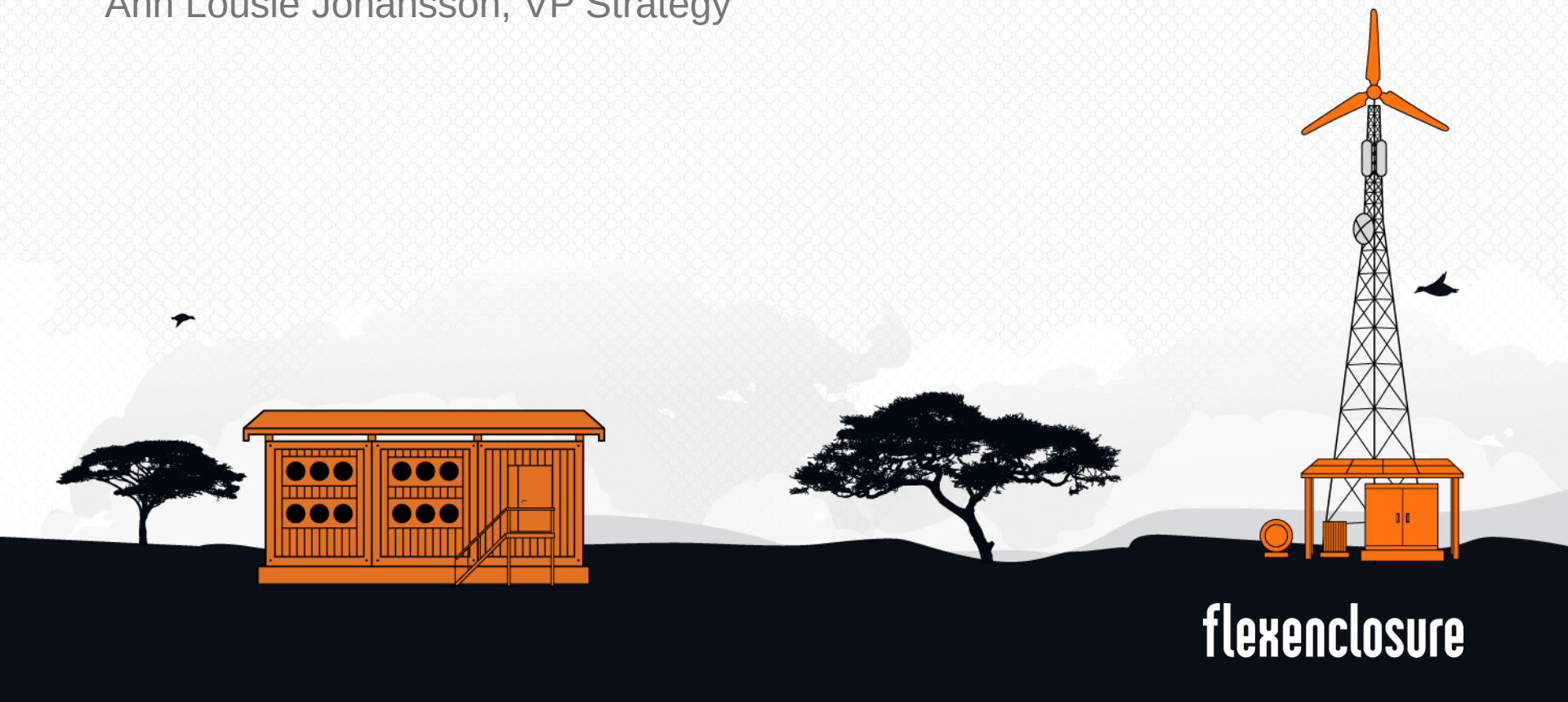
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Realising the Savings of Hybrid Power Systems

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Flexenclosure background



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

Flexenclosure supplies

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



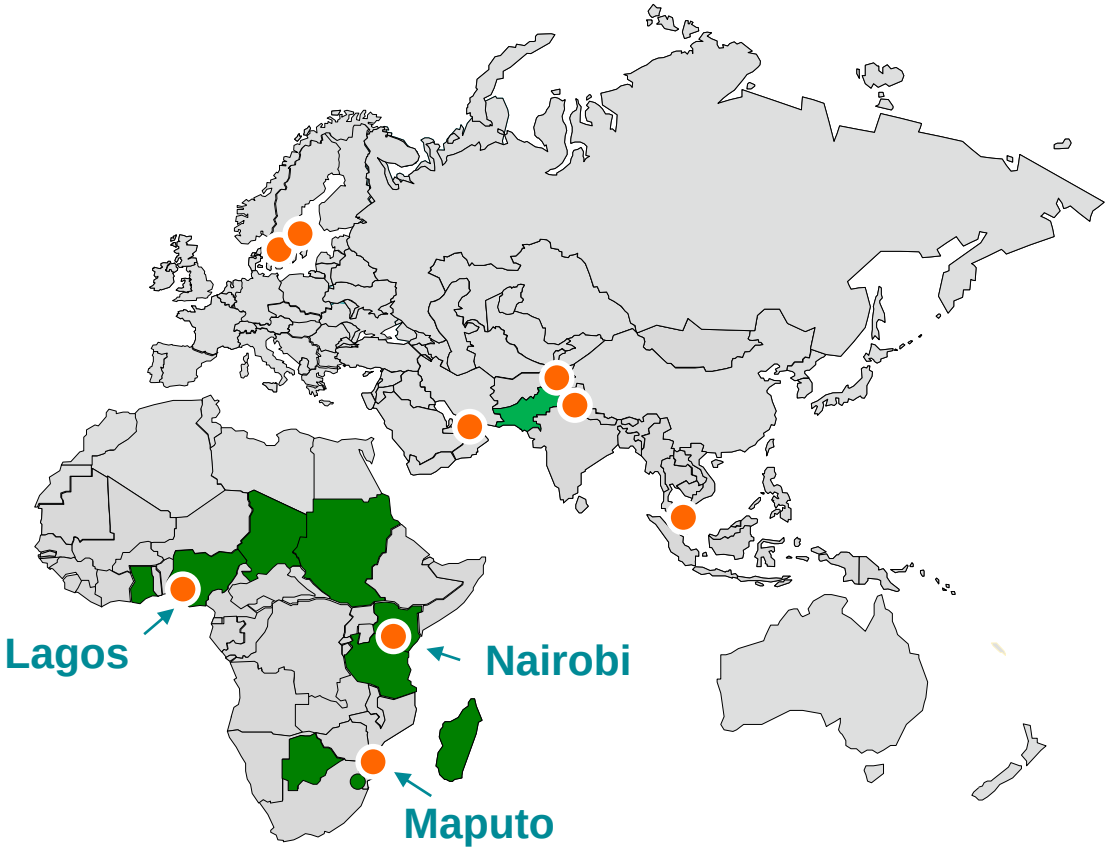
eCentre: custom-designed prefabricated data centres that are fast to deploy, energy efficient and easy to expand



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Flexenclosure presence and green power deployments

Flexenclosure office locations and countries with eSite deployments









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Actual measured savings of eSite deployments

Operator	eSite type	Average load	Genset run-hours with eSite	Genset run-hour reduction	Deployed
Op1 Ghana	Solar	2.5 kW	5.8 h/day	76%	2012
Op1 Kenya	Solar & Wind	1.4 kW	1.8 h/day	92%	2009
Op 1 Nigeria	Solar	1.0 kW	2.4 h/day	91%	2011
Op 1 Tanzania	Solar	0.9 kW	2.0 h/day	92%	2012
Op 2 India	Solar	1.5 kW	3.3 h/day	86%	2012
Op 3 Nigeria	Solar & Wind	1.6 kW	1.5 h/day	94%	2011
Op 4 Nigeria	Solar	1.4 kW	4.5 h/day	81%	2011
Op 4 South Sudan	Solar	1.4 kW	2.2 h/day	91%	2013
Op 4 Swaziland	Grid	1.6 kW	0.9 h/day	96%	2012
Op 5 Madagascar	Solar & Wind	1.4 kW	1.2 h/day	95%	2011
Op 6 Pakistan	Solar	0.9 kW	2.3 h/day	90%	2013
Op 6 Pakistan	Grid	1.2 kW	0.6h/day	98%	2013
Op 7 Tanzania	Solar	1.6 kW	2.6 h/day	89%	2012
Op 8 Sudan	Solar & Wind	1.3 kW	0.5 h/day	95%	2011

What makes green power a sustainable model?

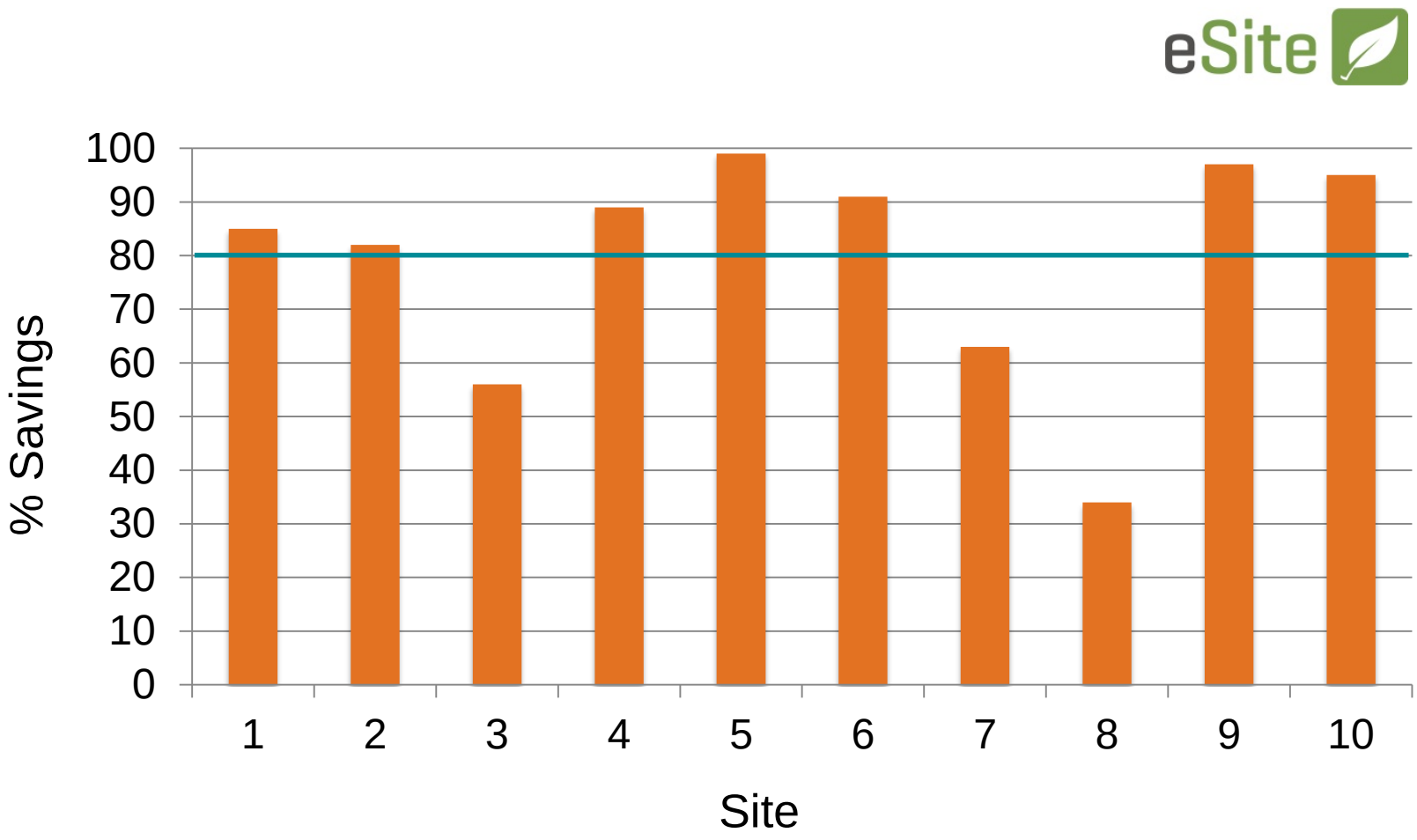
- The cost of running sites and savings using green power:
  - The cost of running a site: Approx. **$40,000** per year in Africa
  - A good hybrid power system can provide at least **80% savings for a 1,5 kW load:** Running cost equals **$8,000** per year
  - 1,000 sites: **$32 Million** in savings

- The cost of non-performance:
  - **10%** drop in or worse performance: Additional cost of **$4,000** per year
  - 1,000 sites: **$4 Million less savings** per year
  - 5 years: **$20 Million less savings**

eSite

Live performance and finding 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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Key learnings from the field

- Training is important at all stages of the project and for different levels of personnel
- Remote monitoring of sites is crucial to understand reasons for problems
- Existing gensets can often not deliver power according to the rated kVA
- Unauthorised human intervention with power equipment on site will affect the performance of the power system
- Re-use of existing batteries means that the expected savings, in most cases, cannot be achieved

The power system provider, the operator or tower company, and the managed service company need to work together to obtain optimal and sustained performance

- It's all about...
  - Power system reliability and performance
  - Monitor, manage and optimise your network over time
  - Analyse, take remote and preventive actions

Flexenclosure services and support

- Provided Services and Support:
  - Turnkey capability for installation and commissioning
  - Training
  - Local support services
  - Remote expert support
  - Remote monitoring and management system support
  - Customer report services
  - Network audits and power optimisation support



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eSite Business Models – CAPEX and OPEX Models



- **Capex* & RSSM (Remote Support and Software Maintenance)** – we sell equipment together with installation and support services.
- **Reduced Capex Plus Performance Bonus** – we offer lower prices in exchange for annual performance bonus.
- **eSite Rental** – we rent the eSite to the customer. It could be operating or financial lease*.
- **Managed Sites** – we contract to manage the sites for the customer. Fixed fee for Customer plus power costs. (Together with partner)
- **Managed Sites and Power** – we contract to manage the sites and the power for the customer – ESCO model. (Together with partner)

* Flexenclosure can access attractive financing through Swedish banks and EKN (Swedish Export Credit Agency) or e.g. IFC (share holder of Flexenclosure since 2013)

eSite: optimised site power

- eSite is a **fully integrated and optimised** site power solution delivering up to 90% diesel savings at telecom sites
- eSite provides the **best and most sustained performance** for site power solutions
  - Modular and flexible
  - Pre-assembled and fully factory tested
  - Fast to deploy and easy to maintain
  - Calibrated to provide optimal efficiency
  - Diriflex – single system controlling all energy sources, enabling optimal decisions regarding energy efficiency
  - Adaptive battery charging strategies
  - eManager for network-level optimisation
  - Designed to last at least 15 years
  - Typical payback in less than 2 years





eSite k10 – maximising profitability at shared sites

- Flexenclosure has developed a new eSite specifically for tower companies
- eSite k10 is a hybrid power system that enables modular expansion as the number of tenants increases
  - Dimensioned for total loads up to 10 kW
  - Power distribution for up to 4 tenants
  - Separate energy meters and load disconnect for each tenant

- eSite k10 only requires expansion of its battery bank for increased number of tenants.
- Consumed energy (kWh) and other tenant-related data is monitored through Diriflex and eManager
- Tenants can be added or removed easily – both in eSite and eManager

eManager

- eManager™ is a cloud- or server based 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
- eManager is standard part of eSite
- eManager has a web based interface



eManager

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Bad-grid: eSite with Diriflex Grid Manager (DGM)

- Increases ‘usability’ of bad-grid – regardless of stability and voltage
- Detects if the grid is operational or not and determines if it can be used
- Designed to cope with and make use of a bad grid even with major phase (45-65 Hz) and voltage (85-300 V) variations
- Can make use of grid and genset even if one or two phases are lost
- Prioritizes renewable sources and grid over genset
- Radical reduction in genset run-hours compared to use of traditional Automatic Transfer Switch (ATS)

eSite – maximum opex reduction and peace of mind

- **eSite** enables lowest possible site opex
- **eSite** enables capital efficient growth in multi-tenant environments
- **eSite and eManager** provide the technical flexibility to enable the best economic solution in every site situation – off-grid and bad-grid
- **eSite** can be deployed with various business models – from pure capex to pure opex models
- **eSite** means peace of mind in extreme environments



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