

CEER's power losses report advocates incentives for network operators to reduce network losses

- **Stable level of network losses and lack of harmonised data**
- **Smart metering has the potential to reduce power losses**
- **Harmonised definitions of losses and incentives to reduce losses are needed**

Today CEER¹ published its [Report on Power Losses](#). Packed with key data such as the amount of (technical and non-technical) losses, losses in transmission and distribution systems, the report is an invaluable resource for assessing Europe's network losses and their regulatory treatment. It includes case studies (e.g. on how the cost of losses is covered).

CEER found that the cost of losses is in most cases passed onto consumers². This report contains regulators' recommendations to better benchmark and reduce network losses.

CEER President, **Lord Mogg** stated

“Reducing power losses when transporting electricity across the grid is an important goal, not least because the costs of power losses are being passed onto consumers. The highest potential to reduce losses is at distribution level where there are significant non-technical losses (such as theft and non-metered consumption). Regulators recommend harmonised definitions for better benchmarking and incentivising network operators to reduce power losses.”

Stable level of network losses and lack of harmonised data

CEER found that network losses overall were stable in the years 2010-2015, but vary from year to year. In 2015, **transmission power losses** (as a proportion of total energy injected) ranged from **0.89% and 2.77%** across the surveyed countries. In comparison, **total losses** (transmission and distribution) ranged between **2.24% and 10.44%**.

The lack of harmonised rules and definitions of network losses makes country comparisons difficult, and this report highlights this as an initial benchmarking issue³. This is particularly true for non-technical losses (energy delivered and consumed but not billed), which some countries do not even report.

Smart metering has the potential to reduce power losses

Smart meters would mostly like reduce non-technical losses, via prevention of theft and more-accurate consumption reading. The report found that distributed generation (such as solar or wind farms) close to areas of consumption tends to reduce losses, while those located far from areas of consumption tends to increase losses.

Harmonised definitions of losses and incentives to reduce power losses are needed

CEER recommends harmonising definitions of losses so as to improve benchmarking across Europe.

The report contains a set of recommendations for good practices⁴ to reduce technical and non-technical losses. CEER advocates implementing incentives for system operators to reduce power losses.

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Ends (see Notes for Editors)

Notes for Editors:

1. The Council of European Energy Regulatory (CEER) is the voice of Europe's national energy regulators. Its members and observers are the independent statutory bodies responsible for energy regulation at national level. Visit www.ceer.eu for reports and much more.
2. Reducing network losses fits into CEER's [2015-2017 Action Plan](#) for [Implementing the 2020 Vision for Europe's Energy Customers](#) of putting consumers first, as the costs of power losses are currently passed on to consumers.
3. Power losses are an inevitable consequence of transporting electricity across the power grid. While most countries define losses as the difference between injected and withdrawn energy, there are a few exceptions to this general rule. Losses can be technical and non-technical, and occur at distribution and transmission levels. Technical losses refer to energy converted to heat in power lines and transformers, resulting from the laws of physics. The lack of harmonised definitions and rules hinders a straightforward benchmarking of power losses across Europe. There are differences in terms of which components of losses are considered (especially when dealing with non-technical losses), in the measuring tolerance of meters, whether imported and exported energy is included in injections and withdrawals and whether the energy needed for grid operation (own consumption) constitutes a share of reported power losses. While all responding countries include the technical component in their reported losses, there are many practices when it comes to non-technical losses and no common position whether and which components of non-technical losses should be included. For example, non-technical may (or may not) include hidden losses, theft, non-metered consumption and other losses. Hence, the differing approaches to losses should be kept in mind when making direct comparisons between the countries.
4. CEER Recommendations for reducing electricity network losses:
CEER recommends incentivising networks companies to reduce technical and non-technical losses. On a technical level, applying less transformational steps, using newer equipment with the most efficient technology, and optimising both network flows and system architecture for distributed generation are all recommended improvements. On a non-technical level, new technologies such as smart meters and efforts to reduce theft will play a role as well in reducing losses.

Overall:

- 1) Harmonise definitions for improved benchmarking
- 2) Make more data available, such as the availability of energy injected into distribution grids, which would permit the calculation of distribution system losses as a percentage of energy injected into distribution grids
- 3) Incentivise system operators to reduce losses instead of passing losses on to consumers
- 4) Employ a life cycle costing approach that includes losses when making investment decisions

Technical losses:

- 1) Increase voltage levels
- 2) Apply less transformational steps to deliver electricity to consumers
- 3) Utilise new and improved equipment
- 4) Employ distributed generation in a more efficient manner, including combining it with local storage
- 5) Optimise network flows – reduce peaking
- 6) In general, pursue network architecture and management that promote the highest efficiency

Non-Technical losses:

- 1) All countries should collect data on these types of losses
- 2) Focus on more accurate recording of electricity consumptions through improved metering and the use of smart meters
- 3) Reduce theft and other hidden losses