



# €1.8 million per year of cost-effective energy savings identified by Telefónica Germany

## Background

Energy efficiency is a strategic priority for mobile network operators globally. As mobile use expands, so does the demand for energy, particularly by the network infrastructure.

The GSMA's Mobile Energy Efficiency (MEE) Network Benchmarking service helps mobile operators lower their energy costs and carbon footprint by benchmarking network energy efficiency across their portfolio and anonymously with their global peers. MEE Benchmarking has 35 mobile network operator (MNO) participants, accounting for more than 200 networks worldwide. Providing a like-for-like comparison, MEE Benchmarking uniquely normalises for factors outside an MNO's control, such as temperature and population density.

Launched in 2011, MEE Optimisation is a follow-on service that develops action plans for MNOs to reduce network energy costs and greenhouse gas emissions. It identifies energy-saving measures and assesses the business case of each measure, enabling MNOs to implement cost-effective solutions.

## The opportunity

Telefónica Germany (TDE) has participated in MEE

Benchmarking since the service's launch in 2010 and has improved network energy efficiency by 14% per connection over the past three years.

TDE was keen to improve its ranking in the benchmarking. It became the first MNO to sign up to the GSMA's MEE Optimisation service, leveraging the combined expertise of the GSMA and Nokia Siemens Networks' Energy Solution services. The aim was to identify further cost-effective savings in the radio network, in addition to the measures that TDE is currently implementing as part of its network energy efficiency and carbon reduction programme. The MEE Optimisation project ran from September to December 2011.

## The process

The approach taken was to:

- Assemble a team of energy experts from Nokia Siemens Networks, Telefónica and the GSMA
- Choose a subset of 20 representative cell sites in Germany, establish the data requirements, and gather and analyse the data
- Conduct technical visits to four cell sites and deploy smart meters where possible
- Assess the information and produce a summary of results.

## The results

The project identified several energy efficiency measures that TDE could implement. The two key recommendations are:

**Smart Energy Control:** Annual savings of €400 000 (nine-month payback), 2 GWh and 1 KTCO<sub>2</sub> are estimated by Nokia Siemens Networks. TDE will investigate possible implementation of Nokia Siemens Networks' Smart Energy Control, a software product which implements radio stand-by features to save energy.

**Switching to more efficient rectifiers:** Estimated annual savings of approximately €1 million in operating expenses, and up to 5 GWh and 2 KTCO<sub>2</sub>. The aim is to ensure that rectifiers used on-site are high efficiency and the upgrade provides optimal results. TDE will switch to high efficiency rectifiers on over 3 000 sites in 2012.

The project identified overall estimated annual savings of up to €1.8 million in TDE's radio network, by undertaking cost-effective measures with financial paybacks of nine to 30 months. The energy and carbon savings identified were up to 9 GWh and 4 KTCO<sub>2</sub> respectively. These savings would be in addition to the measures that TDE is currently implementing, which include switching more cell sites to free cooling.

**"Telefónica is fully committed to improving our Energy Efficiency. We defined public improvement targets and have dedicated over a decade of efforts to this area, as part of Telefónica Group's energy and carbon strategy. To be a MEE pioneer has helped us to quantify the opportunity ahead of us, and this optimisation exercise supported by GSMA and NSN is an important step in seizing that opportunity"**

*Gabriel Bonilha, Head of Energy Efficiency, Telefónica Group*

**"In 2011 we launched MEE Optimisation responding to demand from MNOs participating in MEE Benchmarking. We are delighted this initial collaboration with Telefónica and Nokia Siemens Networks is a success and look forward to the identified savings being implemented. The MEE Optimisation team is keen to replicate this success with other networks around the world."**

*Gabriel Solomon, Head of Public Policy, GSMA*

**"The audit Nokia Siemens Networks conducted, over Telefónica's network, provides a very good understanding of the current situation in the energy efficiency field. Additionally our cooperation with the GSMA and Telefónica helped Nokia Siemens Networks to understand and provide innovations and high quality solutions to enhance energy efficiency in Telefónica's Mobile Broadband business. In our solutions we see an ever greater convergence between good energy efficient performance and eco sensitive design which reduces the carbon footprint of telecommunications equipment. We are looking forward to cooperating in other areas to further enhance Telefónica's energy efficiency."**

*Nestor Gonzalez, Head of Sales Global Services, Nokia Siemens Networks*

**GSMA:** The GSMA represents the interests of mobile operators worldwide. Spanning more than 220 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem. [www.gsma.com](http://www.gsma.com)

**Telefónica Germany:** The Telefónica Group is the number one Spanish multinational by market capitalisation and one of the largest private telecommunications companies in the world. [www.telefonica.de](http://www.telefonica.de)

**Nokia Siemens Networks:** Nokia Siemens Networks is a leading global enabler of telecommunications services. Every day a quarter of the world's population connect using Nokia Siemens Networks' infrastructure and solutions. [www.nokiasiemensnetworks.com](http://www.nokiasiemensnetworks.com)



Mobile Energy  
Efficiency

GSMA Head Office  
5 New Street Square, London, EC4A 3BF, United Kingdom  
Tel + 44 (0) 20 7356 0600 Email: [mee@gsma.org](mailto:mee@gsma.org)

[www.gsma.com/mee](http://www.gsma.com/mee)