

Development of countermeasure technology against biodiversity conservation regulations related to the electric power industry

Sonoko TSUDA
Manager, Energy Applications Research & Development Center,
CHUBU Electric Power Co., Inc.
Nagoya, Japan

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Abstract

Aichi Target, the world aim of biodiversity adopted in COP10 held in Aichi prefecture of Japan in 2010, is going to greet a promise period for the strategic goal. This middle aim requires every contracting countries to take effective and urgent action to halt the loss of biodiversity until 2020. In Japan, Ministry of the Environment plays the leading role and is establishing various policies and guidelines in recent years toward the achievement of this aim. In addition, the environmental conservation groups are getting further active.

Some of these policies and activities affect the construction and the maintenance of electrical facilities, and the opportunities requiring countermeasures is increasing. On this workshop, we will show some studies for taking practical measures to these requirement.

[Case1: Rare plant species was found under the transmission line]

An environmental conservation group found the rare violet flowers listed as endangered plant species under the transmission line. Although cutting tree branches under transmission lines is necessary to keep separation distance, they demanded us to stop cutting or relocate the transmission line tower. We started to study for protection of those violets, after four years we developed artificial multiplication and enabled to transplant into another location without disturbance. During this process, we built a cooperative relation between local research institute and environmental conservation group. We can continue cutting tree branches under transmission lines thanks to this friendly relationship.

[Case2: The type of plants that can be used for greening was limited]

In Japan, imported grasses or herbaceous plants have used for greening of construction because of their early and stable growing. However, the latest guidelines require to use native plant species collected from neighborhood of the greening site for considering the regional ecosystem. The intension of this guideline is to protect biodiversity at a gene level, but there are few studies on genetic information of native species especially herbaceous plants. We investigated the chloroplast DNA variations of 10 herbaceous plants including 9 grasses and 1 legume native in Japan and their geographical distributions. Our study indicates that there are some species which have no genetic differences in japan. This result suggests that it isn't always necessary to collect the plants from near the greening site, and that it's possible to reduce excessive cost and term of construction work.