

Network Capability Incentive Parameter Action Plan (2014-2019)

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| Project Number | 26 |
| Project Priority | 4 |
| Transmission Circuit / Injection Point | Knights Road Substation |
| Project | Dynamic rating of Knights Road Substation supply transformers |
| Scope of works | Purchase and install DRMCC units on Knights Road 110/11 kV supply transformers T1 and T2 and implement dynamic rating functionality. |
| Reasons to undertake the project | The load at Knights Road Substation exceeds the firm rating of transformers T1 & T2 which is 20MVA. Implementation of dynamic rating for these transformers will result in these transformers being able to supply in excess of their name plate rating in the event of loss of any one of their associated parallel unit. Taking into account the dynamic rating and ability to monitor temperature increase and life degradation of the transformers will enable the load at Knights Road to be supplied in excess of transformer name plate rating. |
| Current value of the limit | The transformers T1 and T2 have a current firm name plate limit of 20MVA. |
| Target limit | Availability of dynamic ratings from the transformers T1 and T2 at Knights Road Substation. Application of dynamic ratings to the transformers listed above, in real time operation. |
| Priority project improvement target | Defer need to expend substantial capital to augment transformers for several years until station load exceeds dynamic rating. Ratings of transformers are made using weighted ambient of 20degC. Possibility of using DRMCC at sites such as Knights Road, where load is over firm name plate rating, and utilise actual winter peak ambient (about 10DegC) which would increase load rating of transformers. |
| Completion date | June 2015 |
| Capital cost | \$150,000 |
| Operating cost | \$16,000 |
| Market Benefit | Full utilisation of transformer capacity and capability taking into account environmental and service conditions. The annualised market benefit is estimated at \$456,077. |