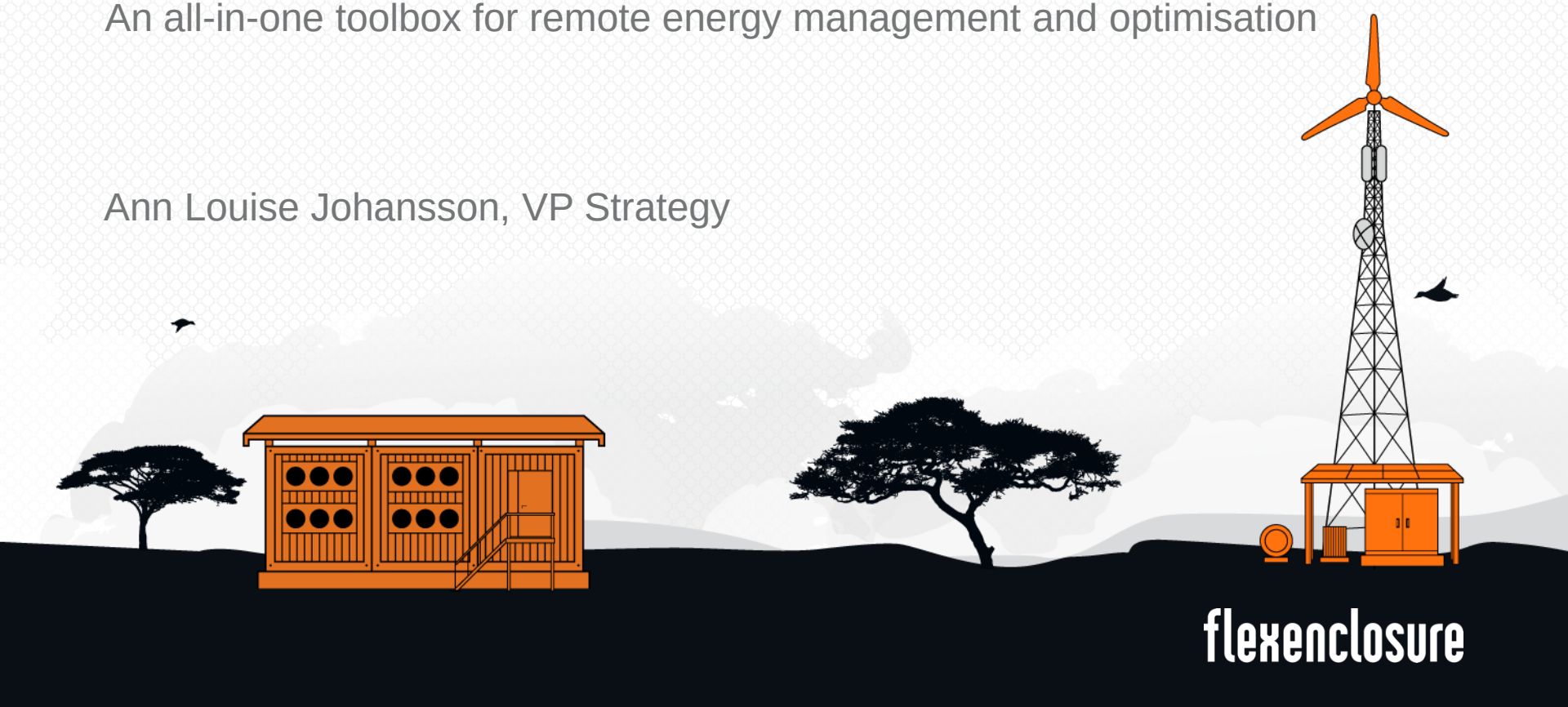
Flexenclosure eManager

An all-in-one toolbox for remote energy management and optimisation

Ann Louise Johansson, VP Strategy



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Outline

- Flexenclosure – who we are and what we do
- What makes green power a sustainable model?
- Numerical examples
- eManager – an all-in-one toolbox for remote energy management and optimisation
- Concluding remarks

Flexenclosure background



- More than 20 years in the rural telecom industry, with 9,000 site installations in more than 50 countries worldwide
- Peace of mind in extreme environments
- Recipient of multiple industry awards

PROUDLY PART OF SUSTAINIA 100

GLOBAL MOBILE AWARDS 2012 WINNER

INTERNATIONAL GREEN AWARDS™ WINNER 2011

GLOBAL MOBILE AWARDS 2011 WINNER

Winner 2010 AfricaCom Awards Green Telecoms Award www.africacomawards.com

Mobile Innovation Global Award 2008 CATEGORY WINNER

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Flexenclosure supplies

eSite: site power solutions for off-grid and bad-grid cell sites that cut diesel-related costs by up to 90%

eCentre: pre-fabricated, pre-equipped modular data centres that are energy efficient, fast to deploy and easy to expand





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What makes green power a sustainable model?

- Green power is a sustainable model when it makes economic sense!
  - Performance, performance, performance...
  - Monitor, manage and  ver time
  - Analyse, take remote
- What could be the co management?
  - The cost of running a si r
  - 5-10% drop in performa **00-4,000** per year
  - 1,000 sites: **$2-4 Million per year**
  - 5 years: **$10-20 Million**

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eManager

- eManager™ is an energy monitoring and management system, providing a one-stop interface for:
  - Energy OPEX & KPI follow-up
  - Detailed power analysis
  - Diesel and site service logistics
  - Site surveillance and alarms
  - Remote trouble-shooting
  - Asset management
  - Optimised power usage system-wide
  - Energy data warehouse



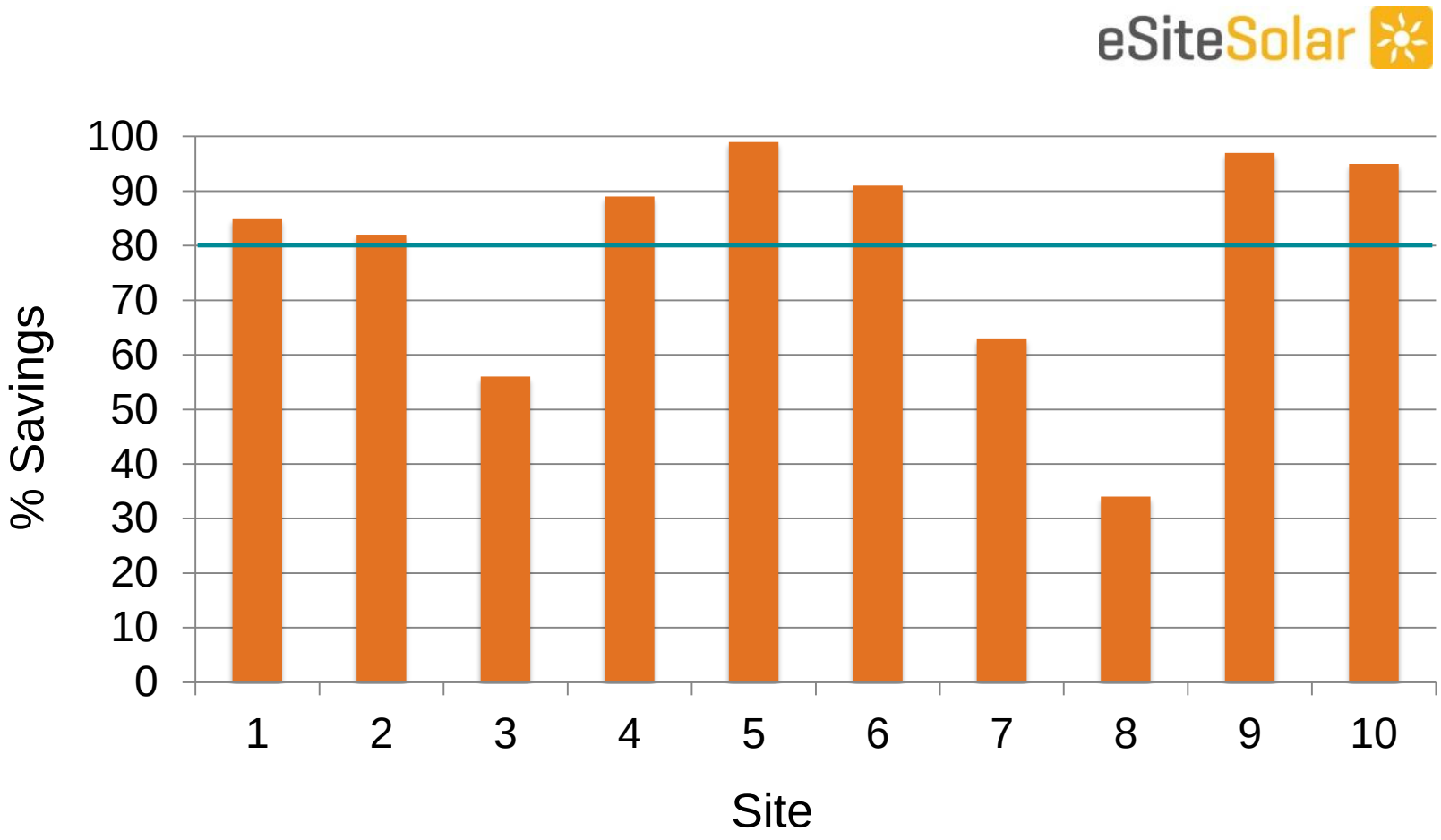
- eManager is standard part of eSite
  but can also be implemented for other power solutions

eManager

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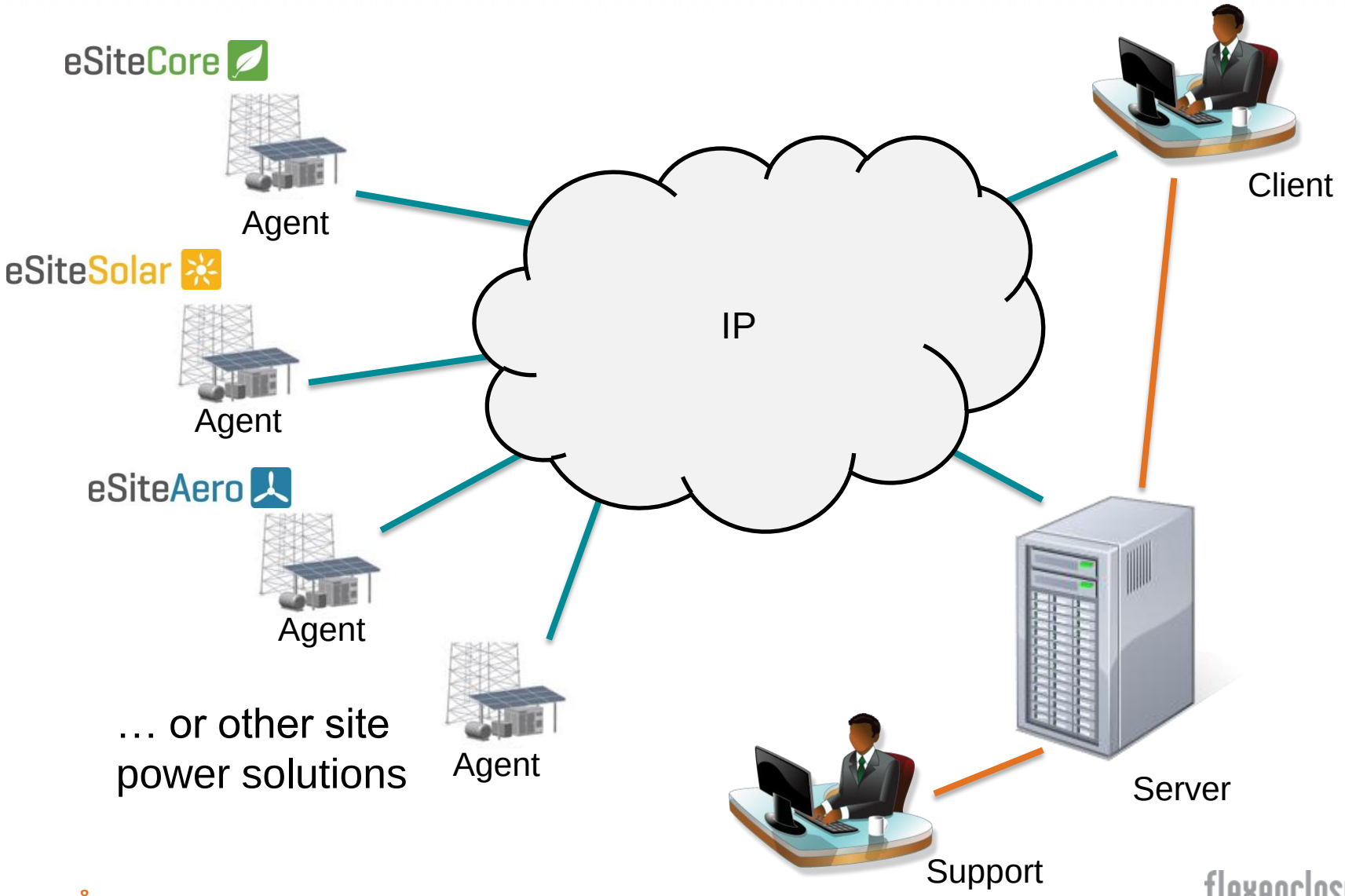
Identifying sites requiring actions

Example of eSite live performance data from Nigeria. Low performing sites are identified and actions to bring them up to target performance are taken.



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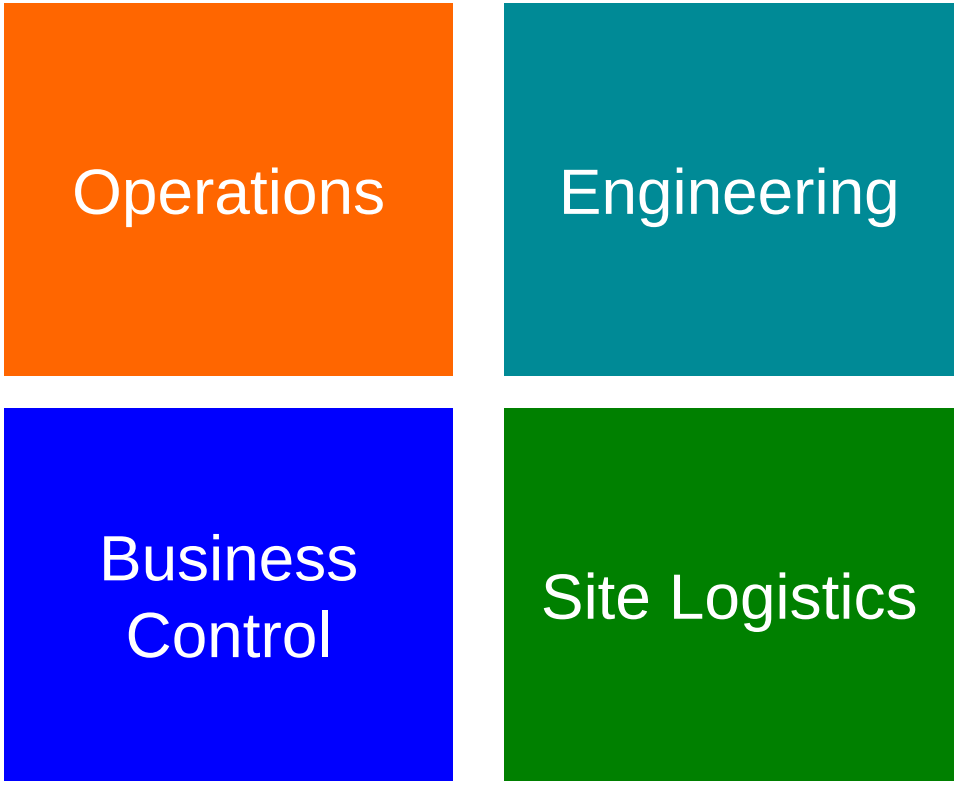
eManager



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eManager Modules

Functionality for four key customer functions



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eManager Operations

- Tools for managers responsible for keeping the network operational, including monitoring and trouble-shooting
- Full real time network surveillance, including:
  - Network-level alarm list, from standard warnings to critical/fatal
  - Geographical map with site status
  - Dashboard highlighting deviations from normal operations
  - Site configuration changes
- Trouble shooting critical operations, including:
  - Fault analysis via detailed site event logs
  - Historical trend analysis
  - Remote generator restart
  - RSSM expert support
  - Pre-briefing for onsite engineers (tools and spares)

Operations

eManager Engineering

- Tools for managers responsible for network energy efficiency
- Energy optimisation for specific sites through to entire networks
  - Benchmarking of trend data and variations from norms, thus identifying sites that are not performing to target
  - KPIs include generator run-hours, diesel consumption, grid power consumption, site power outages, temperatures, use of batteries, etc.
  - Detailed graphs with history for all relevant site energy data, including site load, generated power (solar/wind/grid/generator), battery usage, cabinet and battery temperatures, etc.
- Tracking of battery and generator replacement milestones
- Site configuration settings can be read and changed depending on user access rights

Engineering

eManager Business Control

- Tools for managers responsible for energy OPEX control and asset management
- Automated scheduled reporting on energy OPEX and related KPIs
  - Energy cost reporting includes overall site energy consumption as well as specific cost for diesel, grid power, generator service and replacement, and batteries
  - Energy usage trends and variations to support energy cost forecasting
  - Data can be presented for a specific individual site, a regional group of sites or for a full network
- Advanced asset management for both eSite and external (e.g. genset) assets at each site, including asset usage and remaining value of batteries and gensets



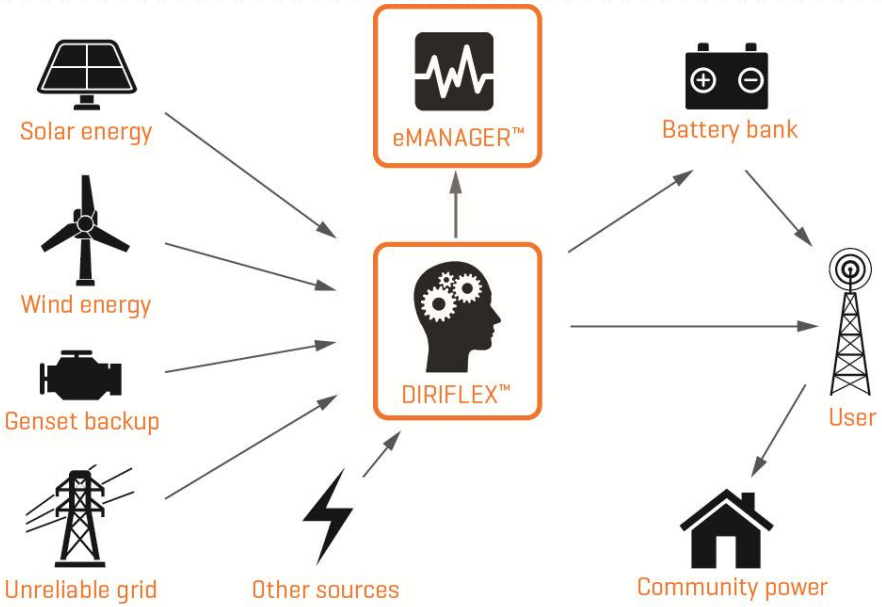
eManager Site Logistics

- Tools for managers and partners responsible for site visits
- Wide range of logistics data including (but not limited to):
  - Diesel refill
  - Generator service
  - eSite service
  - Battery and generator replacement
  - Free-air cooling filter replacement
  - Diesel theft
- Warnings/alarms highlight scenarios beyond established norms
- Support for site grouping for efficient logistics



Diriflex – An Intelligent Controller

- Patented Diriflex control system - the brain of eSite
- Optimises the use of batteries and renewable energy sources (if available) to lower diesel consumption, while prolonging the lifespan of the batteries and other components
- One control system for all energy sources enables optimal decisions regarding energy efficiency
- Database with +200 parameters, local data storage and computing for communication efficiency





Web-based monitoring tool

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Concluding remarks

- It is essential to monitor and manage your energy network for sustained performance
- Maximise and maintain your savings and make green power economically sustainable
- That’s why we have made eManager a standard part of eSite

