9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Ecology

The terrestrial ecological conditions along the proposed powerline alignment have been established based on field surveys. The main areas of ecological interest are the natural secondary forests and *feng-shui* woods at Ho Chung, Pak Kong and west of Pik Uk, with high floristic and structural diversity, as well as rare or protected plant species. Potential impact due to landtake as well as increased human activities would significantly affect the integrity of these forest habitats. An alternative alignment to avoid these habitats has been recommended and adopted by CLP Power. Good construction practice is proposed to minimise disturbance to Ho Chung Stream during the underground cable construction as well as other terrestrial ecological resources. The potential impact on terrestrial habitats would be limited, given the low ecological importance and small areas affected. With the implementation of the recommendations, the residual impact is not considered to be significant.

9.2 Hazard to Health

Although there is no conclusive scientific evidence of adverse health effects arising from long term exposure to the electric and magnetic fields generated from high voltage current carrying conductors including overhead transmission lines and underground cables, the subject has still been addressed in this report in accordance with the requirements of the Study Brief.

Measurements and calculations of EMFs for the proposed overhead lines and underground cables demonstrated that the predicted values will be well under the stipulated guideline limits (below 2/5 of guideline limits) issued by the ICNIRP. As such, the existence of EMF associated with the proposed project is not anticipated to pose any adverse impacts on public health. However, field measurements will be carried out to verify compliance with ICNIRP guideline levels upon commissioning of the circuit.

9.3 Landscape and Visual Factor

The proposed powerline would pass through many areas of high landscape amenity, including the well-wooded northern slopes of Hebe Hill, the Ho Chung Valley and the eastern slopes of Buffalo Hill. The landscape character within these areas is diverse and many areas are designated as either Green Belt, Conservation Area or Country Park on account of their high landscape value. Many of the forest and woodland areas that would be affected by the proposed development contain a great diversity of trees and shrubs, including species that are categorised as being either rare or protected.

9.3.1 Impacts on landscape resources and landscape character

Moderate to low impacts on landscape resources of high significance are predicted at construction stage for the section of alignment between Poles A14a to A24, Poles A25a to A27a and Poles A55a to A56a as well as the section of proposed underground powerline

between Pole A56a and the Pak Kong Road. Low impacts on landscape resources are predicted at construction stage for the remaining sections of the alignment.

Impacts on landscape resources of low to moderate significance are predicted at operational stage for the section of alignment between Poles A14a to A24, Poles A25a to A27a and Poles A55a to A56a as well as the section of proposed underground powerline between Pole A56a and the Pak Kong Road. Negligible impacts on landscape resources are predicted at operational stage for the remaining sections of the alignment.

Moderate impacts are predicted at construction stage on the character of the Hilly Terrain LCA (to the south of the Ho Chung Valley). Moderate to low impacts are predicted at construction stage on the character of Ho Chung Valley LCA and the Hilly Terrain LCA (to the north of the Ho Chung Valley). Low impacts are predicted at construction stage on the character of the Urban Fringe Valley LCA and the Hebe Haven Coastal Plain LCA.

Moderate to low impacts would remain on the landscape character of many areas at operational stage including the northern slopes of Hebe Hill, the eastern slopes of Buffalo Hill and the western edge of the Hebe Haven Coastal Plain. Low to negligible impacts would remain on the landscape character of the remaining areas at operational stage, including the Tseung Kwan O urban area, the area of urban fringe within the Sam Long River Valley, the central portion of the Ho Chung Valley and the Sai Kung urban area.

9.3.2 Visual Impacts

Moderate or moderate to low visual impacts are predicted at construction stage on the residents of Ta Ku Ling, Pik Uk and Pak Kong villages, the users of the open space area located between Pak Shek Wo village and Pik Uk Au, users of the footpaths on both Hebe Hill and Buffalo Hill, part of which lies within the Ma On Shan Country Park.

Moderate to low or low visual impacts are predicted at construction stage on the residents of the Po Lam and Tsui Lam housing estates, the Tseng Lan Shue residential development, residents of the Sam Long River Valley, Nam Pin Wai and Pei Tau villages and Ho Chung village.

Low visual impacts are predicted at construction stage on the residents of distant villages within the Ho Chung Valley.

Low or negligible visual impacts are predicted at construction stage on workers within light industries either within the Ho Chung Valley or within the Hebe Haven Coastal Plain.

Moderate to low visual impacts are predicted at operational stage on the residents of Ta Ku Ling and Pik Uk villages.

Low visual impacts are predicted at operational stage on walkers who would use the footpaths across the Ma On Shan Country Park and the footpaths on Hebe Hill.
Low or low to negligible visual impacts are predicted at operational stage on the residents of the Po Lam and Tsui Lam housing estates, the Sam Long River Valley, Tseng Lan Shue

residential development, Nam Pin Wai and Pei Tau villages, Ho Chung village, Pak Kong village and the residents of distant villages within the Ho Chung Valley.

Low to negligible visual impacts are predicted at operational stage on users of the local road networks as well as on workers in light industries in the Ho Chung Valley.

9.3.3 Prediction of Impact Significance

Landscape impacts identified include loss of woodland along the alignment of the conductors, a reduction in the variety of species and fragmentation of woodland by disturbance and clearance for pathways. Visual impacts include the presence of new powerline structures in the landscape and views of gaps in the woodland cover along some sections of the route alignment. This however, must be considered in the context of the associated removal of two sets of 33kV powerlines from the Ma On Shan Country Park. The removal of these 33kV powerlines would result in a net reduction of approximately 4.9km of power line corridor within the Country Park, thus providing a landscape amenity gain from the project. Reference has been made to criteria for evaluation of landscape and visual impacts laid out in Annex 10 of the Technical Memorandum. These criteria dictate that the potential landscape and visual impacts be classified as "*acceptable with mitigation measures"* as the adverse effects of the proposed development can be reduced to a large extent by the specific measures identified above.

9.3.4 Residual Impacts

With the implementation of the landscape, ecological and visual impact mitigation measures, the residual landscape and visual impact due to the disruption to the ecological habitats is considered to be acceptable with mitigation measures.

9.4 Water Quality

The existing water quality in Ho Chung River has improved in recent years. However, potential water quality impacts can be caused by the construction works of the Project. These could involve disturbance to natural processes and flow slow down, resuspension of sediment, alteration of supply of organic wastes and nutrients downstream; construction runoff and drainage, debris and rubbish, liquid spillages and sewage effluents. However, it is anticipated that disturbances to water bodies will be temporary and localised during construction.

Minimisation of water deterioration can be achieved through carrying out cable laying work across Ho Chung River during the dry season and implementing adequate mitigation measures such as the use of barriers to contain suspended sediment and control measures on runoff and drainage. Such measures will significantly limit impacts on downstream water quality and on downstream water sensitive receivers. Proper site management and good housekeeping practices will be essential to ensure that construction activities will not cause non-compliances of WQOs for river water quality. These measures are listed in details in Section 6.7. Sewage effluent arising from the construction workforce would also require appropriate treatment through provision of portable toilets.

To ensure the effectiveness of the recommended mitigation measures, water quality monitoring and audit will be essential to proactively identify any deterioration in water quality and to check that the construction activities are not causing any non-compliances with the Action / Limit levels.

It is considered that through implementation of the recommended mitigation measures in Section 6.7, potential water quality impacts can be minimised during construction of the Project. As such, the construction works are not expected to cause exceedance of WQO standards.

9.5 Cultural Heritage

The review of all relevant information shows that the potential archaeological impact of the overhead/underground cable route generally is very low. The only area of any archaeological potential is that of the Ho Chung Valley. In order to ensure against any loss of archaeological information or materials, rescue excavation will be undertaken to salvage the cultural relics prior to commencement of trenching works across the Ho Chung Valley. Sufficient time will be allowed in the Project Programme for carrying out the rescue excavation subject to agreement of AMO.