

STATCOM is a superior solution in grids with high renewable share

From Siemens Energy's point of view the STATCOM technology is superior to the SVC technology. Especially in grids with high share of renewables and low amount of rotating masses, STATCOM technology with grid forming functionality is necessary to be future ready. Further benefits of STATCOM are the superior performance in terms of complex harmonic filter designs to guarantee the required harmonic performance, also in the future without hardware-filter-bank-adaptions.

In terms of operation and maintenance (O&M), thyristors & IGBTs have a comparable maintenance effort but the effort to maintain the filters for SVC is not applicable for STATCOM technology. Due to the necessity of complex harmonic filter banks, the overall maintenance efforts for SVC technology is higher compared to STATCOM technology.

The availability values collected in the technical brochure AG B4-04 for SVCs and STATCOMs from 2002 to 2018 clearly indicate a higher availability for STATCOM technology over the SVC technology. The experience from Siemens Energy confirms this tendency.

The above-mentioned arguments are also valid for refurbishments of SVCs. Existing SVC installations with a given secondary voltage can be re-designed with a STATCOM based on multilevel VSC technology by replacing the medium voltage part and keeping the step-up transformer and high voltage part. This will ensure robust, stable and future-prove operation of the system.