

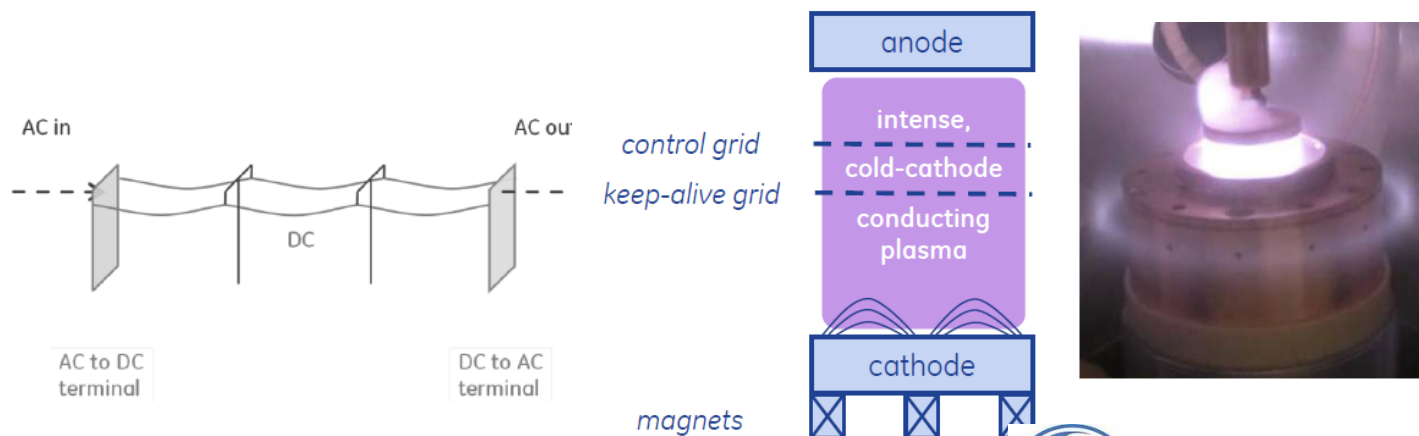
Helping General Electric Upgrade the U.S. Power Grid

PPPL lends GE a hand in developing an advanced power-conversion.

General Electric Co. sought help at PPPL (Igor Kaganovich, Alex Khrabrov, Johan Carlsson) in designing a plasma-based power switch.

The advanced switch would consist of a plasma-filled tube that turns current on and off in systems that convert the direct current (DC) coming from long-distance power lines to the alternating current (AC) that lights homes and businesses; such systems convert AC to DC power as well. The tube would become a compact, less costly alternative to the bulky assemblies of semiconductor switches now installed in power-conversion systems throughout the U.S. electric grid.

Thanks to PPPL modeling, GE researchers identified a new contracted mode of operation of the switch.



Laboratory test of a liquid-metal cathode.
(Photo courtesy of General Electric)



GE imagination at work

