

# PROJECT DATA

## Detailed Network Simulation Using PSCAD

### CLIENT

**Hydro Tasmania / TRANSEND  
NETWORKS**

### PROJECT LOCATION

**Tasmania, Australia**

### DATE OF PROJECT

**Early 2005**

### SERVICES PROVIDED

- Development of full three phase model of Tasmanian Power System
- Simulation of contingency events such as Basslink commutation failure, transmission line faults, load and generation tripping
- analysis and assessment of results

Generally we use PSS/e to simulate the power system. The ETRAN utility allows us to convert the PSS/e single phase model to a full three phase PSCAD representation of the power system. This then allows a full network simulation with fewer approximations than have traditionally needed to be made for PSCAD models.

The work was used to confirm the results of the factory testing of the Basslink controls that was performed in the Siemens factory using simplified network representations. The short time frames associated with HVDC necessitates the complexity of using PSCAD for this analysis.

Once the model is developed it can be used to

- assess the performance of transmission lines in terms of phase imbalance;
- determine propagation of voltage spikes caused by switching events;
- model system restart conditions



Head Office  
4 Elizabeth Street  
Hobart, Tasmania 7000  
GPO Box 355, Hobart  
Tasmania 7001, Australia  
PHONE 1300 360 441  
FAX +61 3 6230 5460  
EMAIL  
consulting@hydro.com.au  
Hydro Tasmania is a business  
of the Hydro-Electric Corporation  
[www.hydrotasmaniiconsulting.com.au](http://www.hydrotasmaniiconsulting.com.au)