

## Eco-efficient ABB breaker technology ensures reliable power supply in Cape Town

ABB, the leading Power and Automation Group, has partnered with the City of Cape Town to ensure the supply of reliable electricity through the installation of its most eco-efficient disconnecting circuit breakers (DCB) in its product portfolio - the next generation LTA carbon dioxide (CO<sub>2</sub>) live tank high-voltage circuit breaker, rated from 72.5 kilovolts (kV) at the Eversdal substation. This installation is the first for the LTA disconnecting circuit breakers and LTA outside of the Scandinavian region – making the City of Cape Town a trend setter in the use of environmentally friendly carbon dioxide circuit breaker.

Giandomenico Rivetti, head of ABB's High Voltage Products business says the carbon dioxide has been used for some time now as an extinguishing medium in high-voltage equipment with excellent results, "The CO<sub>2</sub> breaker is exactly in line with ABB's goal to help customers with products that reduce environmental impact and increase reliability," says Rivetti. ABB's eco-efficient LTA circuit breaker platform is expected to help reduce the Eversdal station's CO<sub>2</sub> equivalent emissions by 60 percent over the life cycle of the product. The LTA platform was developed using the same technology and similar components as ABB's widely used sulfur hexafluoride (SF<sub>6</sub>) LTB product range, including high conductivity, low resistive- loss copper current paths. The LTA platform also enables simple and adjustment free installation, and is suitable for all environments.

The removal of SF<sub>6</sub> from the LTA platform has been the predominant factor in reducing CO<sub>2</sub> equivalent emissions over the product's life cycle by 18 percent. An LTA CO<sub>2</sub> concept breaker has been performing flawlessly since 2010 as a pilot installation at a 132/45 kV substation in Sweden. ABB breakers will be used to extend two extra feeder bays and replace existing equipment that will increase the reliability of the power supply to the city. ABB's LTA units use CO<sub>2</sub> instead of the usual sulfur hexafluoride (SF<sub>6</sub>) gas as an insulating and arc extinguishing medium, because SF<sub>6</sub> gas has much higher global warming potential than CO<sub>2</sub>. Each new 72.5 kV LTA breaker has technology based on the same principles and components as its SF<sub>6</sub> based predecessor, but with the capacity to significantly reduce CO<sub>2</sub> equivalent emissions over its product life cycle.

Designed to be used as a conventional circuit breaker as well as a disconnecting circuit breaker, the LTA platform is particularly useful in areas where reducing environmental impact is a high priority. By replacing SF<sub>6</sub> gas with CO<sub>2</sub>, the impact of any SF<sub>6</sub> gas leakage during the filling phase and end of life is avoided. The unit combines high reliability with an optimized, low energy self-blast CO<sub>2</sub> interrupter and mechanical spring drive, requiring extremely low operating energy and therefore lower operating forces within the breaker.

Head of Engineering in the City of Cape Town, Edgar Capes, says ABB technology was selected based on the City's objectives of reducing the environmental impact of its operations and the new CO<sub>2</sub> technology was selected to determine the long term suitability.

The refurbished station services residential areas such as Eversdal, Durbanville, Vredeloof and Kraaifontein within the city. Mike de Swardt, ABB's Regional Manager for the Western Cape and HV Technical Manager says, "lowering the impact on the environment and providing sustainable solutions are priorities for ABB and this project posed the ideal opportunity to provide such a

# Press Release



solution. ABB is particularly proud to be able to partner with the City of Cape Town and deliver on their innovative and forward thinking approach with the environment in mind.”

## **Breakthrough order**

Cape Town's 66 kV electrical distribution network is upgraded with both the regular live tank circuit breaker (LTB) and the DCB versions. ABB breakers will be used to extend two extra feeder bays and replace existing equipment that will increase the reliability of the power supply to the city. At the Eversdal substation, the LTA DCB and current transformers will be positioned on the same structural frame and replace the busbar disconnectors, thereby freeing up the necessary space to allow for the two additional feeders bays within the same footprint within the existing substation. This will also increase the substation's reliability and availability as the DCB has an integrated disconnecter.

Cape Town says the ABB DCB's will increase network flexibility enabling the City to improve the quality of supply, while the additional bays will enable the City to meet future load growth in the area.

**END**

**For more information please contact:**

**Media Contact:**

**Natasha Mpela**

Senior Communications Manager

Phone: 010 202 6156

[Natasha.mpela@za.abb.com](mailto:Natasha.mpela@za.abb.com)