

Grid development investigation for Waikato and Upper North Island voltage management

26 October 2017

Background

The Security and Reliability Council (SRC) functions under the Electricity Industry Act 2010 (Act) include providing advice to the Electricity Authority (Authority) on reliability of supply matters.

In late 2015, the Otahuhu and Southdown thermal generators in Auckland were decommissioned. This prompted Transpower to initiate investigation of a grid development project to respond to voltage management needs in the Waikato and upper North Island areas of the grid. At its 21 June 2016 meeting, the SRC asked to be kept informed of this project's progress. Transpower has previously presented to the SRC about the project on:

- 15 March 2016
- 21 June 2016
- 28 March 2017.¹

A Transpower representative will attend the 6 November 2017 meeting and present a brief update on the project and answer the SRC's questions. The presentation slides are included as an appendix to this paper.

The SRC may wish to consider the following questions.

- | | |
|------------|--|
| Q1. | What further information, if any, does the SRC wish to have provided to it by the secretariat? |
| Q2. | Should action item #4 be marked as complete? |
| Q3. | What advice, if any, does the SRC wish to provide to the Authority? |

¹ All SRC meeting papers are available from <http://www.ea.govt.nz/development/advisory-technical-groups/src/meeting-papers/>

WUNIVM INVESTIGATION

ELECTRICITY AUTHORITY UPDATE

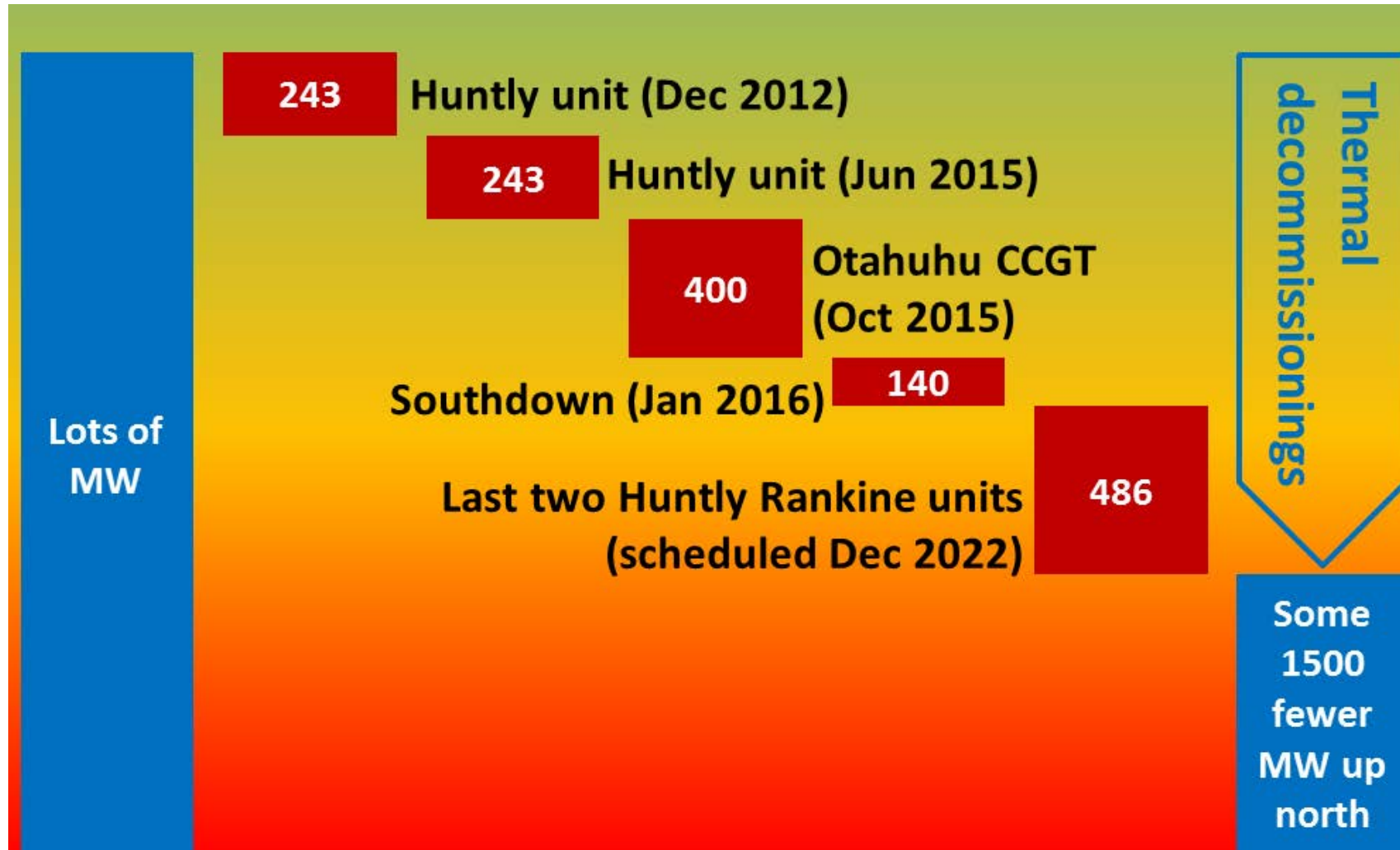
NOVEMBER 2017

TRANSPower

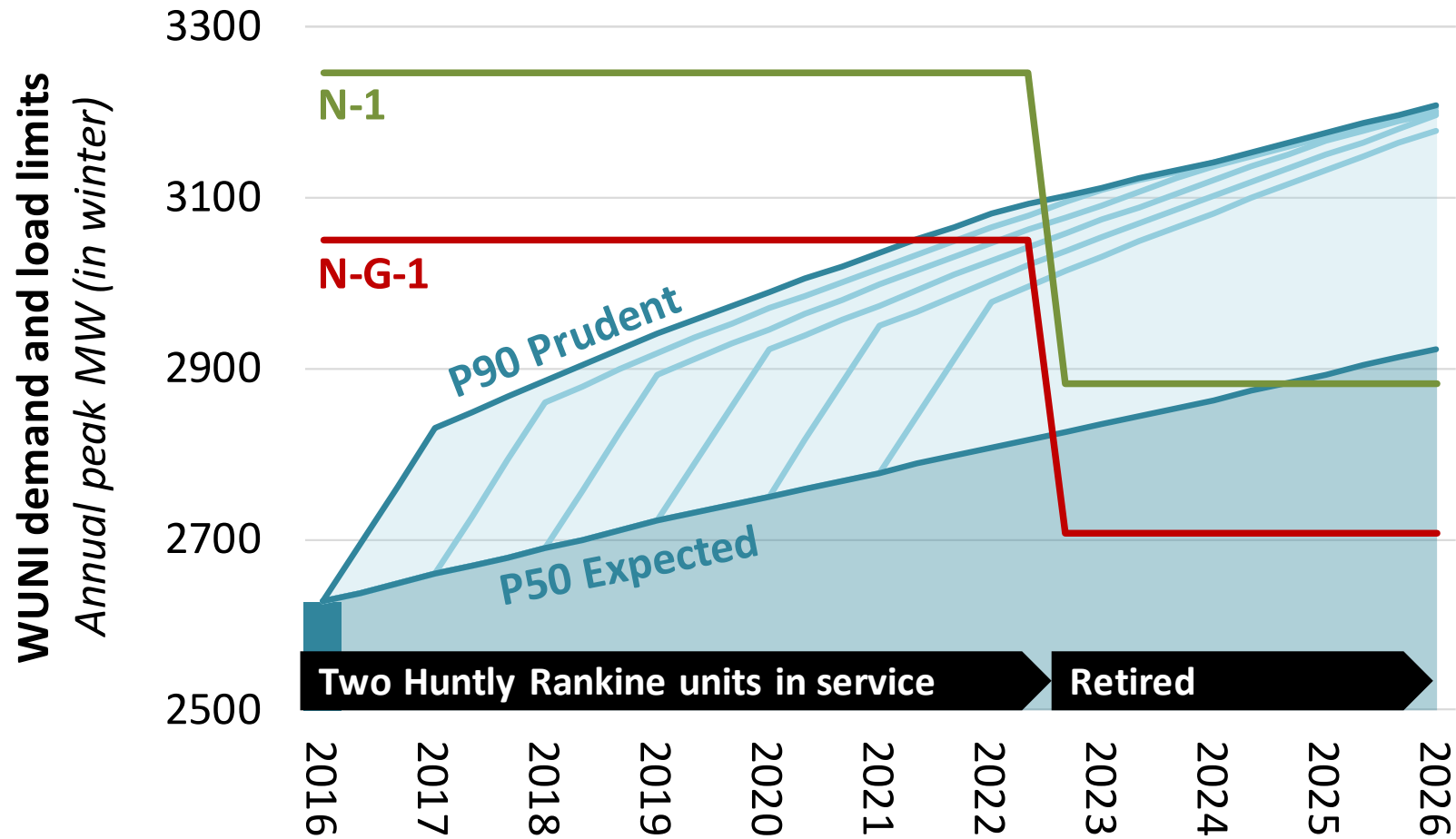


We're for New Zealand. Tū mai Aotearoa.

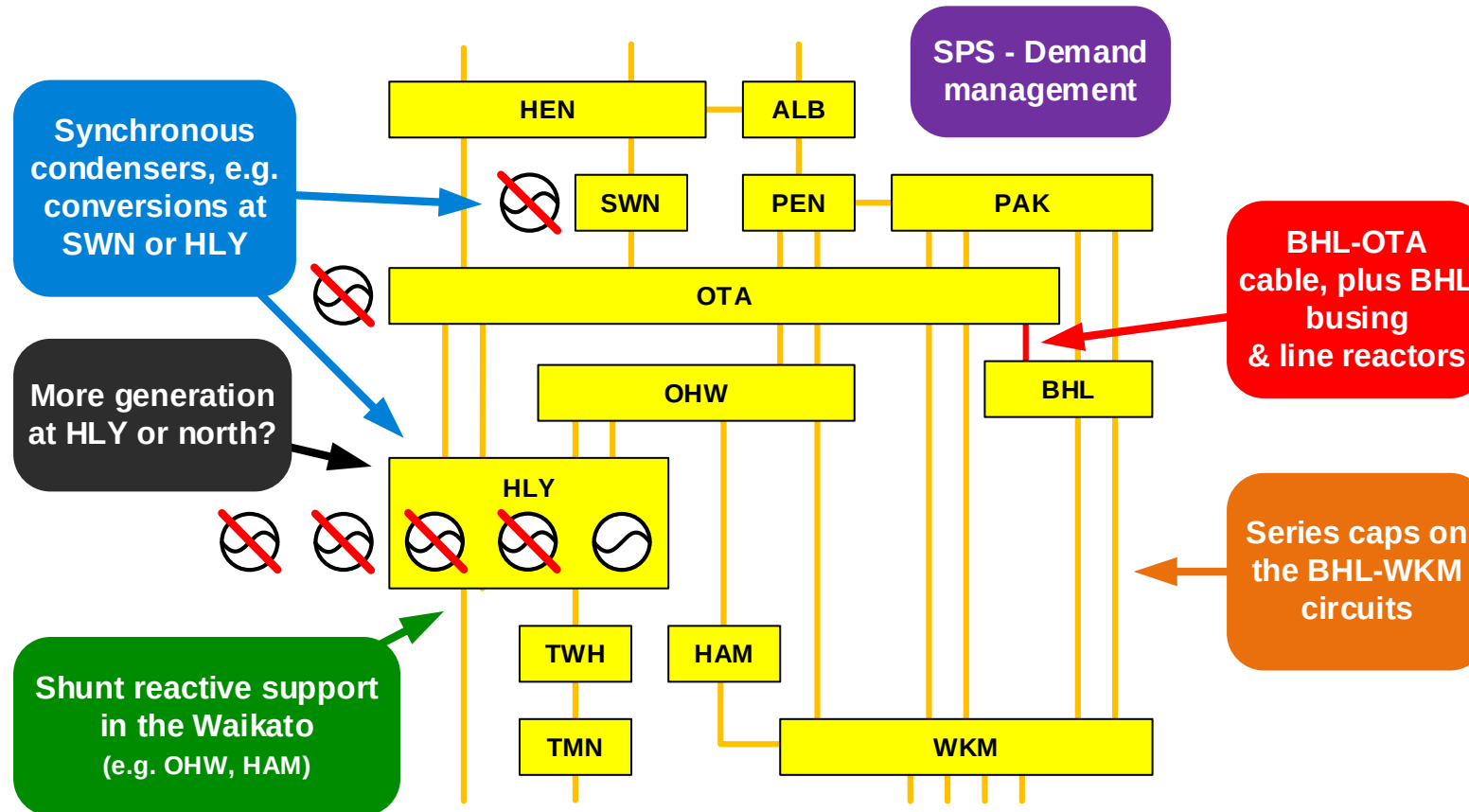
Thermal decommissioning waterfall



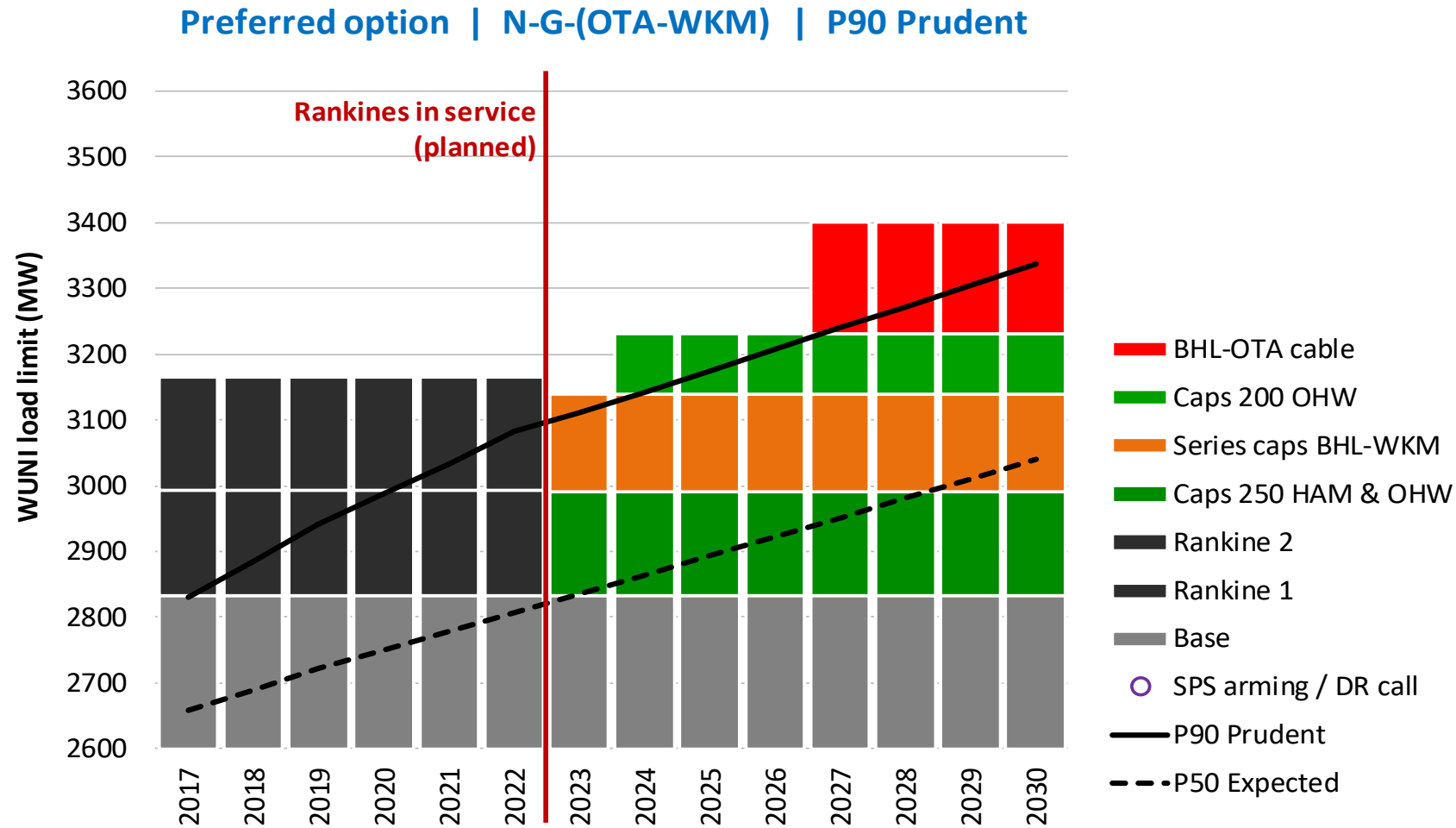
The need



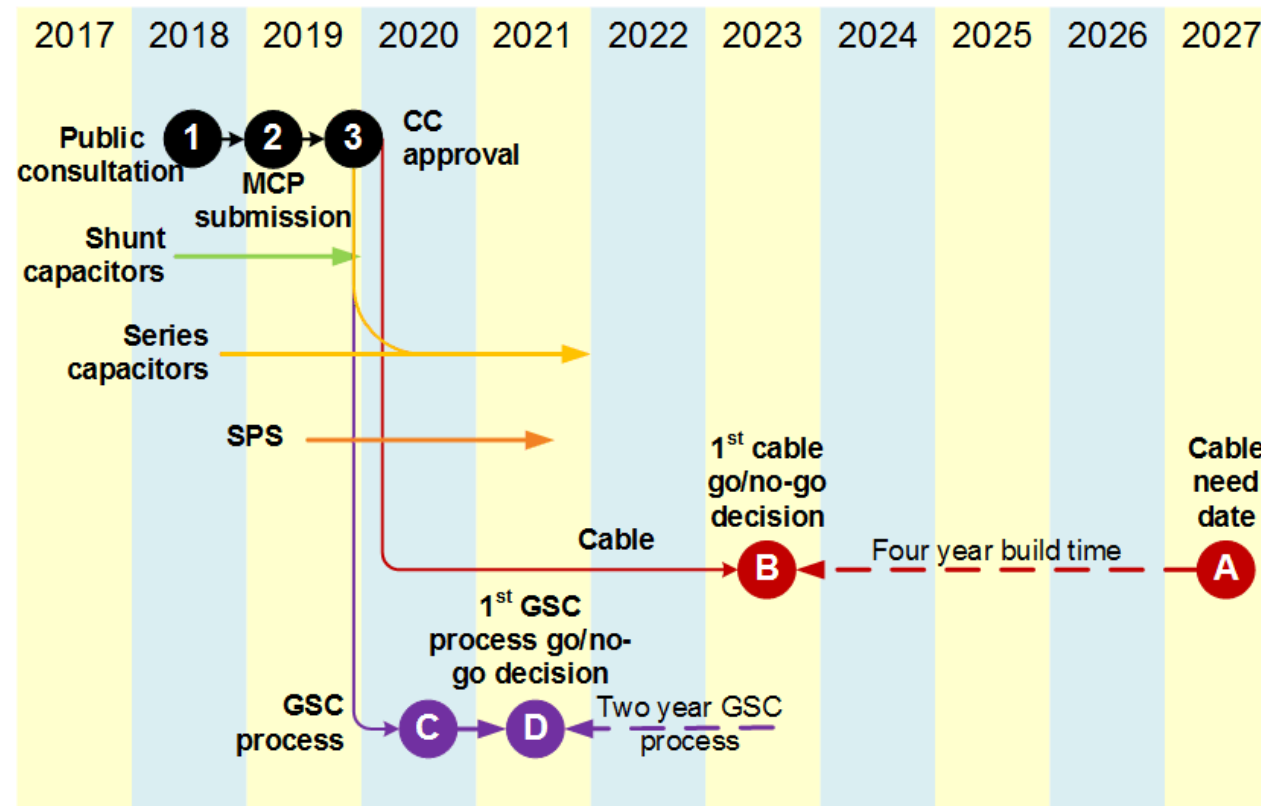
Possible components



Variable series capacitors – cable deferral



Cable deferral GSC framework



- A** Need date for cable assuming current P90, no market generation commitments, and no reliable and economic non-transmission solutions (NTSs) procured
- B** First cable go/no-go decision based on then prevailing view of need date 'A', to identify cable deferral GSCs for NTSs
- C** Possible NTS procurement process in case of early Rankine exit or late commissioning of reactive plant.
- D** First NTS cable-deferral procurement process go/no-go decision to defer cable.



We're for New Zealand.
Tū mai Aotearoa.