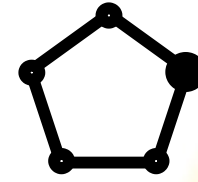


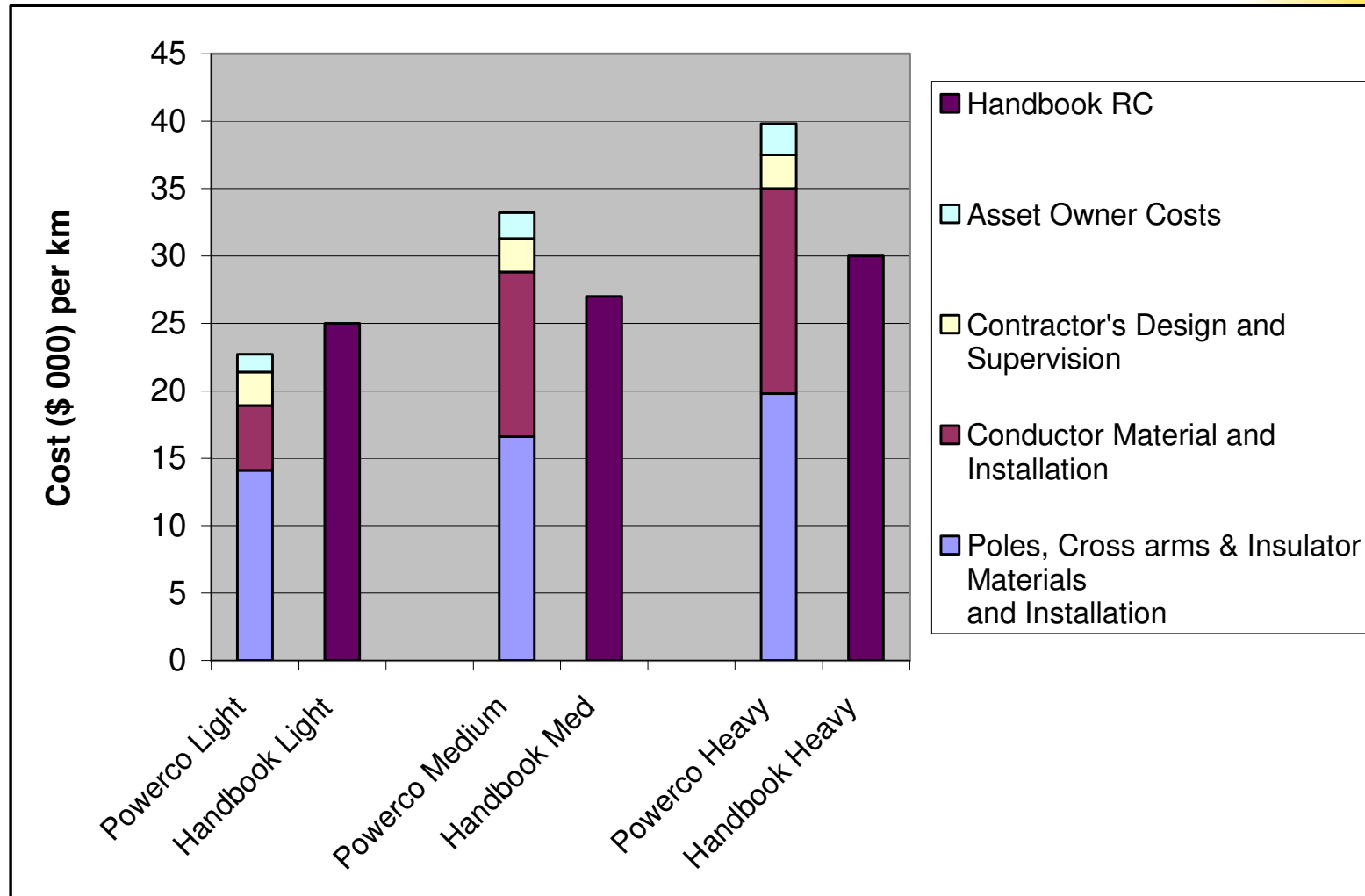
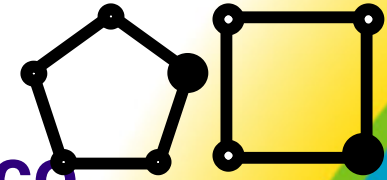
POWERCO

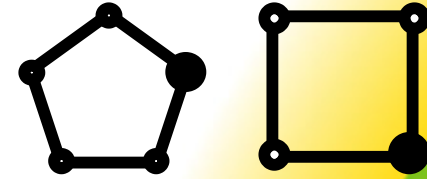
Case Study 1 - 11kV Line





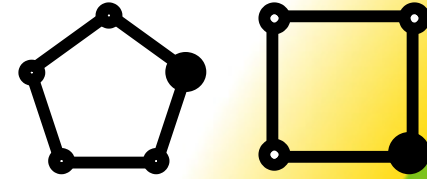
11kV Line Replacement Costs - Powerco vs Handbook





Distribution Line Costs

- Range of costs across different line sizes is larger than those in draft Handbook
- The wider range in replacement costs between line sizes is caused by changes to both pole and conductor costs
- Replacement costs for underbuilt line and double circuit line should be larger than those given in the draft Handbook.



Rugged terrain and remote areas

- To cater for rural situations, the draft Handbook allows a multiplying factor of 1.3 to 1.55 to be applied to the replacement costs of lines located in remote areas with rugged terrain.
- Powerco's submission shows that this multiplier is too low and should be 1.6



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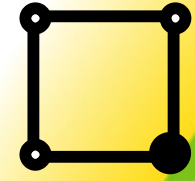
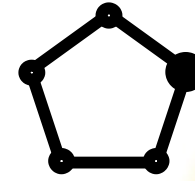


Case Study 2 - Low Voltage Line Costs

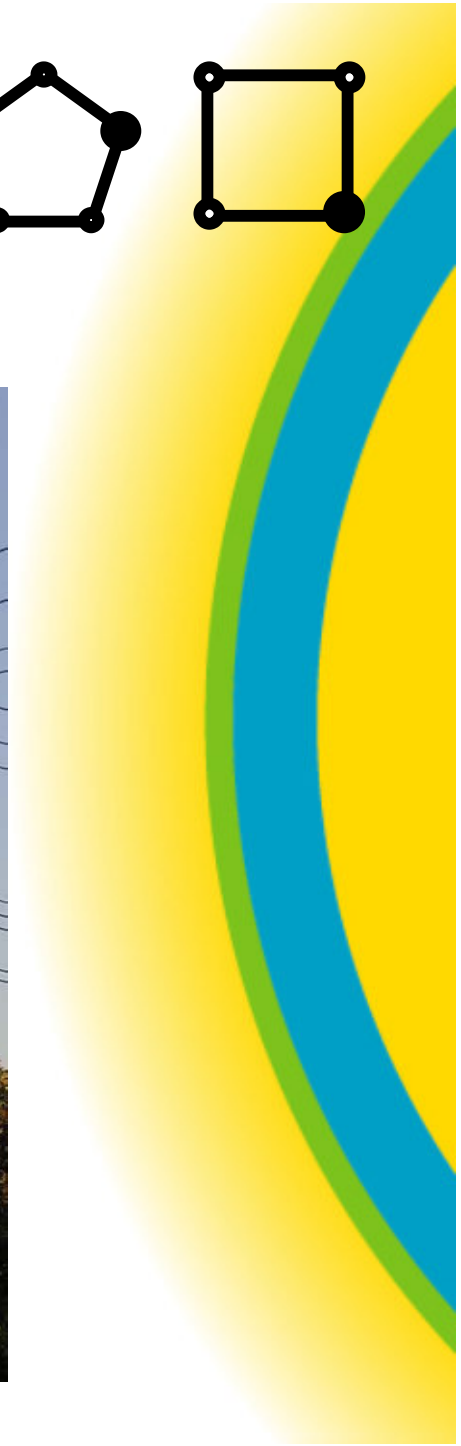
- Draft Handbook defines LV heavy line as >150 mm conductor
- Powerco's submission used smaller conductors but the replacement costs were still higher than those for Handbook's heavy line

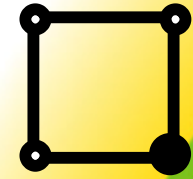
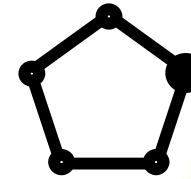


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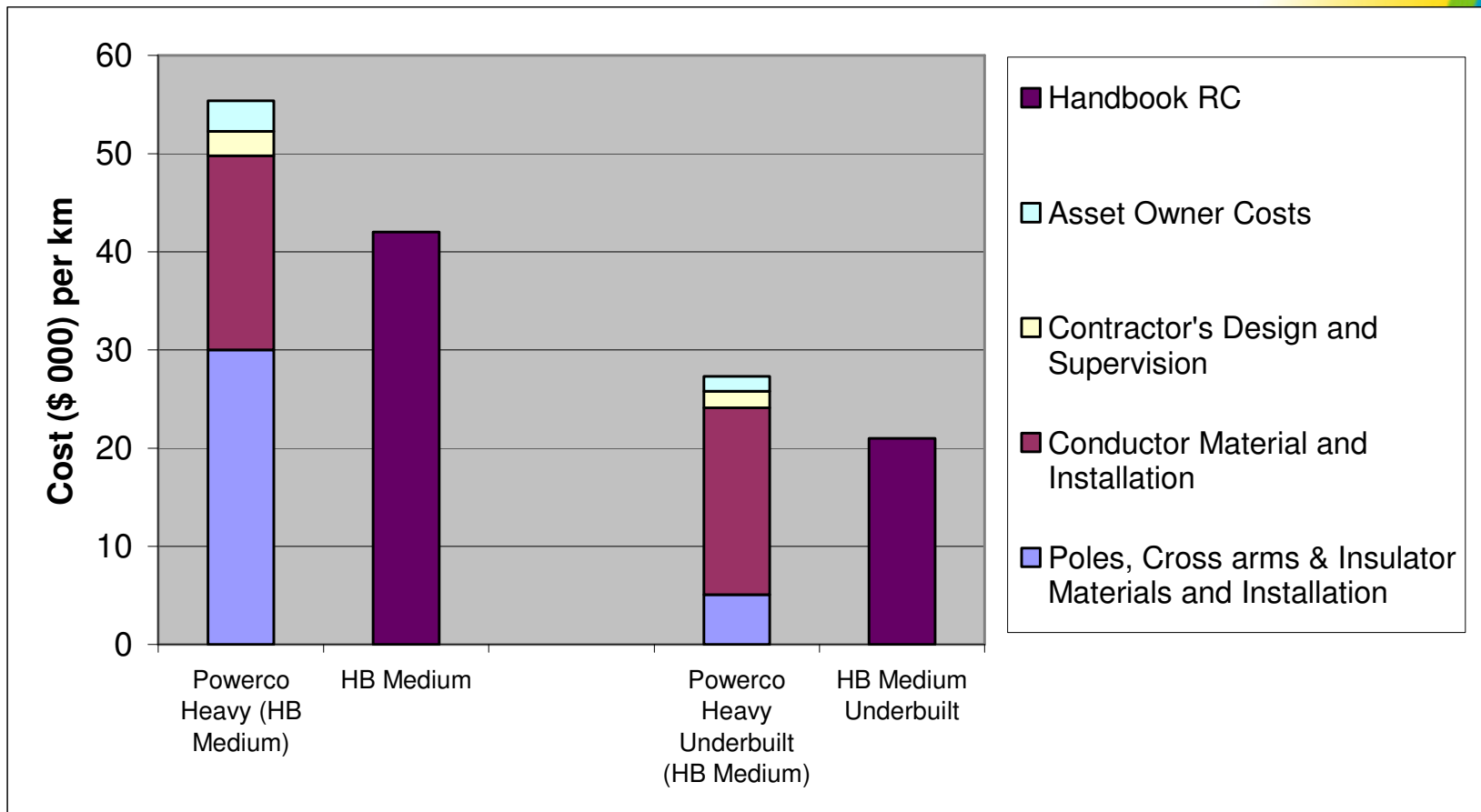


Low Voltage Underbuilt Line





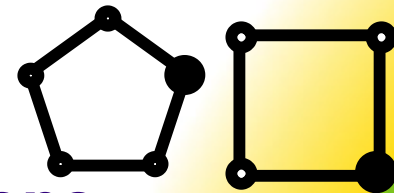
LV Replacement Costs



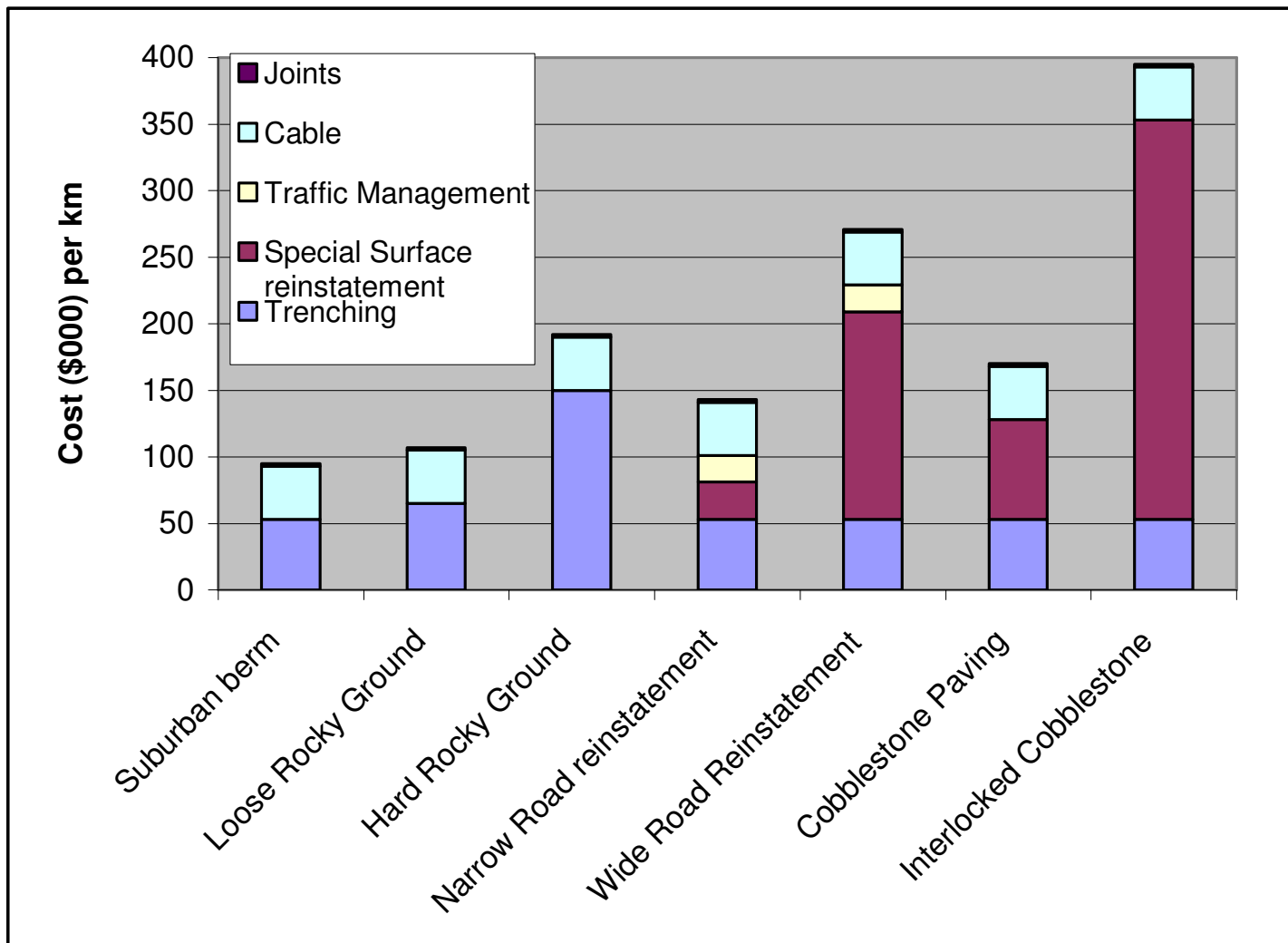


Case Study 3 - Cable Replacement Cost Multipliers

- There are varying needs for cable trench reinstatement to road reserve
- Local authorities often require removal of backfill while trenching proceeds
- Where cable is laid under road or footpath surfaces, cost of surface reinstatement is significant
- Replacement cost can be between 1.3 and 3.5 times the normal cost.
- Traffic (vehicle and pedestrian) control and soil removal can add 30% to cable replacement costs



Cable Repl Costs - different laying conditions





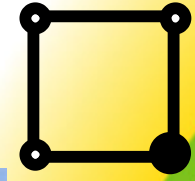
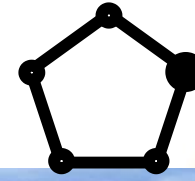
Subdivision vs. Undergrounding projects

- Handbook Replacement Costs for LV cable are based on costs for suburban subdivisions
- Subdivision projects are not “brownfields” and do not reflect deprivation type construction conditions for most of the network
- Overhead / Underground conversion projects more accurately represent LV cable deprivation values

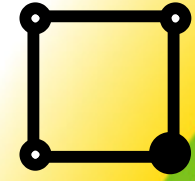
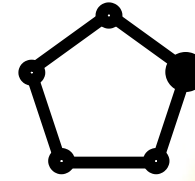


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**Case Study 4 -
LV Cable
Greenfields
Subdivision vs
Brownfields
Undergrounding**



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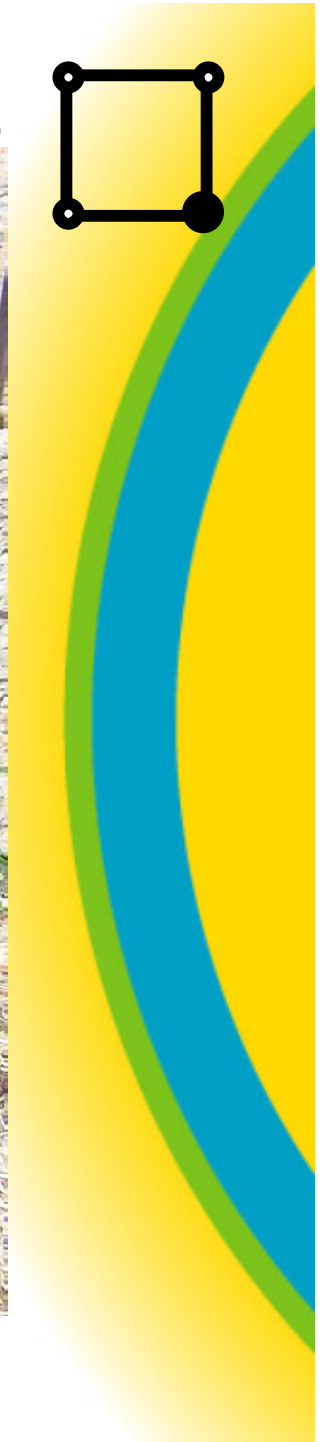
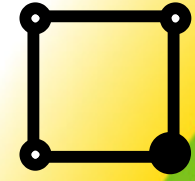
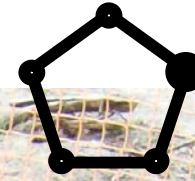


Greenfields Subdivision Trench



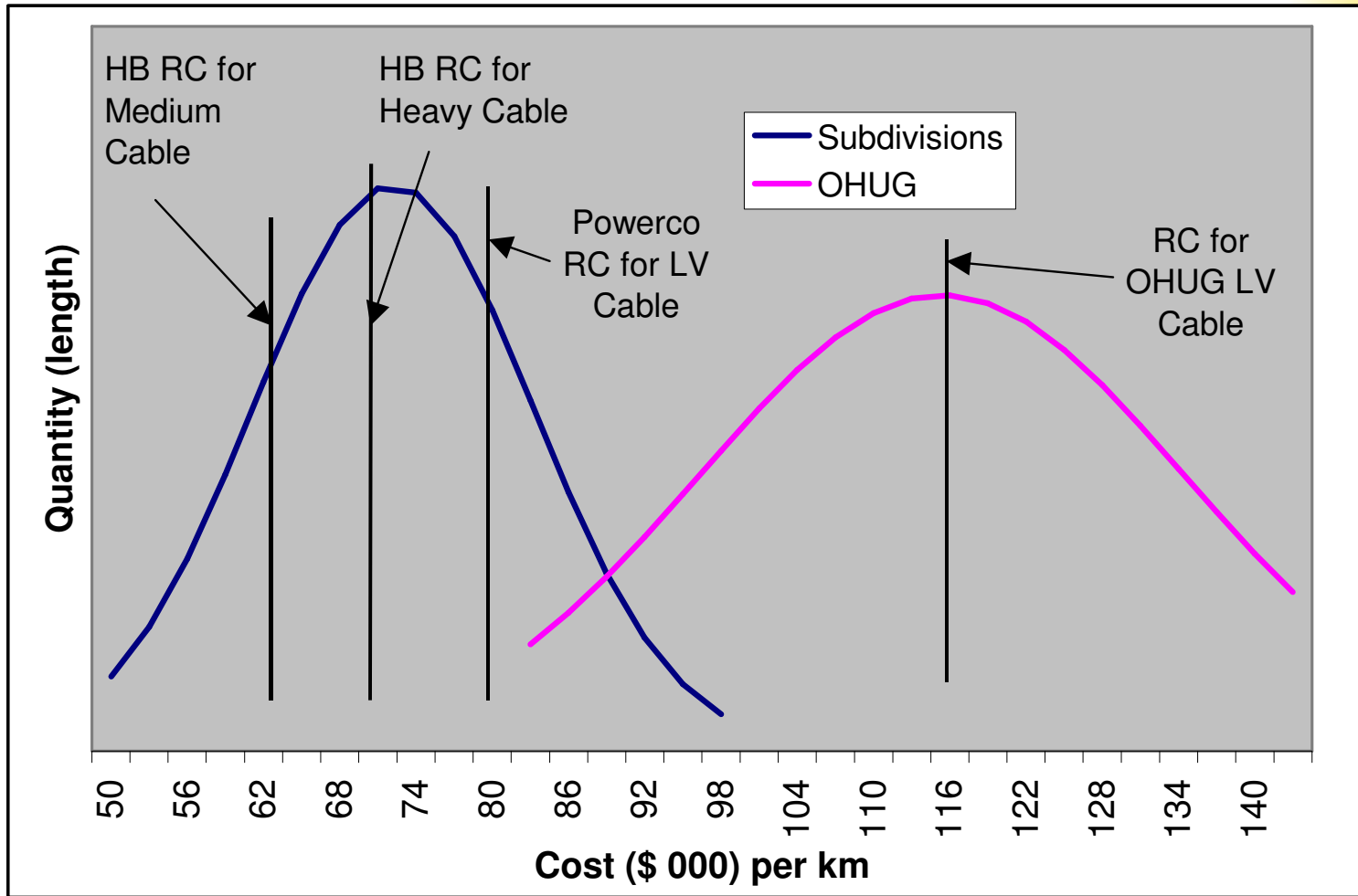
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Brownfields Trench





Subdivision vs OHUG Replacement Costs



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Case Study 5 - LV Service Connections

