

# ***GIC experience in Norway, risk assessment and mitigation in view of existing and future transmission system***

**Trond M. Ohnstad,**

*Section Manager R&D, Projects Division, Statnett, Norway*

## **Abstract:**

The Norwegian power grid covers the country from far north to far south and from west to east. The transmission system voltage levels are 420kV, 300kV and 132kV. Registration of geomagnetic induced currents (GIC) in some transformer neutrals confirms that the system is influenced by solar storms and space weather. So far the GIC has not caused any serious problems to the power system, no power outages have been caused by GIC. But the question, what will happen to the Norwegian power system if an extreme coronal mass ejection (CME) should hit the earth?, is not fully answered.

And will further development and expansion of the power grid make the situation better or worse? What kind of precautions or mitigation will be needed?