

# CASE STUDY



**PROJECT:** Underground substations | Sweden  
**ESTER TYPE:** MIDEL 7131 synthetic ester  
**PURPOSE:** Fire safety improvements to city power network

## [ OVERVIEW ]

Göteborg Energi are responsible for power delivery and distribution to the large Göteborg region of Sweden. This region uses over 50 power transformers (40MVA and larger) and more than 2000 distribution transformers of 630kVA and above.

As part of its operation, Göteborg Energi has a number of underground substations where the main transformers are housed. Each substation typically hosts three transformers, with at least two online at any one time. Fire safety is critical for this type of installation.

As part of a replacement initiative, Göteborg Energi reviewed carefully the specifications of the transformer units that would be destined for the underground locations. One key component was the transformer insulating fluid, and consultations began with the MIDEL technical team.



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## [ SITUATION ]

Göteborg Energi were looking to greatly improve fire safety and reduce environmental impact for their underground substation transformers in the region, and were aware of the success that the utility Vattenfall had experienced using MIDEL in its Swedish operations.

From the outset of the project, the MIDEL technical team was involved to provide advice on the use of MIDEL 7131 synthetic ester fluid. Both the MIDEL technical and commercial teams provided support to the transformer OEM Koncar during the development phase. This included providing support on topics such as correct handling of the fluid, as well as electrical and thermal behaviour. Members of the team visited Koncar on a number of occasions to ensure that the right information was made available in a timely manner.

## [ RESULT ]

The replacement process was successful and once the project was finished a MIDEL representative visited the underground substation where the transformers are installed. This close cooperation between the end user, transformer manufacturer and MIDEL typifies our commitment to collaboration with our customers and sharing our technical expertise.

MIDEL ester fluids present the ideal solution for transformers in subterranean projects – including hydro power stations, underground storage facilities, mines, train tunnels and urban installations. With a high fire point of  $>300^{\circ}\text{C}$  and proven biodegradability, MIDEL transformer fluids are deployed worldwide to help create safer, greener and better performing power networks.

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The use of MIDEL ester fluids in this project supports the following UN Sustainable Development Goals:

