

# Services for industrial and public power grid operators

Improving grid reliability, reducing costs and risks, and managing ageing

Operators of industrial and public power grids face increasingly complex challenges. With grids becoming more sophisticated, managing phenomena such as ageing is becoming more complicated. ENGIE Laborelec provides services to improve grid reliability, reducing both costs and risks.

## GRIDS ARE SUBJECT TO AGEING AND RISKS

Operators of industrial and public power grids face increasingly complex challenges. Grid reliability is more critically important than ever. Yet grid components are subject to ageing, leading to the substantial risk of production downtime, damage to installations, financial penalties or loss of data. In addition, the ageing of critical components such as transformers can be accelerated by hidden phenomena such as grid instability and harmonics. The fact that grids are becoming more sophisticated is a further complication for power grid management.

## IMPROVING INDUSTRIAL AND PUBLIC POWER GRID RELIABILITY

ENGIE Laborelec provides a comprehensive range of services to help grid operators improve grid reliability, reduce costs and risks, slow down and manage ageing processes, and strengthen the organization's resilience to component failures. We provide services covering every power grid asset, including HV systems and components, cables, joints and terminals, as well as their susceptibility to ageing in the operational environment. Services include:

- Onsite inspection
- Monitoring programs
- Predictive maintenance and anti-ageing programs
- Impact studies, electromagnetic compatibility testing, and electromagnetic field assessment
- Analysis to identify the root cause of failures

## BENEFITS

### A more reliable grid at a lower cost

Early identification of ageing phenomena, proactive maintenance programs, and impact studies lead to better grid reliability, avoiding costly downtime and other losses. Monitoring, maintenance and anti-ageing programs also allow operators to reduce operational costs.

### Avoid recurring events

Root cause analysis allows operators to identify weaknesses in the power grid and take action to avoid adverse events reoccurring.

## ADDED VALUE

### 50 years of experience

ENGIE Laborelec has more than 50 years of experience with power grids of all sizes.

### Independent advice

We provide independent advice based on certified laboratory and field analysis.



## Independent assessment, monitoring, and maintenance services

### PREDICTIVE MAINTENANCE OF HV SYSTEMS

We perform state-of-the-art analysis and onsite measurement to optimize asset maintenance planning and achieve maximum safety, reliability and performance with an eye to reducing the total cost of ownership.

### POWER QUALITY MONITORING

We set up long-term monitoring programs and conduct specific measurement campaigns to evaluate the power quality in your grid and how it could impact the lifetimes of transformers and other grid components.

### POWER CABLES, JOINTS AND TERMINALS

We provide assistance in all aspects of cable operation. The service includes acceptance testing, condition monitoring, maintenance and troubleshooting. We also inspect LV and MV cables to assess their health and expected remaining lifetime. Based on these findings, we develop a targeted cable ageing management plan, which includes recommended preventive and corrective maintenance aligned with industry best practice.

### SWITCHGEAR

We perform conformity assessments of medium voltage switchgear destined for primary and secondary distribution. We also provide standardisation work and technical support for drafting technical specifications. Finally, we also conduct in house tests and measurements, as well as thermal and overpressure simulations of the behaviour of grids components like switchgear and substations.

### TRANSFORMERS

We support clients to conduct the specification and quotation process, assess possible manufacturers, perform design reviews in quotation and order stage, follow up production, or witness FAT. We also assess

transformer condition (including oil analyses and electrical testing) and perform fleet screenings.

### EMC, EMF AND OTHER IMPACT STUDIES

We provide a broad range of testing services in our BELAC ISO 17025 accredited laboratory to assess the electromagnetic compatibility (EMC) of any equipment. We also conduct electromagnetic field assessments (EMF) to evaluate whether a given work environment complies with applicable legislation. In addition, we carry out studies to evaluate the impact of HV connections on nearby metallic pipelines, and provide solid advice on any precautionary measures to be taken.

### ROOT CAUSE ANALYSIS

We apply a systematic, structured approach to root cause analysis when failure occurs. We preserve, collect and analyze relevant evidence of all kinds, including as-found asset condition, the operational circumstances, process parameters, and human interventions prior to



**Want to know more?**  
Don't hesitate to contact us.

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### Five reasons for you to choose ENGIE Laborelec

- Wide-ranging technical expertise in electricity generation, grids, and end-use
- Customers enjoy enhanced profitability and sustainability of energy processes and assets
- Unique combination of contract research and operational assistance
- Independent advice based on certified laboratory and field analysis worldwide
- More than 50 years of experience