

ENGINEERING

Roading

The 7km primary access road will extent from the Te Mata Quarry across private farm land to Plateau Road and then cross and re-cross the alignment of the paper (legal, but unformed) road to the Plateau. The primary access road will be 6m wide and a significant portion of it already exists as a farm access track.

The road needs to be suitable to convey various forms of vehicles ranging from earthwork equipment to 45m long transporters carrying the turbines from Auckland to the site, and a 400 tonne crane. The internal access roads to the turbines total approximately 18km and will be 6m – 10m wide to accommodate the crane. The majority of the road will be unsealed except for steep gradients where additional traction for vehicles is required.

Earthworks

The physical works required to achieve the desired outcomes for the project involve a significant amount of earthwork (approximately 350,000m³), road base construction (approximately 25km) and concrete foundation construction (approximately 18,000 m³). The extent of earthworks vary around the site, ranging from removal of topsoil to significant cuts and fills in more challenging locations. The deepest fill will be approximately 10m across an existing gully head and the deepest cut at the summit of the plateau will be 10m deep. The effects of this work can be mitigated through careful programming and construction management.

Each turbine will be located on a platform of suitable size to provide working space for the crane, materials and deliveries. Platforms will be 50m x 50m and generally flat. The turbine concrete foundation is expected to be 18m² and 2 meters deep.

Detailed design and control systems will ensure that the effects from the works are controlled and are no more than minor. Materials can be managed on-site to limit the potential for off-site effects. An example of this is making use of rock from the site for road base construction, therefore limiting the importation and carting of materials from a significant distance.

Stormwater Control

The hydrology of the area and associated catchments are well defined. Preliminary assessment of the area indicates a number of culverts will be required where the road alignment passes over channels. The culvert pipe diameters will range from 300mm to 1500mm. All stormwater runoff from the road will be captured in side swale drains and then directed to a pond or controlled outlet point.