

**aggreko**

## **The hybrid power advantage**

**A strategic guide to low-risk,  
high-reward energy solutions**

LETS BEGIN





# Introduction:

## Powering the future with hybrid innovation

In today's dynamic energy landscape, businesses are navigating a trifecta of pressing challenges: escalating fuel costs, inconsistent power supply, and the necessity for stable operational budgets. These issues are particularly acute for industries operating in remote or challenging environments, where traditional energy solutions often fall short.

Hybrid power plants, which seamlessly integrate solar energy, battery storage, and thermal generation, have emerged as a strategically sound solution to these challenges. By harnessing the strengths of multiple energy sources, hybrid power solutions deliver immediate and substantial cost savings, alongside robust, long-term operational benefits.





# What constitutes a hybrid power solution?

A hybrid power solution combines diverse energy technologies to provide a comprehensive, adaptable, and resilient power supply. **Here's what typically makes up these innovative systems:**



**Solar Energy:** Utilising photovoltaic panels, solar energy offers a clean, renewable, and cost-effective power source. Once installed, solar has minimal operational costs, making it a cornerstone of hybrid systems.



**Battery Storage:** Batteries play a critical role by storing excess energy produced during peak generation times. This stored energy can then be used during periods of high demand or low renewable generation, ensuring a stable power supply and optimising energy efficiency.



**Thermal Generation:** Thermal power generation provides reliable power that compensates for variability in renewable sources. It acts as a dependable base, essential for maintaining consistent energy output, especially in off-grid or remote locations.

Together, these elements create a flexible and scalable energy system designed to deliver consistent, reliable power in an efficient and sustainable manner. This adaptability allows hybrid solutions to meet the varied requirements of modern industries—providing dependable energy demands of today while supporting their long-term growth and sustainability goals.

**This guide demonstrates how hybrid systems not only satisfy current energy challenges but also lay the foundation for future resilience. By adopting hybrid innovation, businesses can gain a competitive advantage—securing reliable, cost-effective power that evolves seamlessly with changing market conditions and regulatory frameworks.**



# The core benefits: why hybrid power makes business sense

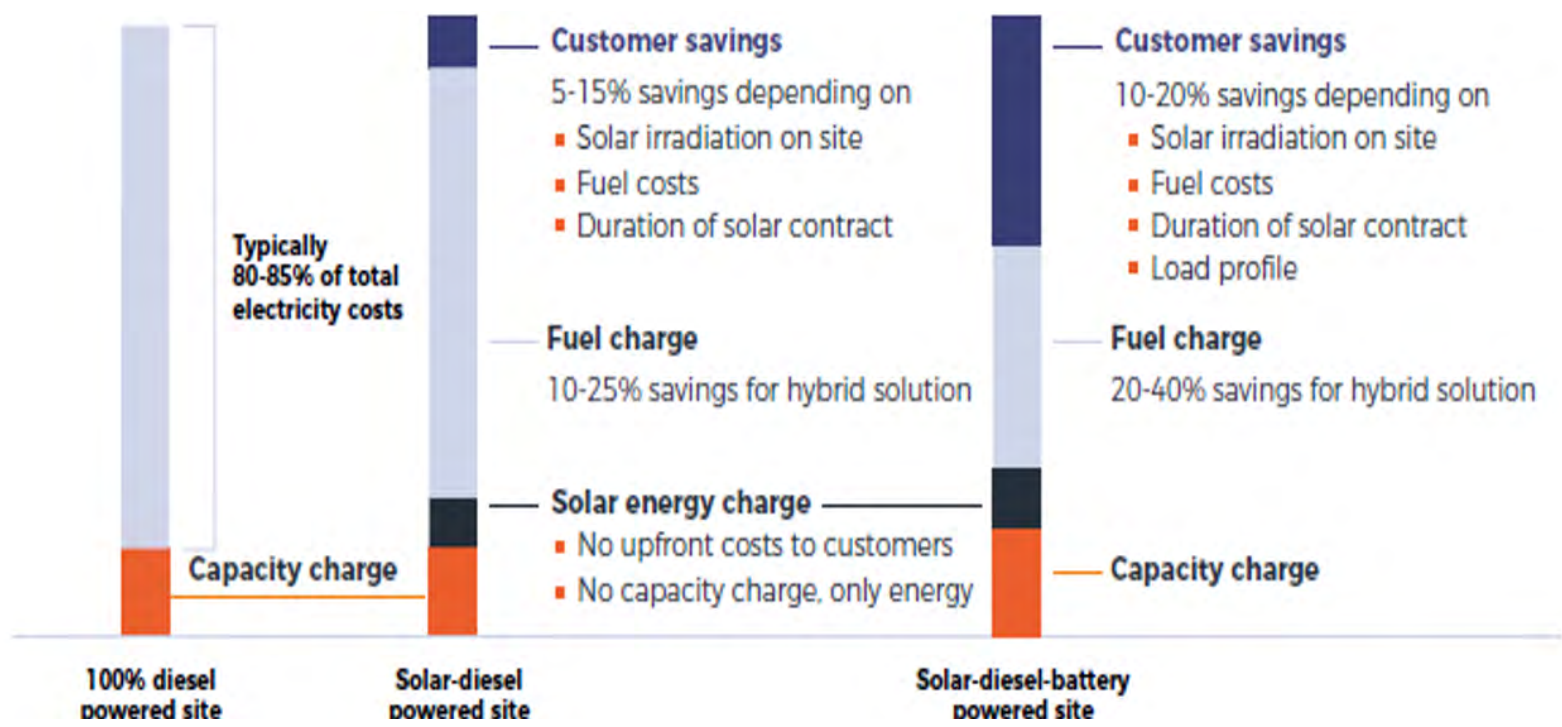
## 1. Slashing energy costs without compromise

- Thermal power generation is a dependable power source for remote operations, with fuel costs accounting for eighty percent plus (80%+) of the energy tariff.
- Once capitalised, solar energy offers minimal by producing electricity without ongoing fuel expenses. According to studies by organisations like the International Renewable Energy Agency (IRENA), integrating solar with battery storage can significantly reduce generator runtimes, delivering immediate financial savings.

## 2. Maximising uptime in any environment

- Battery storage bridges power gaps by capturing excess energy generated during periods of high sunlight, and discharges during times of low or no solar production to maintain a stable supply. This not only smooths out fluctuations but also reduces the need to run thermal generators continuously, leading to lower fuel consumption and operational costs.
- Fast-start thermal generators—such as gas or diesel sets—provide dependable backup power, rapidly ramping up to deliver uninterrupted electricity when renewable sources are insufficient.

The result? **Immediate savings without sacrificing reliability.**



\* Percentages heavily depend on diesel fuel costs, on-site solar irradiance, duration of contract, user load profile and other factors.

By combining these technologies, hybrid systems ensure reliable, consistent energy supply, minimise downtime, and optimise operational efficiency, all while reducing reliance on expensive, volatile fossil fuels.







# The core benefits: why hybrid power makes business sense

## 3. Extending Equipment Life & Cutting Maintenance

- By decreasing the operational hours of generators, they experience less wear and tear, which directly translates to lower maintenance cost and extending equipment lifespan.
- Batteries help absorb load fluctuations and smooth out energy demand, reducing mechanical stress on generators, minimising breakdowns, and ensuring your power system remains reliable and cost-effective over the long term.

## 4. Technological Future-Readiness

- Innovations in renewable energy, energy management, and storage continue to enhance hybrid systems' performance.
- Hybrid solutions are modular and scalable, allowing them to be easily upgraded or reconfigured as your needs evolve.

## Is hybrid power right for you?

If your operations face:

- High diesel or gas costs
- Unreliable power supply
- Remote or challenging locations
- Pressure to reduce operational costs

**...then hybrid power isn't just an alternative—it's the smartest energy decision available today.**



# Aggreko's Investment in Africa's Energy Future: Expanding Our Sustainable Solutions

**As part of Aggreko's ongoing investment in the energy transition, we acquired RenEnergy in Africa, offering a range of specialised solutions that complement our core services. These solutions serve as valuable add-ons, enhancing our ability to deliver comprehensive renewable energy options:**

## **Ground and Roof Solar:**

Custom-engineered ground-mounted and rooftop solar PV arrays that optimise available space—be it unused land or roof areas—providing reliable, clean power, long-term savings, and energy certainty.

## **Carports:**

Solar carports that transform parking areas into power-generation assets, offering shaded parking while producing high-efficiency solar energy. They are particularly suited for commercial sites and future-ready for EV charging integration.

## **Energy Storage and Charging:**

Battery energy storage systems for intelligent energy management—maximising solar self-consumption, enabling cost savings through energy arbitrage, and integrating EV charging infrastructure for fleets and businesses.

## **Consultancy:**

Expert support in navigating carbon markets, registering small-scale embedded generation, and ensuring compliance with municipal and Eskom requirements. We also advise on grid integration, tariff optimisation, and long-term energy planning.

## **Asset Management:**

Dedicated asset management services that maximise the performance and return of your solar and storage solutions through remote monitoring, data analysis, and preventative maintenance.



**These offerings extend Aggreko's existing solutions, reinforcing our commitment to delivering end-to-end, sustainable energy solutions that accelerate Africa's transition to cleaner, more resilient power solutions.**

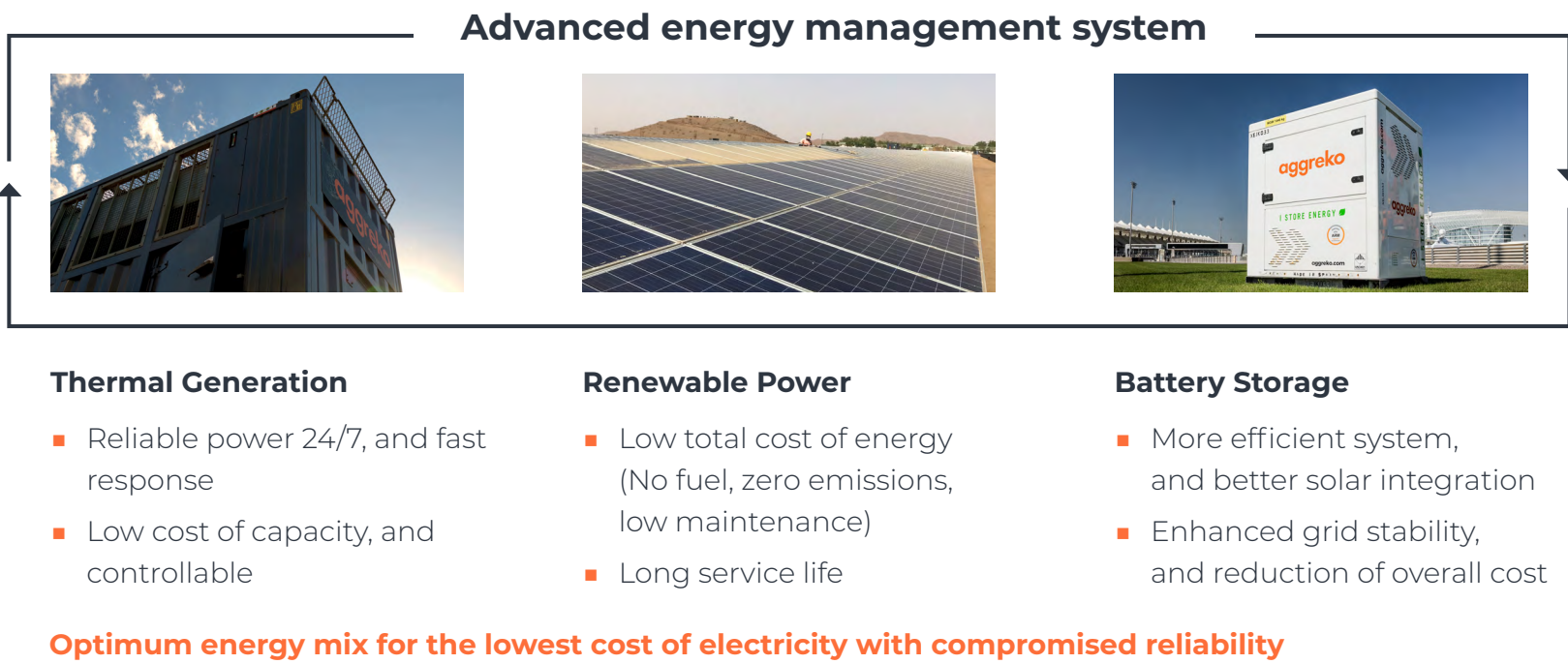




# One-stop power solutions for more flexibility, reliability and revenue

At Aggreko, we see hybrid power systems as more than just a way to generate energy—they are a strategic tool to drive your future success. Our proven, scalable, and flexible solutions help minimise risks, optimise operational costs, and give your organisation the agility to adapt quickly to shifting markets and evolving regulatory requirements.

We design, build, install, commission and operate the equipment as a full turn-key solution, with no hidden costs. We give you highly scalable power - **your decentralised microgrid will continue to operate with no disruption no matter how many power plants of any fuel mix/ technology are deployed.**



## Flexible contracts Commercial and financial flexibility

Whether you want to buy energy as a service, have the option to purchase the power plant at the end of the contract or want to explore third party financing – Aggreko can be your trusted energy partner to help you realise your energy mix aspirations.

### ■ IPP / PPA Agreements

We can also offer our energy services as Independent Power Purchase (IPP) or Power Purchase Agreement (PPA) style arrangements where we can bring in fuel & lubricant supply for project durations +5 years. Unlike a traditional PPA, our truly flexible agreement removes the risk of being locked in should your operations need to expand, go green, move or terminate early because of changes in conditions beyond your control.

### ■ Energy as a Service (EaaS)

Like a PPA offering the most flexible tailored contract terms such as shorter duration, convenient payment terms, the ability to evolve and introduce new power technologies over the duration of the contract. We guarantee performance, power availability, heat rate, and fuel efficiency. This journey and service from Aggreko, ultimately, gives you complete peace of mind with dependable energy and predictable energy tariffs.

### ■ Power asset ownership

We also offer the BOOT (Build-Own-Operate-Transfer) model, where the power assets remain the property of Aggreko, and we operate and maintain them on your behalf for an agreed period, typically between 3 and 6 years.

After this period, ownership and operation and maintenance responsibilities transfer to the customer, either as an option or as part of the pre-agreed contractual terms, often based on specific commercial arrangements.

## Conclusion

Whether you operate in remote mining sites, offshore oil platforms, or manufacturing facilities, partnering with us means gaining a trusted, long-term ally committed to supporting your operational resilience and energy goals. **Together, we can transform your power infrastructure, delivering secure, cost-effective, and sustainable energy today and into the future.**







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