



项目合伙人



调查电能质量：欧洲经验

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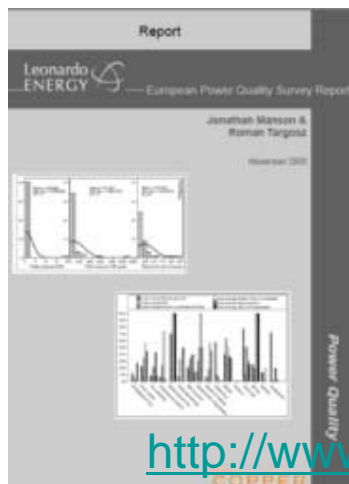


议程

- 欧洲电能质量调查简介
- 欧洲电能质量调查的主要发现
- 自欧洲电能质量调查以来的变化
- 利用欧洲电能质量调查的经验

简介：目标与范围

- **目标：**评估欧盟25个成员国内以电能为主导的那些部门因电能质量差而产生的损耗成本。
- **范围：**在本次调查中，电能质量成本按中断和主要电能质量现象的分类进行报告，每年详述一次，一般按上述情况报告，或如果频率小于一年一次，则按比例报告。
- **参考文件：**由负责欧洲该项目的Jonathan Manson和Roman Targosz编写的《欧洲电能质量调查报告》。



www.leonardo-energy.org

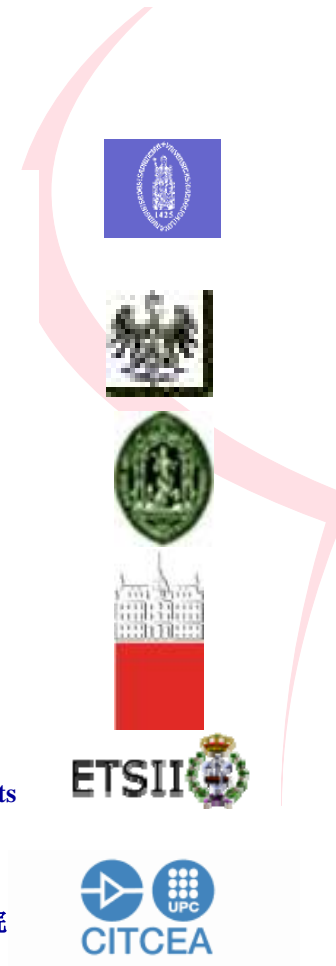
<http://www.leonardo-energy.org/european-power-quality-survey-report>



简介：相关合伙人

学术类

- 比利时-鲁汶大学
- 波兰-克拉科夫AGH科技大学
- 葡萄牙-科英布拉大学
- 斯洛文尼亚-卢布尔雅那大学
- 西班牙-马德里理工大学-工业工程高级技术学院
- 西班牙-加泰罗尼亚理工大学-Centre d' Innovació Tecnològica en Convertidors Estàtics i Accionaments
- 英国-曼彻斯特大学（前身是曼彻斯特大学理工学院）



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工业类

- Bovis LendLease España公司
- 企业风险管理咨询有限公司 (英国)
- 意大利ECD公司
- Edu Watt, 法国
- 美国电力研究院
- Laborelec公司 (比利时)
- APC-MGE公司 (欧盟)
- 施耐德电气投资有限公司 (欧盟和西班牙)



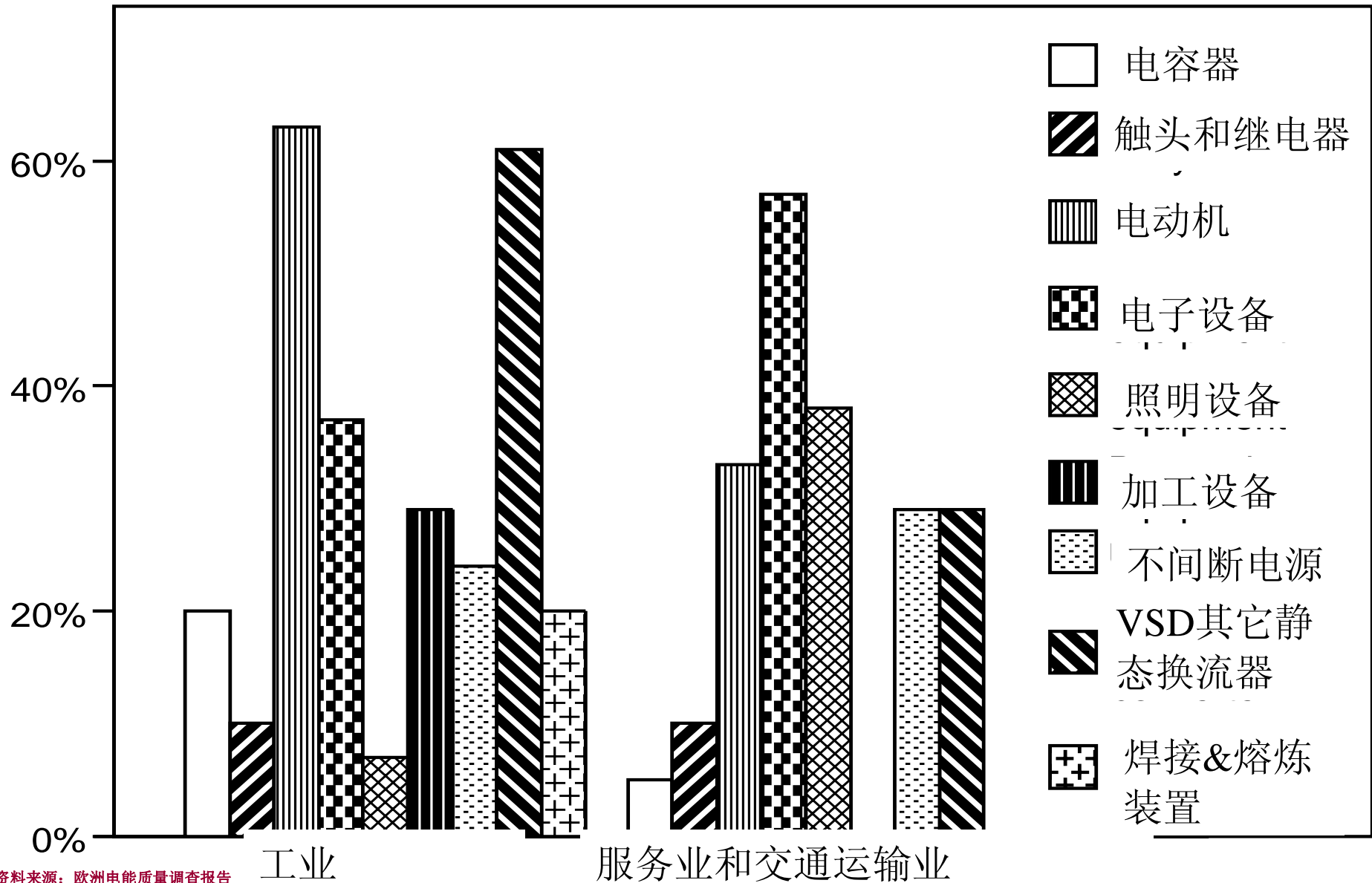
简介-方法论

2年内达8个欧洲国家
16个工业部门

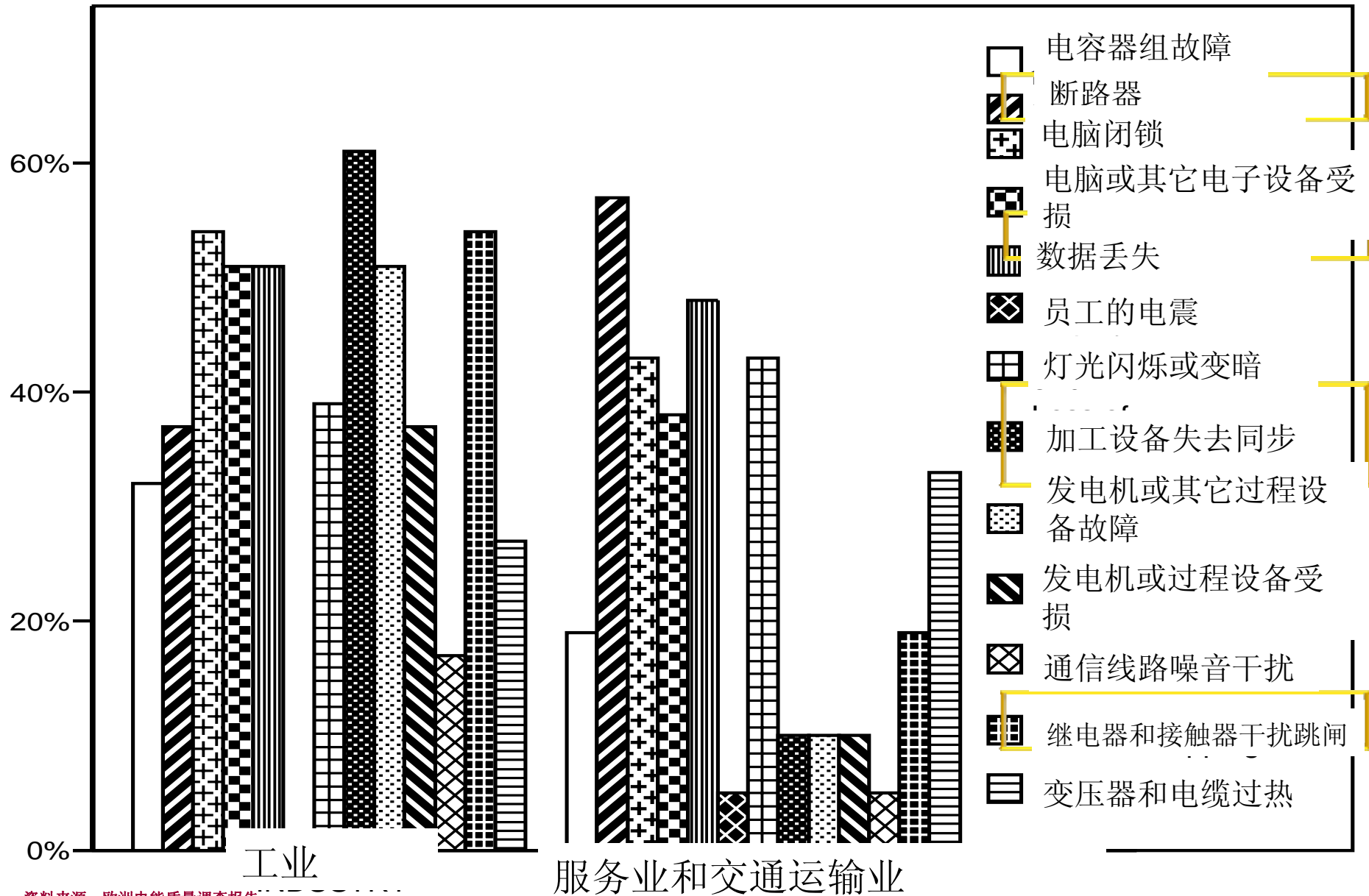
62次面对面访谈，6次问卷调查

欧盟25个成员国电能损耗的外推法

主要发现：电能质量问题的原因

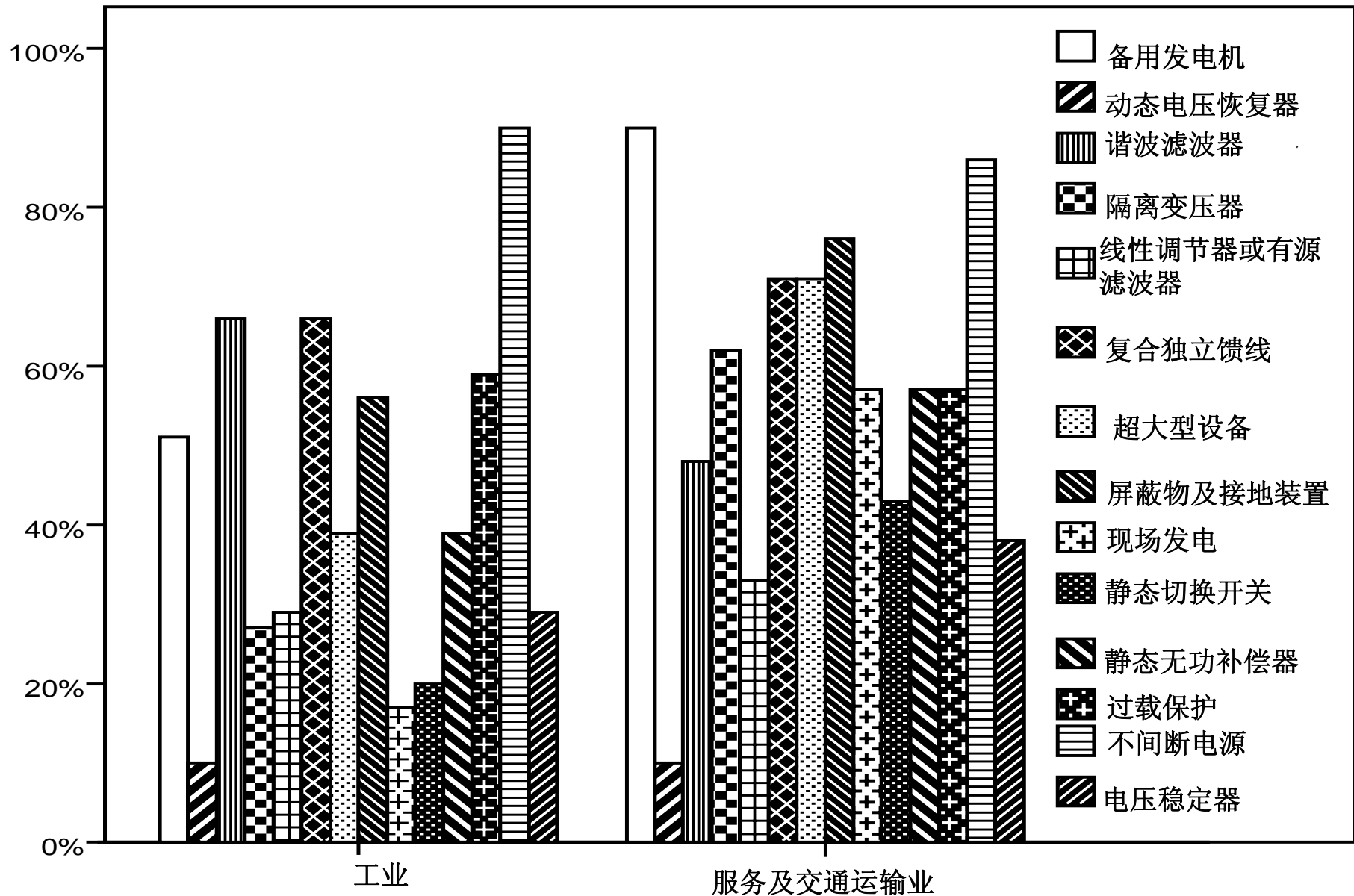


主要发现：后果



资料来源：欧洲电能质量调查报告

主要发现：解决方案的采用



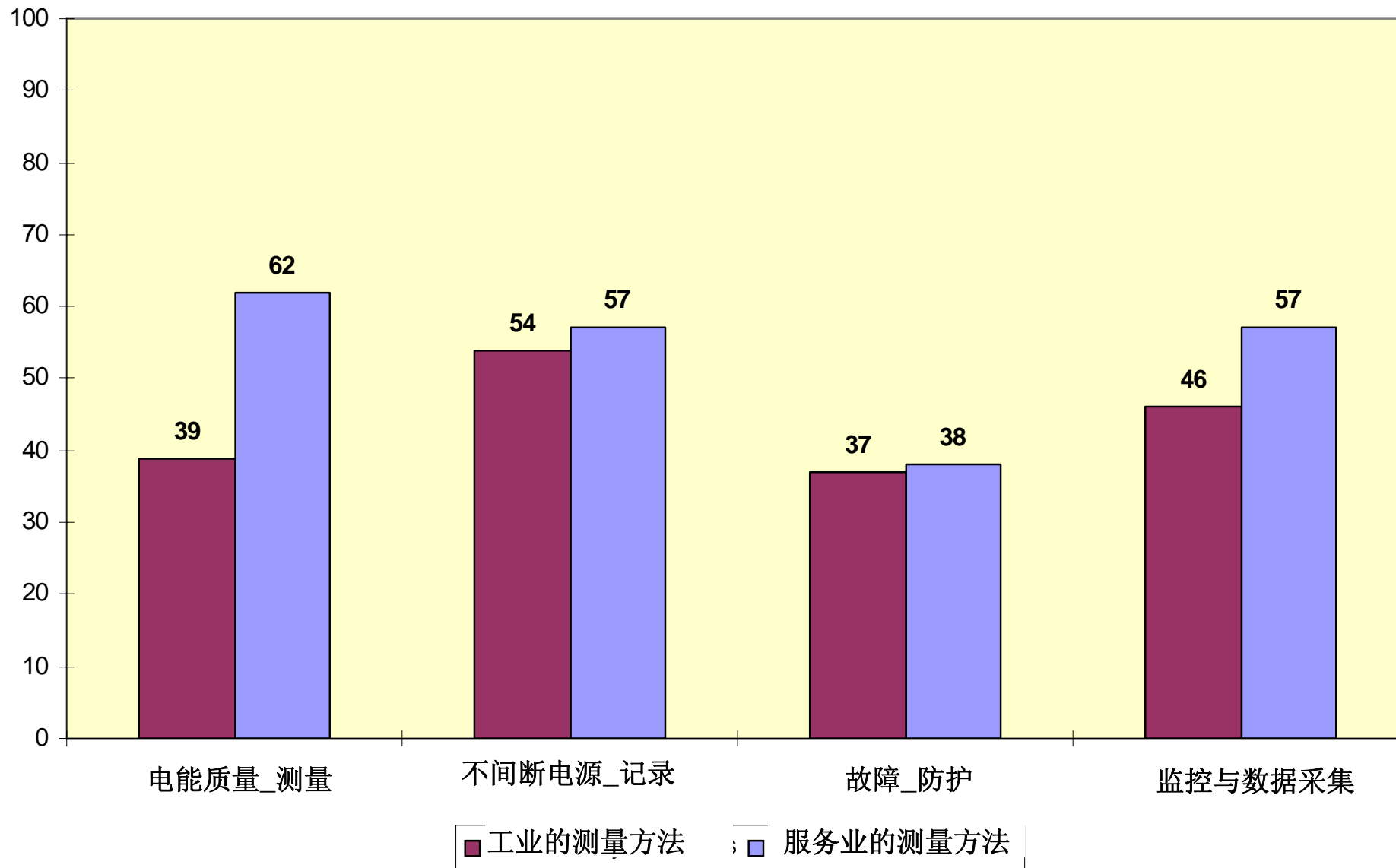
来源：欧洲电力品质调查报告

ENERGY

www.euroenergy.org



主要发现：缺少测量



主要发现：单独事项的成本

电力质量事件	平均成本
电涌或瞬变现象	120 000 – 180 000欧元
长时间中断	90 000欧元
短时中断，服务行业	18 000 – 36 000欧元
电压骤降	2000 – 4000欧元

主要发现：总结

电能质量不良使欧洲企业每年花费超过1500亿欧元
一些公司营业额的10% 都浪费在不良的电能质量上

导致电能质量不良的主要原因
终端用户安装
电子设备

- 工业生产部门：其生产能力受到的影响及产量的减少比服务业/交通运输业更明显。
- 供电中断：大部分损失都来自于这些部门。
- 生产力的损失：设备损坏成本+操作损耗

变化：来自于科学界的信息

- 国际供电会议论文与报告-2007年5月
- 美国电力科学研究院会议- 2007年6月
- 巴塞罗那电能质量会议演讲-2007年10月

变更：决策者

- 主要部门专业组织展示
- 关键部门小册：

<http://www.leonardo-energy.org/european-power-quality-survey-results>

LEONARDO ENERGY POWER QUALITY

European Power Quality Survey

POOR POWER QUALITY COSTS EUROPEAN BUSINESS MORE THAN €150 BILLION A YEAR

Reliability and consistency of electricity supply is critical to many industrial and service activities. Effective power quality management, however, offers firms both competitive and strategic advantages. It not only reduces the cost of power, but also increases the reliability and consistency of power supply, which in turn reduces the risk of production downtime and the associated costs of lost production.

SURVEY SHOWS SIGNIFICANT IMPACT ON COMPANY TURNOVER

The 2007 survey is the most detailed industrial and commercial data analysis ever conducted.

Several companies are looking up to 18 per cent of their turnover to poor Power Quality

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- And even when poor Power Quality does not appear to be an immediate cause for concern, it can still be a significant factor in the overall performance of a company.
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HOW MUCH ARE POOR POWER QUALITY EVENTS COSTING YOU?

The following average costs by type of power quality event were calculated in the survey results:

Surge or sags	€220,000 - 380,000
Long duration	€80,000
Short duration, sensitive equipment	€14,000 - 30,000
Short duration, sensitive equipment	€2000 - 30,000
Tripping	€1,000 - €2,000

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LEONARDO ENERGY POWER QUALITY

European Power Quality Survey

EXPENSIVE PRODUCTION LOSSES DUE TO INADEQUATE POWER SUPPLY

At least one in four manufacturing plants in Europe are experiencing power quality problems that are causing production losses. Power Quality (PQ) is a critical factor in the overall performance of a company.

Several companies are looking up to 18 per cent of their turnover to poor Power Quality

KEY FINDINGS

- At least one in four manufacturing plants in Europe are experiencing power quality problems that are causing production losses.
- Power Quality (PQ) is a critical factor in the overall performance of a company.
- Several companies are looking up to 18 per cent of their turnover to poor Power Quality.

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LEONARDO ENERGY POWER QUALITY

European Power Quality Survey

CHEMICAL PLANTS SUFFER FROM INADEQUATE POWER SUPPLY

Chemical plants are particularly vulnerable to power quality problems. The survey shows that power quality issues are causing significant production losses in the chemical industry.

KEY FINDINGS

- Chemical plants are particularly vulnerable to power quality problems.
- The survey shows that power quality issues are causing significant production losses in the chemical industry.

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LEONARDO ENERGY POWER QUALITY

European Power Quality Survey

METALS SECTOR NOT AWARE OF ITS POWER QUALITY LOSSES

The metals sector is not fully aware of the extent of its power quality losses. The survey shows that power quality issues are causing significant production losses in the metals sector.

KEY FINDINGS

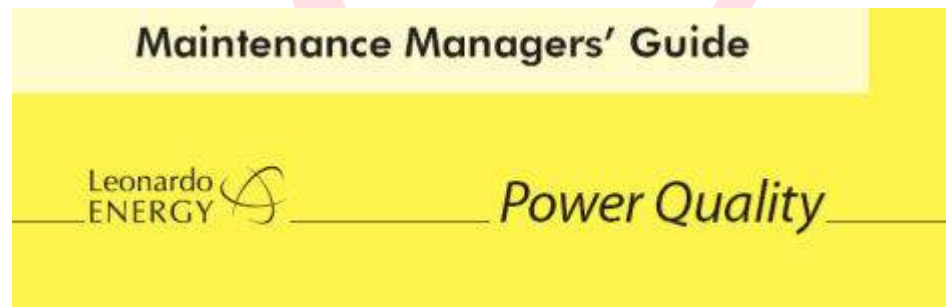
- The metals sector is not fully aware of the extent of its power quality losses.
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变更：维护经理

- 迷你网站的维护经理



http://www.leonardo-energy.org/maintenance_manager

- 发起关于测量和监控技术的一系列在线研讨会



变更：专业人员团体

<https://www.onlineregistrationcenter.com/register.asp?m=211&c=26>

- 电能质量经济团体帮助专业人员：
 - 加入全世界的电能质量成本减少和改进项目
 - 享有关于电能质量成本的最新信息
 - 仅与会员分享的方法论的益处

利用欧洲电能质量调查的经验：调查发现是否与其它地区相关？

- 欧洲电能质量调查发现描述了该地区电能质量不良和电能质量问题的影响状况。
- 调查结果很大程度上取决于工业/服务组合以及文化用途。
- 调查发现不能简单地应用到其它区域。

利用欧洲电能质量调查的经验：可选的两种可能性

- 由一个敬业的项目和合伙人团队对电能质量不良的经济影响进行研究。
- 该团队可以由欧洲电能质量调查专家通过电能质量经济方法（经验转移）来支持。
- 可采用两种方法：
 1. 来自欧洲电能质量调查结果的基准
 2. 试验并完成欧洲电能质量调查问卷/面谈和分析，得出一份完整的广泛报告。
- 我们强烈推荐您采用这两种方法中的一种，以获得全面了解。