

Network operator in Geneva uses electric van for cable diagnostics

Services Industriels Genève

BAUR References





Customer:
Service Industriels Genève;
responsible for the elect-
ricity, natural gas, water,
fibre optic, and heating/
cooling network of Geneva



BAUR solution:
First diagnostics system in
an e-vehicle resulting in
massive cost reductions
for network operator SIG.

Since the summer of 2021, Services Industriels de Genève (SIG) in Geneva, Switzerland, has been using a BAUR cable test and diagnostics van to better maintain the distribution network. This is a sustainable solution because, not only is the test van an environmentally-friendly electric vehicle, it also helps keep the existing cable routes in operation longer, saving materials and expensive construction work.

Services Industriels de Genève (SIG) is the infrastructure company responsible for the electricity, natural gas, water, fibre optic, and heating/cooling network of Geneva, and also operates the city's waste-to-heat power station and sewage treatment plant. To optimise the cost of the power grid yet be able to operate with the proven low failure rate, since the summer of 2021, the company has been relying on the cable diagnostics conducted with a BAUR cable test van. The vehicle is equipped with modern cable testing and measurement technology, and is the first electric van that BAUR – together with the company's Swiss representative,



BAUR has installed everything required for cable testing, and diagnostics on medium voltage cables, for SIG in an electric van.

Gasenzer Handels AG – has constructed and handed over.

Efficient and reliable

Benjamin Kern, responsible for network planning at SIG, is pleased about the purchased diagnostics system: „Not only has it given our technical service team its first electric vehicle, we now also have the measurement technology to better understand the condition of our distribution network and maintain it more cost-effectively.“ This is because the onboard BAUR diagnostics devices make it possible to determine the ageing condition of the cable routes and invest in replacements based on the condition.

No unnecessary investments or construction work

„Many of our medium-voltage cables are insulated with different materials, and have been repaired multiple times over the decades,“ says Kern. „If we were to replace these cables based on their actual ages, several routes would be due over the coming years. This would involve a large amount of effort and cost, as most medium-voltage cables are buried rather than laid in pipes.“

Cable diagnostics makes the ageing condition transparent

In order to defer investing in replacements without endangering network reliability, it is nevertheless essential to know the actual condition of the cables.

SIG is now able to investigate the status quo of medium-voltage cables using the new test van. It supports both partial discharge measurement and dissipation factor measurement, and the resulting data provides a strong basis for investment decisions.



Vehicle handover in front of the BAUR Headquarter in Sulz, Austria

Around ten additional years of cable service life

Kern: „This knowledge will probably allow us to keep many of the cables in operation for around ten additional years.“ All relevant parties benefit from this, he says: the network operator in the form of lower costs, energy customers thanks to the continued availability and low grid charges, and the general public because less construction work is required in urban areas, or the construction work can be better co-ordinated with others.

Time-saving integration of cable diagnostics into the workflow

SIG measurement engineer Roger Gasser

praises the simple diagnostic measurement procedures that can be quickly incorporated into the workflow, with some processes even running in parallel. „In the first few months we will gather experience and primarily measure the cables, which will in any case be disconnected from the network; but in the medium term, we will follow a diagnostics strategy that will enable us to check the condition of the most important cables on a regular basis,“ he says.



Fast access: Whether cable testing or diagnostic measurement - the connection is done quickly, the workflow is organized in a time-saving way.

ROI after one year

A cable test van is no small purchase, especially when it is based on an electric vehicle. However, the decision-makers

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Benjamin Kern

at Geneva’s network operator Services Industriels de Genève (SIG) are confident that the investment will quickly pay for itself. If – as in Geneva – the majority of medium-voltage cables are buried, replacing a cable can take up to three years from planning to completion. Expensive excavation work, road closures, the relaying of carriageways and pavements – all of this sends costs sky high. If diagnostic measurement allows the cable to be kept in operation for ten additional years, for example, this represents a considerable cost reduction for the network operator. According to the network

experts, the savings potential in Geneva created by cable diagnostics is so high that the purchase of the vehicle will have already paid for itself within a year.



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