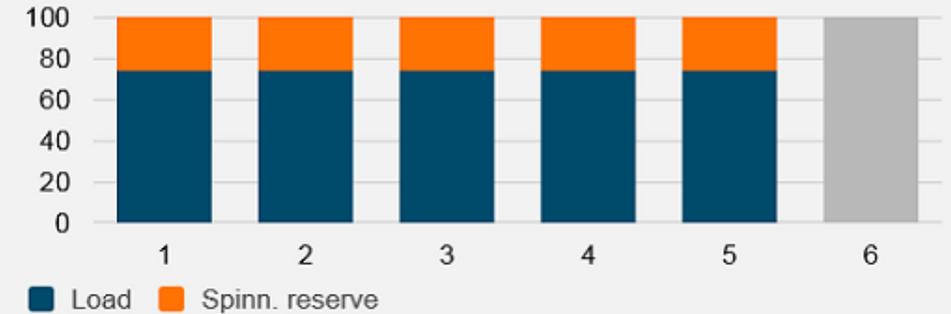
The Innovation Hybrid Power Features

- Instant power
- Power quality
 - Frequency control
 - Voltage control
- Spinning reserve replacement
- Ancillary services
- 24/7 operation in auto
- Higher load with better fuel efficiency
- Reduce engine run time
- Fuel savings
- 50MW thermal
- 33.4MWp solar
- 15MW / 7.5MWh BESS

Lower average load. Year average 74%, ave. efficiency 42,2%

SPINNING RESERVE BY ENGINES

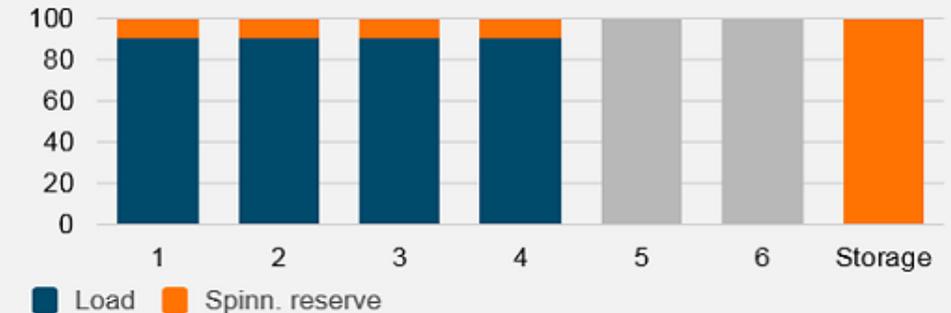
Engine load %



Higher average load. Year average 90%, ave. efficiency 43,0%

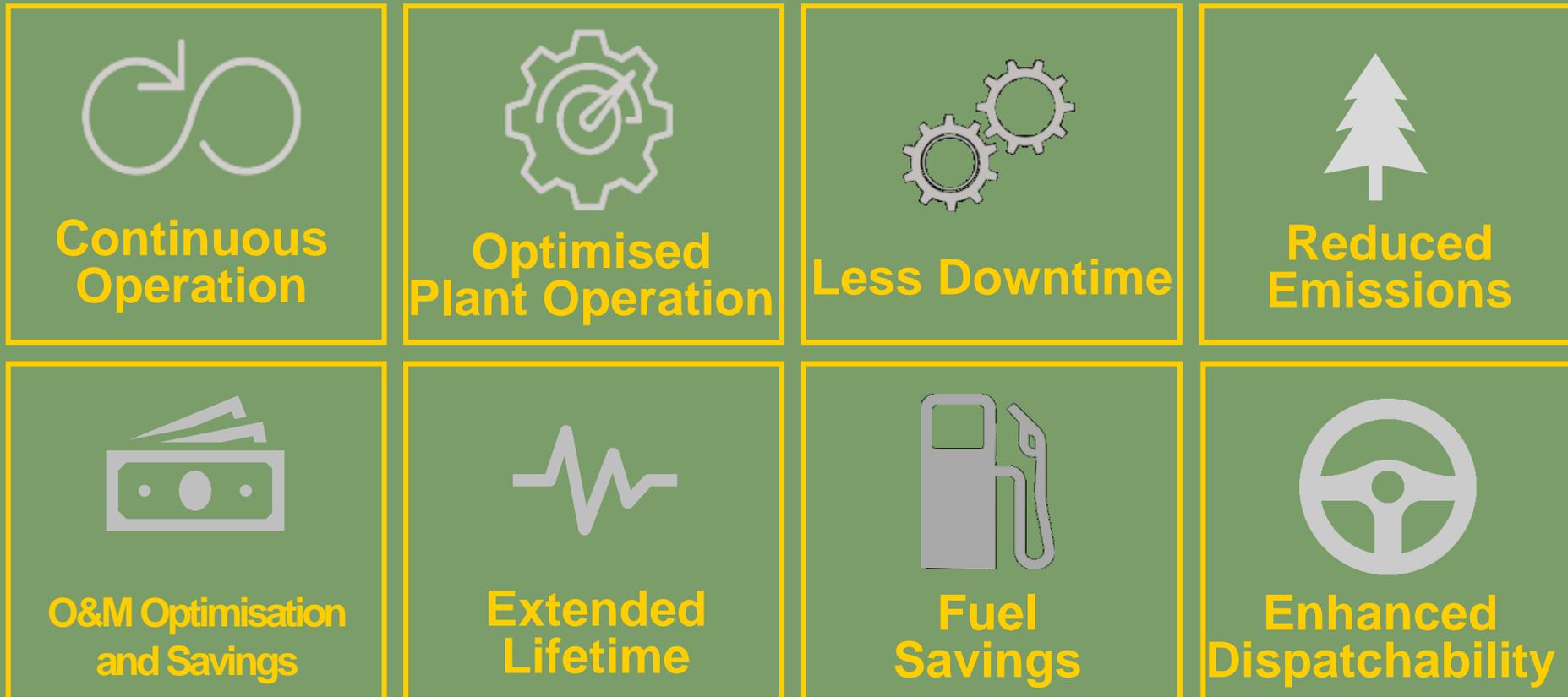
SPINNING RESERVE BY STORAGE

Engine load %



The Impact

Innovation for Cost Savings



The Impact

Innovation for Greater Control and Decreased Costs



“We have this handy fusion reactor in the sky called the sun, you don’t have to do anything, it just works. It shows up every day.”

Elon Musk, CEO Tesla Motors



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John Welborn
Managing Director & CEO

Jeremy Meynert
General Manager –
Business Development &
Investor Relations

Level 2, Australia Place
15-17 William St
Perth, Western Australia
6000

T: +61 8 9261 6100
F: +61 8 9322 7597
E: contact@rml.com.au