

Remaining elements of real-time pricing consultation 2019: Supporting technical materials

- 1.1 We have provided the following supporting materials to help interested parties understand the technical details of our proposed risk-violation curve. See section 4 of the consultation paper, available on our website at <https://www.ea.govt.nz/dmsdocument/24930-consultation-paper-remaining-elements-of-rtp>.
- 1.2 All results use the set of 75 historical dispatched RTD cases with reserve prices at least \$3000/MW/h (reflecting scarcity and near-scarcity conditions), over the period 2015–2017 (as noted on p. 40).
- 1.3 We stress these modelling and simulation results are useful to explore how the risk-violation curve behaves, relative to the current reserve deficit model. RTD cases and input offers are taken from current market conditions. **Results should not be taken as projected or expected outcomes under RTP.**

Table 1: Supporting technical materials

File	Purpose
R plots/*.html	Three standalone files produced in R charting the modelling results in the higher and lower price scenarios, with varying initial tranche MW quantity (10–50 MW, 10 MW steps). <ul style="list-style-type: none"> total_violation_plot.html: aggregate energy (load shedding) and reserve risk violation (reserve shortfall) across the dispatched RTDs violation_count_plot.html: count of instances of energy and reserve violation violation_scatter.html: scatter plot of the distribution of energy and reserve violation
Sensitivity_results_with_charts.xlsx	Full vSPD modelling output of the risk violation curves. A number of charts illustrating these results (used in the paper) are also included.
modelling reserve scarcity + SPD model formulation changes.pdf	Presentation discussing the technical co-optimisation details of the problem and proposed solution. Includes the current and proposed SPD model formulation.
simplified model results comparing reserve deficit vs risk-violation model.pdf	Set of illustrative worked examples using a simplified Excel model showing the effects of multiple risk-setters in the current reserve deficit vs. risk-violation models.