

aggreko

**Powering your
mine with cleaner
long-term energy
solutions**



Aggreko - your power partner for the long-term.

At Aggreko, we help you progress your business with better – and cleaner – energy solutions for the life of your mine.

As power specialists, we understand the energy you need to operate effectively – regardless of your mine’s location or how complex your operation’s needs are. We also understand the practical challenges of reducing your carbon emissions.

That is why we will work with you and use our **deep expertise** to develop the right choice of solutions and services to give you the energy you require.

We have been providing energy services across a variety of industries for over 60 years. From humble beginnings, we have grown to be the **world’s leading provider** of mobile modular power and temperature control now operating across 80 countries globally.

In mining, our history is just as rich, having first entered the industry over 30 years ago in 1991 in Australia by being the only company to put 1MW of power technology into a modular container.

Over time, our solutions have grown from initially supporting mines with bridging power to now providing **fully hybridised micro-grids** that we build, own and operate throughout the mine’s life. Where we once supported mines operationally with their short-term energy needs, we organically developed into an investment partner now active at more than 300 mines globally.

We understand that mining is a business of uncertainty, requiring quick response to changing circumstances, and the flexibility and agility to keep pace with a constantly shifting market in order to maximise opportunities and minimise losses. We understand this kind of working environment and have built our business and operations around serving and supporting customers with these unique needs.

We know that **power is critical to miners**, and we are ready and able to be a key mining project partner, providing reliable, efficient and cost-effective power to your operation.

We build, own, operate and maintain power stations throughout a mine’s life

We’ve been delivering power to the mining industry for decades. With expertise across energy generation, distribution and microgrids we can design, develop and install flexible, scalable and modular solutions for remote power.

Our **flexible energy solutions** include a variety of energy sources such as

natural gas, wind, solar, batteries and diesel and we bundle up all components of the power plant under one contract.

This means that you have one point of accountability, and we work on the basis of performance – delivering reliable, cost efficient power to your operations.



Gas



Wind



Diesel



Solar



Batteries



Our flexible **Build - Own - Operate - Maintain (BOOM)** service model assists our power plant customers by investing in their project and helping them to use their capital more effectively in their business. Under this contract model we tailor and adjust your power plant to suit your site’s size, environment and compliance requirements. As a critical investor in your project we continue to operate and maintain the plant, so it continues to work cost-effectively and efficiently. We also take care of the site’s evolving power needs, including technological upgrades.

Benefits of our world-leading modular energy solutions

Security of supply

- Power supply is a key business continuity risk for any mining operation. We understand this risk and ensure that our power system designs and operating practices provide reliable power supply to keep you in business from day one.
- Power supply reliability and fuel efficiency are key potential risks to the power station operation and need to be balanced. We can provide fuel efficiency guarantees and reliability guarantees, with associated liquidated damages and other penalties to give you assurance that we will deliver power to you on time and on budget.
- The use of renewable energy for mining is still relatively new, but Aggreko already has runs on the board. Of the limited number of mining hybrid microgrids operating globally we own and operate 4 of them, giving you the assurance of our ability to design, build and operate a hybrid power station and access to invaluable experience from other projects.
- In times of global supply chain uncertainty, we can rely on our supply chain partners and technical expertise, while still operating a local depot and local team of technicians to ensure that we can continue to provide unparalleled service.



Flexible commercial contract

- We know that risk management is a key part of the mining business. Aggreko's flexible contract terms makes us the perfect power partner to meet your operational and commercial risk management needs.
- We are able to offer flexible contracts with variations on the BOOM model. We can provide capital, as well as own, operate and maintain the power facility on your site. Our contract frees up your capital for use elsewhere in your business. It is a cost-effective solution for any location and is tailored to suit your site's size, environment, and your company's ESG requirements.
- We are also able to offer longer-term contracts than initially required, with low early termination costs. This allows you to potentially reduce your operational expenses now, as well as prepare for mine life extensions without later negotiating contract extensions from an unfavourable position.



Our power system designs and operating practices provide a reliable power supply to keep you in business from day one.



We understand the risk that No Power =



No Operation



Managing and mitigating risk

- **Power supply doesn't come without risk**, and Aggreko is adept at managing and mitigating those risks for its clients.
- Robust **fuel efficiency and reliability guarantees** are standard for our PPA contracts. We stand behind our ability to provide you with efficient and reliable power, with comprehensive and transparent performance reporting practices.
- **Fluctuating fuel price risk and fuel supply risk** are minimised with hybrid solutions and added renewables. By utilising a hybrid microgrid design, you fix a part of your fuel cost, which could reduce your overall cost compared to thermal only power.
- **Renewable energy and storage technology is developing rapidly**, which can be a cause for hesitation to proceed with a hybrid solution. We can alter the system design to add renewable generation and storage technology at any time through the term of a contract, helping you to ease into a hybrid option gradually and when it makes sense to do so. And as technology develops, we can swap out our modular equipment through the duration of the contract to ensure you have the latest technology for your mine.
- We take a **least risk approach to power system design** to ensure that you have a power supply you can rely on from day one. In line with the flexibility of our contract terms, this can be altered as the operation's power needs settle and mature.
- We can scale your power needs through the life of your project - from early construction through to full operation and closure at the end of the mine's life. Our 'fleet model' and modular system means that we can provide power generation to your project at short notice, whilst also preparing the site for the long-term power solution. We can then increase or reduce the power generation on site as operational needs dictate.
- With the BOOM model, there is **no up-front capital cost (CAPEX)** and costs are incurred over the term of the contract as an operating cost (OPEX). This provides you with budget visibility and predictability over your overall power costs.
- In remote power supply situations, reliability can be put at risk when a generator is taken off-line for major maintenance. **Our modular system, fleet model of operation and world-class practices** negates this risk by simply changing out the generator requiring maintenance with another from our local depot while the major maintenance is carried out. In the same way, we can also add or remove generation when required (for example, if a unit needs replacing).



Technology and safety

- Occupational health and safety are critical issues for mining customers worldwide, which is why we adhere to the highest standards around the globe. We are accredited across various QHSE certifications including:
- ISO 9001:2015 - Quality management system
- ISO 14001:2015 - Environmental management systems
- ISO 45001:2018 - Occupational health and safety
- Our fleet comes with 24/7 remote monitoring and support and we ensure the power station operates efficiently and effectively.

Key risks to consider include:

- Fuel efficiency and associated costs
- Reliability of power supply
- Emerging technology risk
- Spare parts availability
- Maintenance downtime

Hybrid power plants

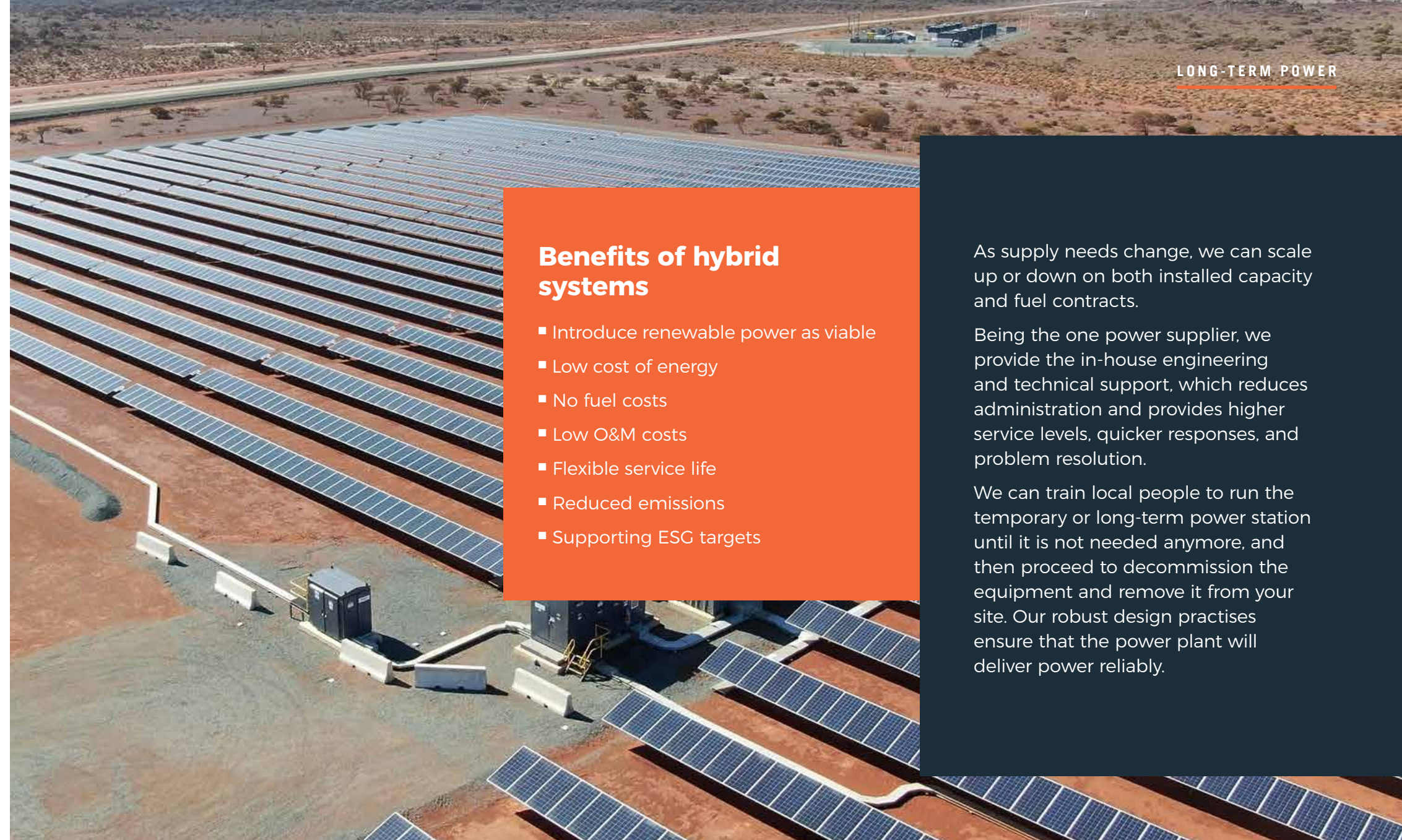
When it comes to power, one way the mining sector can reduce power costs, increase their sustainability profile and manage fuel cost risk is through the implementation of hybrid power solutions.

As mines are going deeper and more remote than ever before, finding innovative ways to keep costs and emissions in check is an ongoing challenge. Hybrid power plants combine the advantages of renewable energy (such as wind, hydro power, solar) and battery storage with the reliability of thermal generators.

Once installed, the costs of producing renewable power is minimal - and so are emissions.

Our battery storage system is used across hybrid power plants to give you greater power quality and resilience. It also delivers savings to your project, by improving the overall plant efficiency and thereby reducing fuel consumption and carbon emissions. Our hybrid solution will provide your site with the reliable energy your operation depends upon - while your costs and carbon footprint will shrink in the process.

It's fast to deliver and set up - and it's all bundled into a single contract.



Benefits of hybrid systems

- Introduce renewable power as viable
- Low cost of energy
- No fuel costs
- Low O&M costs
- Flexible service life
- Reduced emissions
- Supporting ESG targets

As supply needs change, we can scale up or down on both installed capacity and fuel contracts.

Being the one power supplier, we provide the in-house engineering and technical support, which reduces administration and provides higher service levels, quicker responses, and problem resolution.

We can train local people to run the temporary or long-term power station until it is not needed anymore, and then proceed to decommission the equipment and remove it from your site. Our robust design practises ensure that the power plant will deliver power reliably.

We start by working with you to find the best location for your power plant. We consider environmental and local regulations and create detailed plans, including 3D modelling of the proposed site. We can take care of civil works, if needed - which include levelling the ground, building roads, putting in drainage and laying fuel lines.

We can then:

- Supply and install renewable power plant
- Supply generators, transformers and switchgear
- Provide fuel management systems, fuel tanks, monitor fuel levels and schedule deliveries
- Supply control rooms, operated 24/7 by our experienced plant technicians
- Supply high-voltage and low-voltage power cables
- Provide safety management practices to keep workers safe.



Aggreko Solar Power

Lower costs of energy and zero emissions – our solar power is the ideal solution for customers who want to benefit from clean energy innovation without the need for long-term financial or technological investment.

Our mobile and modular solution is ideal for areas with weak or no grid connection and can be deployed in as little as three months. It boosts the reliability of your power supply and reduces the need to transport fuel over long distances.

The sun’s power is endless. Our PV contracts end when you want

With the world changing rapidly, the last thing you want is being unable to act when a change affects you – because you’re tied into a long-term contract. Our solar power contracts begin at just five years and there’s no capital investment involved. By outsourcing your power with Aggreko, you can focus on utilising your working capital and maximising the returns from your current operations and assets while transitioning to a lower-carbon future.

Our Flexible Solar Power Solutions

Aggreko offers fixed or self-contained quickly deployable units, with our solutions tailored to specific sites and regions, considering the climate, location, life of the project, and whether solar panels need to move around the site. We help establish a customers’ needs first by performing a remote site assessment, followed by a site-visit assessment to determine the best solution for the project.

Additional benefits:

- Different types of solar solutions can include floating arrays (on water such as dams and lakes), tracking systems, fixed systems, and mobile systems.
- We partner with various PV manufacturers which allows specifically tailored solutions based on a client’s site needs. This is to optimise solar resource potential and generate maximum fuel savings and carbon emissions reductions.
- For self-contained solar power, the units are mobile and modular as they can then be re-deployed on other sites of the mine or project.
- No capital outlay and no risk for fixed solar power as Aggreko designs, builds, owns, operates, and demobilises unit when required.

Our solution integrates seamlessly with our thermal and battery storage products and is controlled by Aggreko’s Control Platform to ensure optimal performance.

This also helps smooth out any sudden transitions in power output from PV inverters which can otherwise cause instability in micro-grids.

The result?

An even more resilient system that operates more efficiently, needs significantly less fuel and has a much lower carbon footprint.

One of world's largest renewable microgrids powers remote gold mine

We specialise in designing, building, owning and operating flexible power plants for the mining industry.

CUSTOMER

Gold Fields Australia

LOCATION

Laverton, Western Australia

SECTOR

Mining

KEY FACTS

2 MW

Battery storage

23,040

Solar panels

27 MW

Gas power

7.7 MW

Solar power

THE CHALLENGE

Help our customer introduce renewables into their energy mix without compromising power reliability

Gold Fields Australia committed to reduce its carbon footprint and use renewables for at least 20% of total life-of-mine power requirements in new projects.

Two years previous, after a gas line extension was built by AngloGold Ashanti to service their mining operations in the region, Gold Fields Australia were able to use gas, a cleaner cheaper fuel source than the diesel it was using at the time to power their operations going forward.

That's when they turned to Aggreko to deliver a 22 MW gas power station.

Working closely with them to understand their needs, we delivered highly efficient bespoke modified engines that reduced their fuel costs and environmental impact.

Knowing Aggreko had recently announced the launch of microgrids-as-a-service for customers who want to leverage the benefits of a hybrid energy solution while minimising capital outlay, discussions began about how and if this could be incorporated into their current power package without compromising the micro-grid stability or reliability.

THE SOLUTION

Leverage the benefits of hybrid renewable energy microgrids

To integrate 7.3 MW of solar power generation, and 2MW / 1MWh battery storage with the existing gas supply as a hybrid power station - under one contract and with no capital outlay.

This unique energy package combines solar, thermal and battery storage that's seamlessly integrated and managed by our powerful software platform - guaranteeing full system availability and optimising their existing thermal assets life.

This new solar gas hybrid power station will meet the increased daily power needs of the entire mine of 24.2 MW, with 8 MW allocated to the Wallaby underground mine and the remaining 16.2 MW for the processing plant, associated facilities and the mine accommodation camp.

THE IMPACT

Lower energy costs and minimised environmental impact

Power generation is a significant proportion of operating costs of the Granny Smith mine for Gold Fields.

Using the latest hybrid energy technologies will enable them to significantly lower their total cost of energy and reduce their carbon footprint, while demonstrating their ongoing commitment to both environmental sustainability and innovation as its operations. All of this without compromising the reliability of power supply and productivity of the mine.

OUR DIFFERENCE

Thermal, solar and battery power combined to deliver the best package possible



Stuart Mathews

Executive Vice President Australasia
Gold Fields

We are thrilled to reach an agreement with Aggreko for the design, installation and operation of this innovative source of renewable energy which will generate nearly enough power to run the mine's processing operations.

Cost effective hybrid power that lowered gold production costs

CUSTOMER

Resolute Mining Limited

LOCATION

Mali, Africa

SECTOR

Mining

KEY FACTS

40%

Cost reduction in total cost of energy

20%

Reduction in CO₂ emissions

16 year

Contract to build, operate and maintain hybrid plant

THE CHALLENGE

Resolute Mining Limited, an ASX and LSE listed gold mining company has produced over eight million ounces of gold from 10 gold mines.

As part of its commitment to delivering a life-of-mine-all-in sustaining cost of US \$746/oz at its Syama Underground Mine in Mali, they needed to define a lower cost power solution relative to its existing source of power.

The Syama Gold Mine was powered by singular diesel generators that were no longer the most efficient compared to newer technology now available. At the mercy of diesel, notoriously a fluctuating high-cost fuel, it has become an expensive solution.

Furthermore, the generators had to run constantly to provide system stability that the mine needed.

After investigating, the possibility of a grid connection, which was disregarded based on time and cost, Resolute launched a tender with the target of achieving a 40% reduction in the cost of electricity (COE). With Resolute focused on securing a more environmentally friendly solution, the environmental impact of the power solution being offered was a key consideration.

Resolute also wanted a solution which offered low-cost power without needing to make a significant upfront capital investment so that the Company could conserve capital for deployment for growth.

THE SOLUTION

As Aggreko had been providing and operating a 28 MW diesel power plant on the site that augmented the existing diesel power station for a few years, we had both the reputation and credibility to step in and offer to support the optimisation and hybridisation of their plant. A vast project needed a vast solution, and we relished the opportunity to work with Resolute to deliver a bespoke cutting edge technical and commercial solution as part of a 16-year Power Purchase Agreement (PPA).

Technical Offering

Delivered in two stages, it considered the various project factors with a meticulous level of detail to ensure smooth delivery and zero disruption to the mine's production activity. Stage one was completed in 2021 and consisted of three 10 MW thermal Wartsila Modular Block's and a 10 MW battery storage system, that provides spinning reserve displacement and outbalance sudden jumps in load. The second stage will consist of the installation of an additional 10 MW Wartsila Modular Block and the addition of 20 MW solar PV power.

There can be some hesitancy to implement solar as mine's have short planning horizon's and the usual lifespan of a PV park is about 20 years – if not sometimes longer than the operation of a mine itself. This is why the offering Aggreko provides perfectly matches a mine's needs.

The initial site infrastructure layout includes space to accommodate a fifth 10 MW Wartsila Modular Block, enabling the mine to additional capacity power if needed in the future to support growth or expansion plans.

THE IMPACT

The energy as a service agreement with this hybrid offering allows Resolute to focus on their core business of Mining while delivering substantial cost savings, estimated at 2 million euros per month on their current total cost of energy – that's a 40% reduction from current COE. These savings will flow directly into Resolute's production cost per ounce and help them operate in any gold price environment, which is crucial for the long-term sustainability of their mining operations.

LONG-TERM POWER

Once the solar power system is installed, the 10 MW battery storage system will also manage the output of the solar power system, smoothing out fluctuations in PV generation and facilitating integration into the hybrid system.

Commercial Offering

Our pricing was structured with a combination of fixed and valuable charges depending on electricity required, and evolving MW installed. It also includes an incentive programme where Aggreko shares between 25% to 50% of the resulting fuel savings if improved efficiencies for key performance indicators in the contract are achieved. This provides us with an incentive to reduce the cost of power for Resolute, and we share that cost benefit directly with our customer.

During the project engineering phase, we forged a true partnership with Resolute to ensure we use the best site infrastructure, and optimise the civil work and installation of the plant. As an example, the solar array will be constructed on the surface of the existing Syama Tailings Storage Facility (STSF) thereby maximising positive environment outcomes and augmenting Resolute's rehabilitation program.



Once the Solar power plant is integrated into the mine's energy mix, Resolute will also improve the mine's environmental impact with a reduction in carbon emissions of approx. 20%. The ongoing presence of Aggreko at the site, and appetite to adopt a new world leading technology demonstrates the trust and strong partnership in place.



Power **how** you need it,
when you need it, **where** you need it.

