

## **Environmental Conditions**

### **Orimattila, Henna**

#### **1 Climate**

Orimattila is situated in the boreal zone of Southern Finland, the average annual temperature of which is ca. +4 °C. Snow covers the ground for an average of 4 months from December to late April. The snow cover is usually thickest in March. The lowest temperatures are measured in late January, when it can be as cold as -30 °C. In summer, which lasts up to 4 months, the average temperature is above +10 °C. Annual precipitation amounts to ca. 640 mm and the average number of precipitation days is 180. The prevailing wind direction is south-southwest. The long-term average wind speed in the Henna region, measured 50 m above the ground, is 4,7 m/s (modelled as average speed on a 2,5 km \* 2,5 km grid, source: IL Suomen tuuliatlas 2009). The wind corridors provided by motorways and railroads are recommendable for the production of wind energy.

#### **2 Landscape and soil**

According to its landscape classification, the area belongs to the Porvoojoki agricultural region. The territory between the motorway and the old road to Helsinki (Vanha Helsingintie) consists mostly of forested ridges. These vary considerably in terms of height, creating strong landscape boundaries. The soil is predominantly morainic and rocky, interrupted by longitudinal ridges. The arable land of Iso-Henna stretches in rolling hills between the forest ridges. East of the motorway, the landscape gradually changes to reveal characteristics of wilderness. Here, bold rocky ridges alternate with valleys that contain a multitude of swamp areas.

The rock of the Henna region consists mostly of granite as well as amphibole and mica gneiss. The gravel and sand ridges that form the central part of the area along Huhdanontie road continue east of the motorway in north-south direction. The region has no lakes or ponds, nor real rivers. It consists predominantly of rugged, forested uplands with bare rocks and morainic ridges.

#### **3 Environmental disturbances**

Due to its high volume of traffic, the motorway is a 24-hour source of noise. Without anti-noise barriers, its effect is noticeable as far as 300 m from the road. Additional noise as well as vibration is caused by the railroad track; this issue has not yet been investigated for Henna. The residential areas of the Henna region should be protected from traffic noise disturbances. Anti-noise barriers could be utilised in the production of solar and wind energy.

According to the current permit, the gravel pit situated in the region will be in use until 2018. Utilising this gravel in local building projects and prudent planning of the pit's future use provide an ecologically sound way of realising the plans for the region.