

TECHNICAL REPORT

Demand side power quality management

Withdrawn



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TECHNICAL REPORT



Demand side power quality management

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DEMAND SIDE POWER QUALITY MANAGEMENT

FOREWORD

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The text of this Technical Report is based on the following documents:

Enquiry draft	Report on voting
85/640/DTR	85/647/RVDTR

Full information on the voting for the approval of this Technical Report can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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INTRODUCTION

The effective management of power quality on the demand side (power consumer) is an essential activity to ensure the proper operation of the electrical equipment operating on the consumer site.

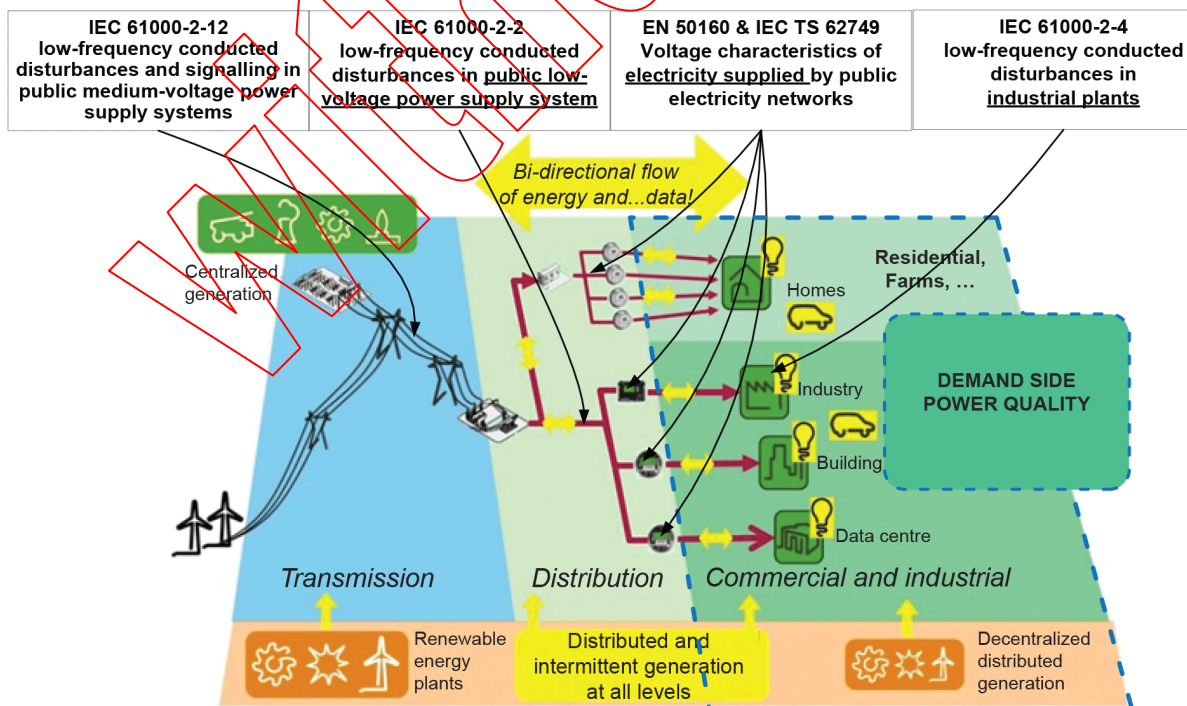
While the level of power quality present at the point of supply is generally monitored, and managed by the power provider (utility), the actual level of power disturbances present on the consumer site could be significantly worse and may negatively impact the operation of the electrical equipment. The interaction between these loads and the voltage supply is often the cause of degraded power quality on the demand side.

One effective step in the prevention of the hindrances caused by power quality is the assessment of the level of power quality disturbance present on the demand side. However, proper measurements require adequate planning and understanding of the measurement systems and their results.

This document provides guidance on how to establish, implement, exploit, maintain and improve a demand side power quality monitoring system. This document will also facilitate the tailoring of power quality monitoring concepts to the specific site where it will be deployed.

Disturbances in the electrical energy can have an important impact on the equipment, processes, organization's activities and environment. Some electrical installations (industrial sites, data centres, hospitals, etc.) are particularly impacted by the poor quality of electrical energy.

The quality of the electrical energy has different origins, impacts and measurement indicators on the supply side and on the demand side – see Figure 1 presenting an overview of the electrical network from generation (supply side) to consumer (demand side).



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Figure 1 – Overview of electrical distribution system from supply side to demand side

While documents such as IEC TS 62749 or EN 50160 define the voltage characteristics provided by a public network (called power quality of the grid), this document gives guidance for qualifying the electrical quality of internal networks including voltage and current disturbances (called demand side power quality).

In this document, power quality on the demand side, related to buildings, industrial and data centres applications is referred to as demand side power quality (DSPQ).

See Annex D for a general statement on demand side power quality.

See Annex E for a discussion about grid evolution.

See Annex F for a list of standards related to demand side power quality.

See Annex G for definition of electrical parameters.

It is recommended that readers possess a minimum knowledge of power quality phenomena.

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