

Innovation and Ingenuity

Building New Zealand's Approach to Space Weather Risk

Context

New Zealand's unique geography and geology expose us to a wide range of natural hazards, including earthquakes, tsunamis, and volcanic eruptions — each with the potential for catastrophic impacts.

Until recently, space weather had a relatively low-profile within our extensive hazardscape. While it is not a new consideration, the Gannon Storm in May 2024 served as a powerful catalyst for Government to rethink the NZ Inc approach and ask the question, are we really ready?

Approach

Building on the strong foundation set by the Solar Tsunamis Research Programme, local industry sector partners, and international partners, the New Zealand Government united to rapidly improve our readiness.

The National Emergency Management agency (NEMA) established our Space Weather Programme, the Ministry of Business Innovation and employment (MBIE) worked with infrastructure providers to raise awareness, and the Department of the Prime Minister and Cabinet (DPMC) convened key stakeholders to assess potential implications and identify opportunities to build resilience to space weather.

Next Steps

While our approach is still in its formative stages, the nation's commitment to improving our integrated approach to emergency management provides us with opportunities for growth.

NEMA will prioritise the operationalisation of our Science Advisory Panel and Subgroup, including the potential inclusion of international members.

NEMA will also run Exercise Tahu-nui-a-Rangi with All-of-Government to raise awareness of the risk and improve our readiness.

NEMA's key initiatives since May 2024



Partner Initiatives

2000s

Grid protection measures (Transpower)

2016

Identified as a National Risk (DPMC)

2020

Investment in Research: Solar Tsunamis (MBIE)

2023

Electricity Industry Working Group formed

National Geomag. Induced Current (GIC) Management Plan (Transpower, Solar Tsunamis)

2024

GIC Plan implemented (Transpower)

National Risk Assessment (DPMC)

Telco Risk Assessment (Telco Forum)

Magnetometer data available in real-time (Earth Sciences NZ)

Regional planning (Civil Defence Groups)

Electricity Industry Working Group's tabletop exercise

2025

Aviation Tabletop Exercise (Civil Aviation Authority)

Emergency Services Planning (St John, Wellington Free, NZ Police)

Presentation at Parliament (Solar Tsunamis)

Collaborative presentation at national lifelines conference (MBIE, NEMA, Solar Tsunamis, Transpower)



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