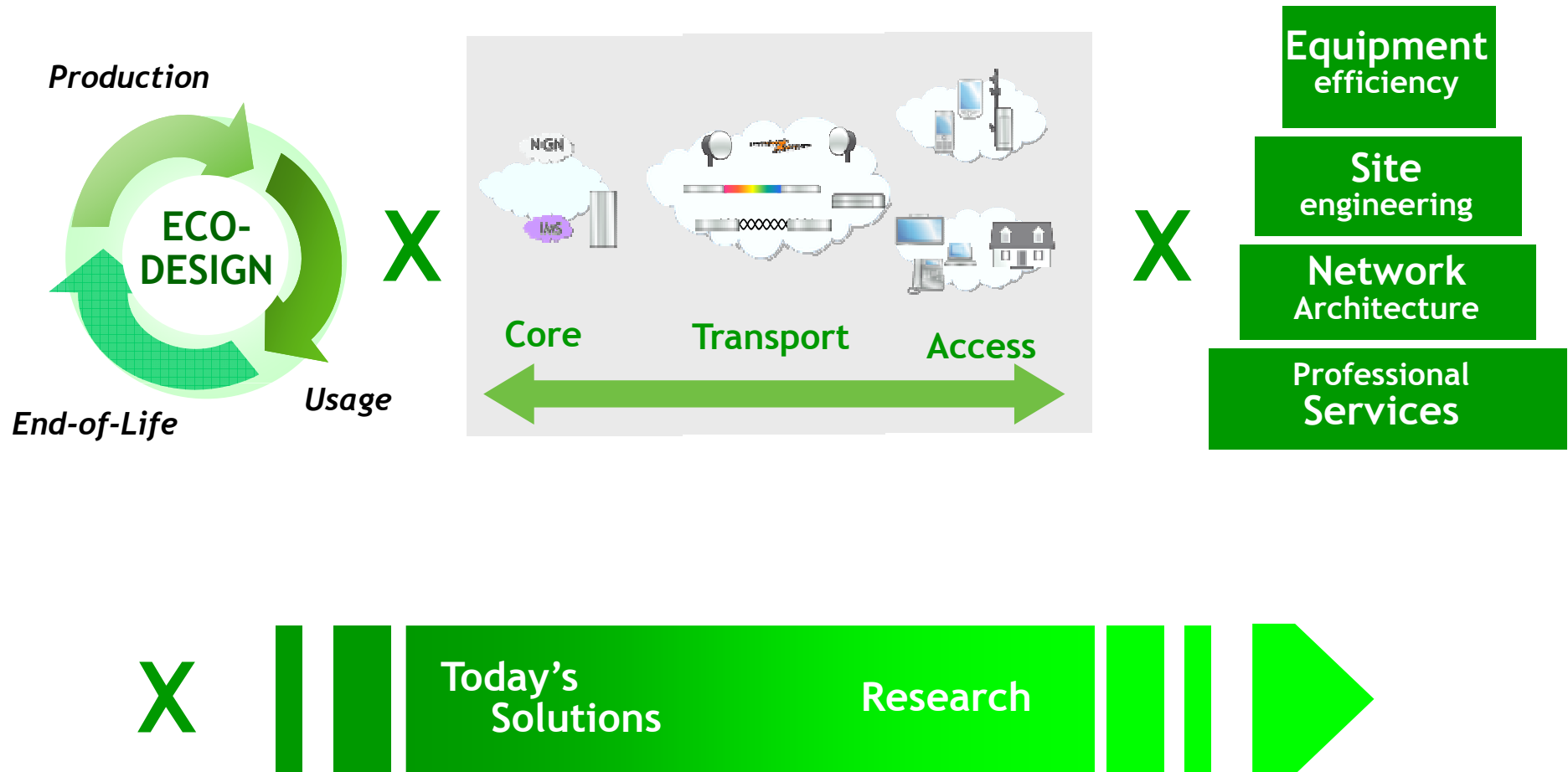
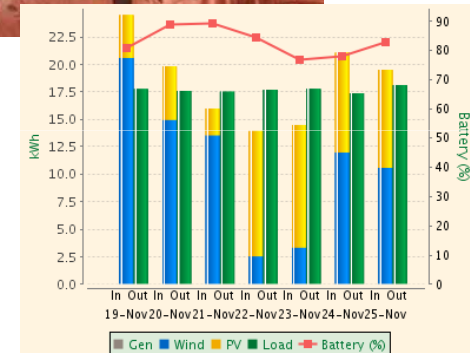


# Foreword Towards eco-sustainable networks

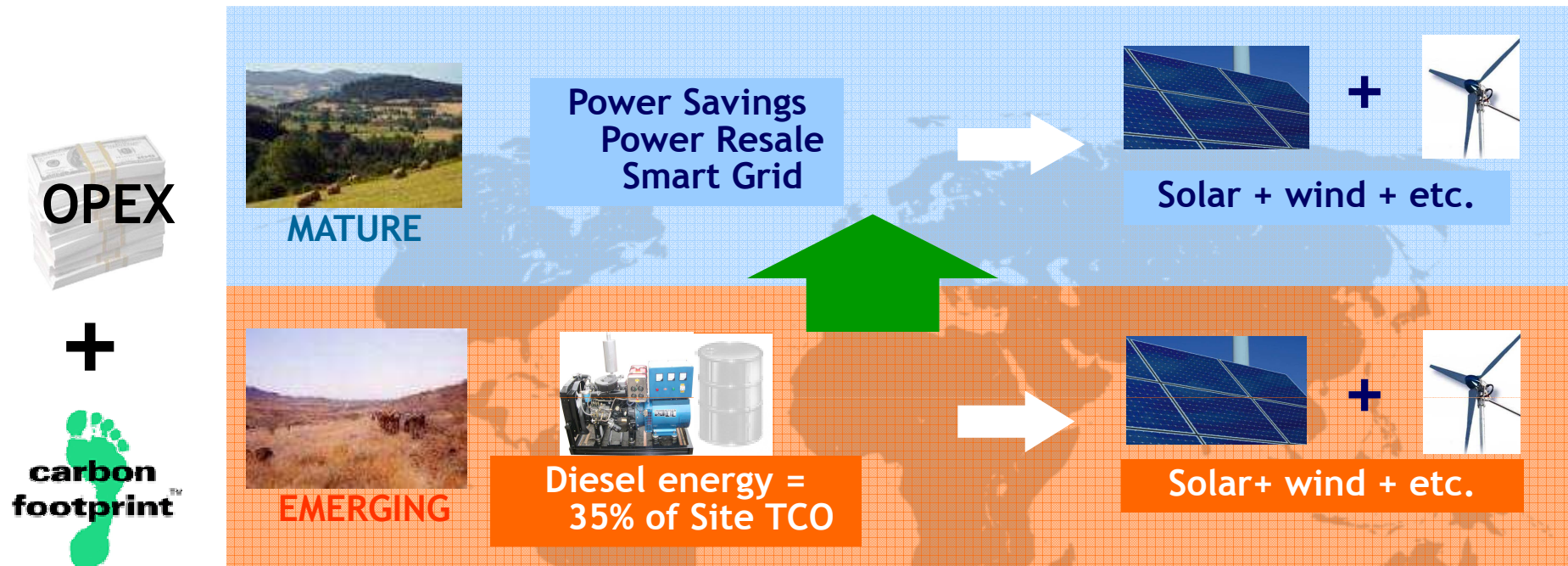




# Alcatel-Lucent Alternative Energy Program

Generalizing Alternative Energies for Telecom

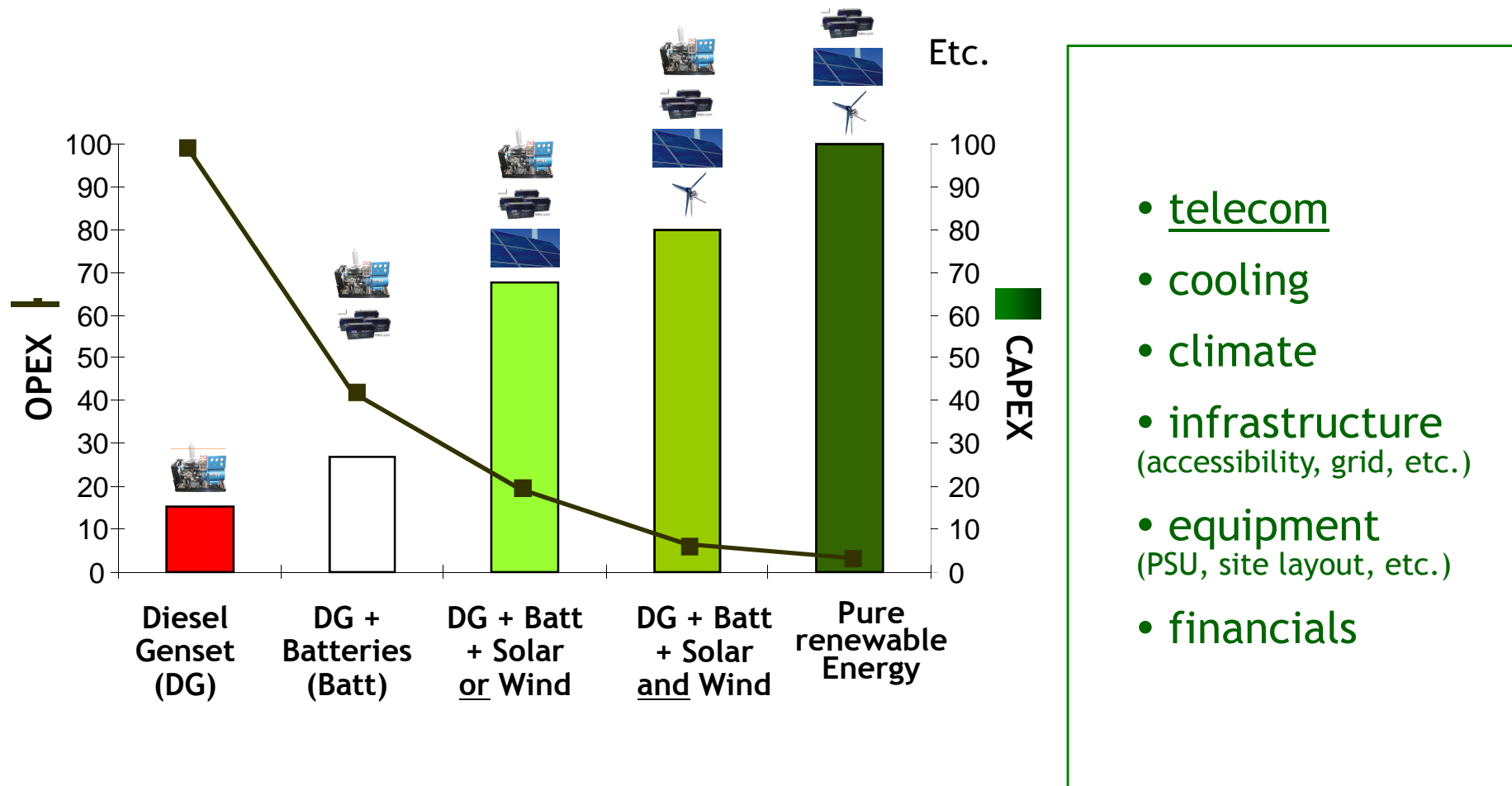
# Alternative Energies for Wireless Telecom Market



**BTS powered with alternative energies:  
100K+ sites by 2012**

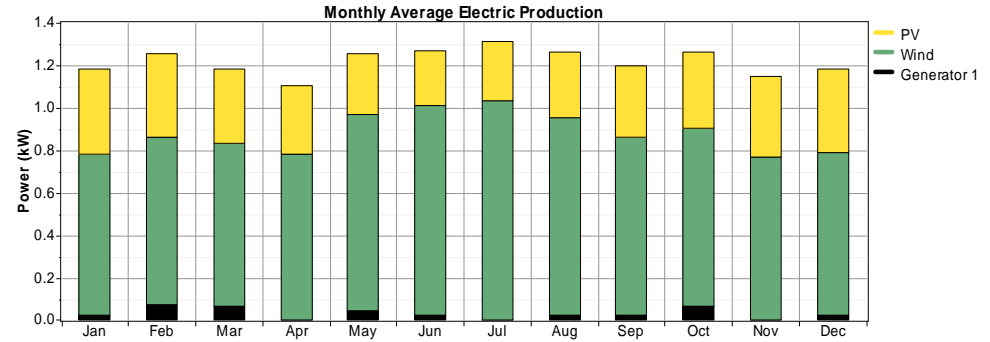
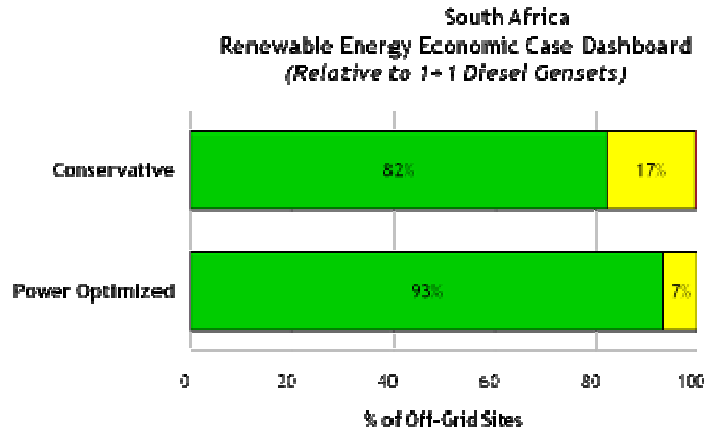
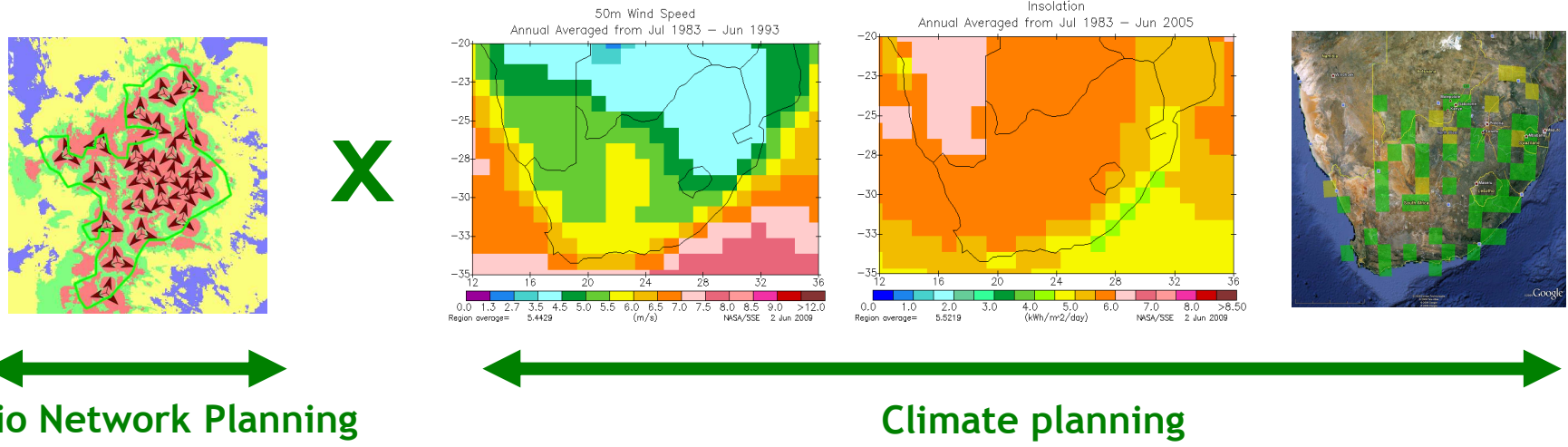
*Sources:*  
- GSM Association  
- ABI Research

# A range of solutions

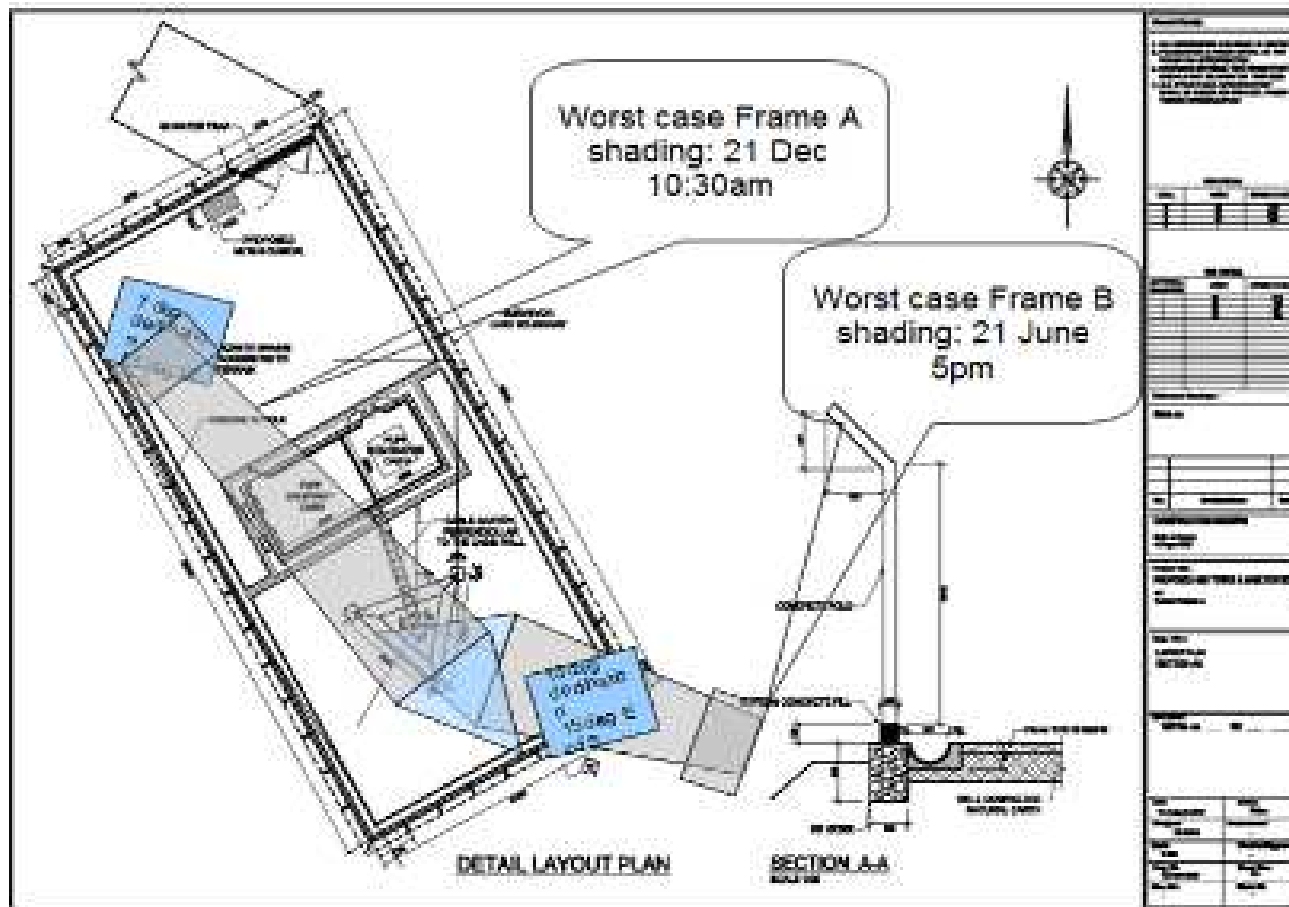


How to manage site-per-site energy solutions introduction & evolution?

# Building cross-Competencies - Planning & design



# Building cross-Competencies - Site engineering




- Shadings
- Tower impact
- Batteries layout
- etc.

# Example in Vodafone Qatar

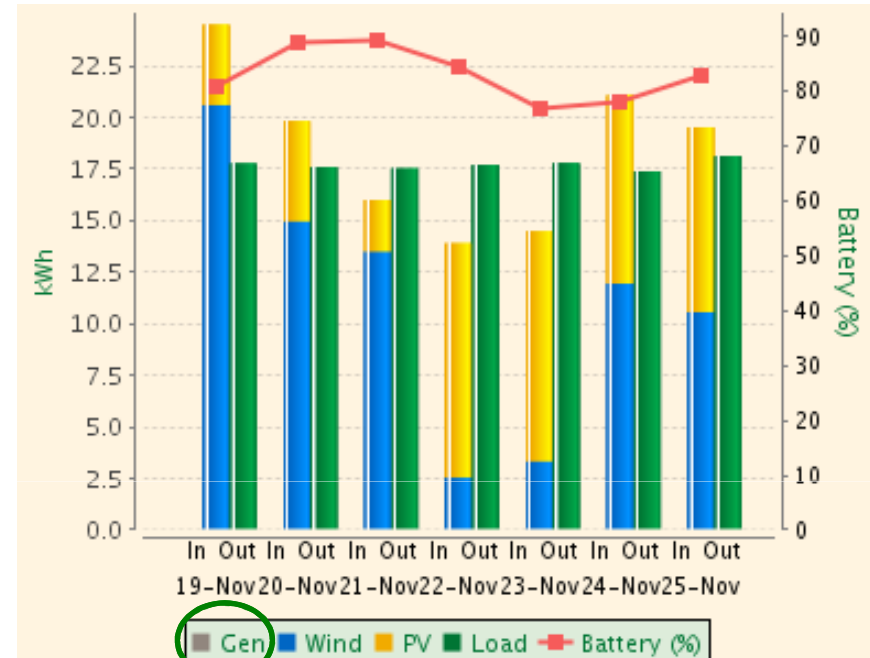


Existing BTS site running 100% with Diesel generator

+ SUN + WIND

+ smart control



**OPEX savings monitored in real time weather x energy parameters**

« 90% reduction in diesel consumption. One of the most innovative and best-performing solutions that we have tested so far in Vodafone »

(Jenny Howe, Vodafone Qatar CTO, Jan 2010)

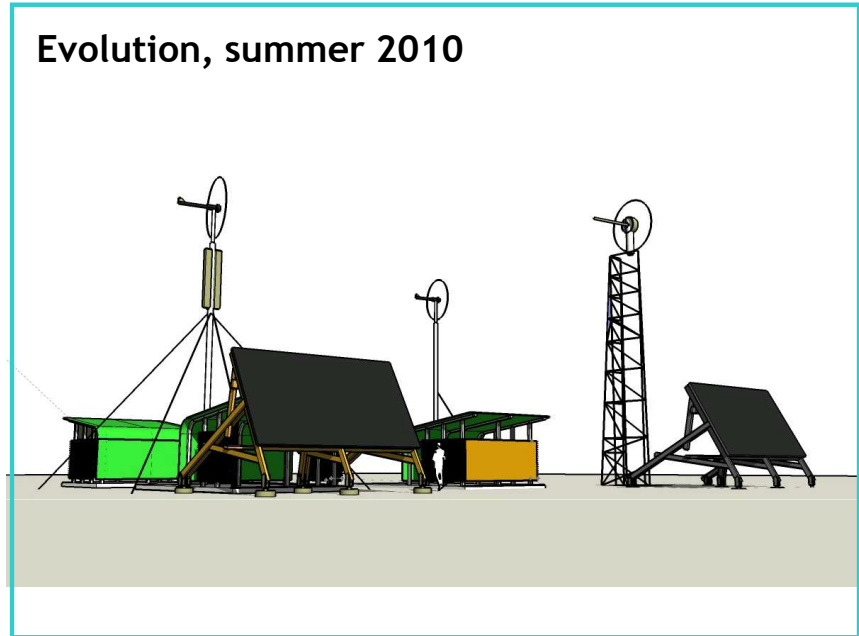
# Leveraging our unique Lab



Lab

Pilot

In Alcatel-Lucent site of Villarceaux, near Paris.



Evolution, summer 2010

- Live testing
- Benchmarking & qualification
- Ecosystem consolidation

**PROACTIVELY BUILDING A ROADMAP WITH THE ALTERNATIVE ENERGY WORLD**

## Conclusion: towards self-powered networks

---



Telecom energy efficiency the starting point



Integration, design, monitoring are key



Towards grid-connected, wireline, network-wide, smart grid

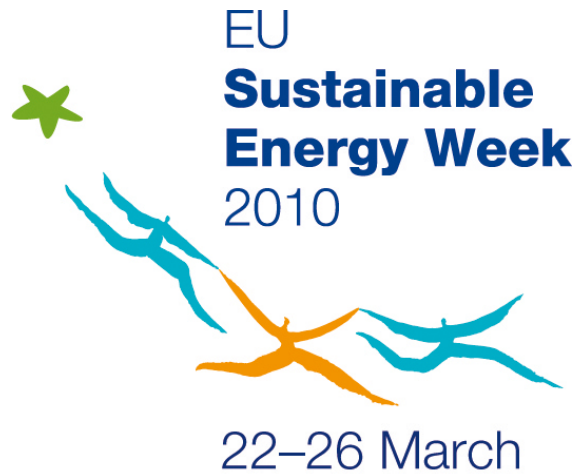
[www.alcatel-lucent.com/alternative-energy](http://www.alcatel-lucent.com/alternative-energy)

# Recognitions

---



*Winner of France's 1st Digital Green Growth Prize (Dec 2009)*



*Winner of the European Union's 2010 Sustainable Energy Award (March 2010)*