

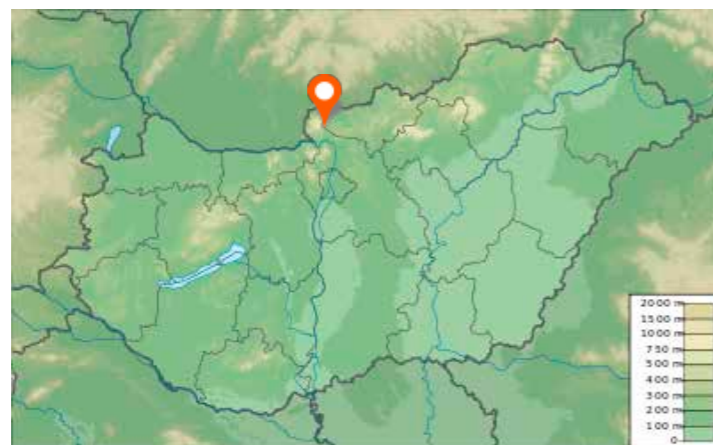
asked about their willingness to participate in the supply chains. Local governmental institutions are open to develop local CHP (under 50 kW rated electric power) for supplying schools, kindergartens, nursing homes and other buildings, but governmental fund will be needed to emplace such projects.

Awareness raising events and specific meetings were organized from the beginning of the project to involve local stakeholders.

As a result of specific meetings the leaders of DINPD decided to change the plans of the farming facility in Esztergom and a biomass heater was installed here.

Involving the Pilis Parkerdő Zrt. was based upon the long existing partnership between the DINPD and the forestry company. Negotiations were carried out with other forestry companies as well – this might result in setting up further local supply chains in the future.

Long term agreements and yearly contracts were signed. In the Ócsa region local inhabitants signed the contracts themselves, while in the Type3 residential supply chain the inhabitants were represented by the local governments in the contracts, because of large number of involved individuals.



Location of the park



Bioeuparks project



Danube-Ipoly National Park



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USE OF WOOD BIOMASS FROM PARK Example of Danube-Ipoly National Park, Hungary

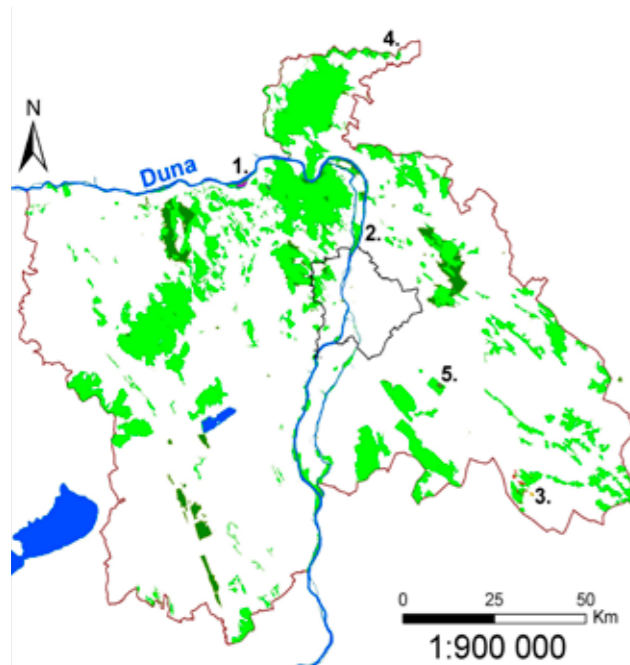


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1. Description of the park

The Danube-Ipoly National Park - established on 60,314 hectares on 28 November 1997 - is the most diverse of all national parks in Hungary. In its unique diversity it unites four regions of Hungary, the Pilis–Visegrád Mountains, the Börzsöny Mountains, the Ipoly Valley as well as a part of the Great Hungarian Plain along the Danube.



Protected areas (green) in the DINPD's operational area. Numbers indicate areas where removal of invasive plants is ongoing.

The national park is destined for preserving the natural values of these mountain forests of specific beauty and habitats along the rivers.

The Danube–Ipoly National Park is located in the central region of Hungary, north of Budapest and is connected in several places to the Slovakian border. Some parts of the national park are located in the direct vicinity of the capital. This means that the area is densely populated and there is a strong need for recreational use and other land use by local inhabitants.

The nature conservation manager of the national park and other protected areas in mid-Hungary is the Danube-Ipoly National Park Directorate (DINPD). The 1.354.742 ha administrative area of the DINPD includes 267.566 ha nature conservation sites of community importance (Natura 2000 sites) and areas of different national protection level: the Danube-Ipoly National Park itself, 8 Protected Landscape Areas and 35 Nature Conservation Areas and ex-lege sites. The overall size of the areas of national importance is 135.000 hectares including a Biosphere Reserve, a European Diploma site and several Ramsar Sites and Forest Reserves of great significance.

2. Solid biomass potentials in the park

As nature conservation is the main task of the national park directorate priority was given to biomass resulting from nature conservation management and the areas of own management while setting up biomass supply chains for energetic use.

The total size of the areas managed by the DINPD itself is 15.000 hectares: 2.700 hectares forest and the remaining part is mainly grassland. Forestry management – aiming to produce wood – is done only on half of the self managed forest areas. Relatively big amount of woodchips and hay is result of the removal of invasive species and nature conservation management of the grasslands.

Big amount of woody biomass is produced by the state owned forestry companies. Pilisi Parkerdő Zrt. manages forests on 57.000 hectares, sustainably producing 196.000 m³ wood yearly, 144.000 m³ of that is originated from protected areas of 42.000 hectares. 33.000 m³ of the yearly production is industrial wood, 163.000 m³ fire wood and woodchips.

Ipolyerdő Zrt manages forests on 64.000 hectares, 25.200 hectares of that belongs to the national park.

3. Description of production chain

Three types of pilot small scale local supply chains were set up in the frame of the project, where local means less than 50 km distance transport and small scale means less than 1MW capacity heaters.

In Type1. supply chains the whole process from producing biomass and using the heat energy is done by the DINPD itself. The pilot supply chain of this type is set up in Sas-hegy Natrue Conservtion area, where the biomass results from the removal of invasive species from the protected area and the produced heat energy is used for heating the visitor centre. The process is presented at the site for the visitors. Similar supply chain is to be set up in Esztergom for heating the animal farm.

Type2 supply chain is based upon biomass produced by the DINPD and the end users are local inhabitants or small local entrepreneurs. Transport, storage, conversion and energy production is done by



the end users. The pilot supply chain of this type is set up in Ócsa, where biomass is resulted from forestry management of the Ócsa Landscape protection Area. The way of harvesting and the small scale transport based upon manpower is the best solution from nature conservation point of view and at the same time results in relatively cheap price of the fire wood, which makes this type of supply chain also socially and economically sustainable.

Type3 supply chain is based upon the biomass produced by the Pilisi Parkerdő Zrt.: The biomass resulted from forestry management in the national park is sold to governmental institutions, local entrepreneurs and local inhabitants for heating purpose.

4. Description of wood biomass producers and suppliers

Most of the forest areas in the protected sites are managed by the state owned forestry companies. Forestry management is done based upon the forestry plans. Environmental sustainability is ensured by the Forest Law and Nature Conservation Law of Hungary.

In the pilot supply chains the biomass supplier (wood producer) is either the DINPD or the Pilisi Parkerdő Zrt.

FSC Forest Management Certification hasn't been issued to any forestry company in the operational area of the DINPD and PEFC is not introduced in Hungary yet (national standards haven't been elaborated). However there are sites where the forestry management meet the requirements of the FSC principles but the managers have not applied for the certification. This is valid for the Pilisi Parkerdő Zrt. as well.

In each cases biomass is resulted from nature conservation management or from selective cutting in the protected areas.

In grassland areas biomass is produced by nature conservation management: removal of invasive species and shrubs and mowing. The harvesting is done by DINPD workers or subcontractors. In some cases (invasive removal) volunteers also help in harvesting.

In case of woodchips, conversion is done by the biomass producer. In some cases subcontractors are involved as well. Transporting the biomass is done by the supplier, subcontractor or the end user.



5. Description of end users

Usage of firewood is traditional in the households of this region rich in forests. New technologies like woodchip-heaters are relatively new developments mainly in public institutions. Middle scale biomass powerplants can be found in the region and in Slovakia as well. There is no data about existing small scale power plants or CHPs.

In the type1 pilot supply chains the enduser is the DINPD: biomass heaters are installed in its facilities (visitor centre, animal farm). The type of the heater was selected considering the type of the biomass available in the nearby sites. The Sas-Hill Visitor Centre's heater uses woodchips as fuel. The heater in Esztergom farm can use different fuel types: woodchips, hay and firewood. These installations are hightech and the conversion is very effective.

In the type2 pilot supply chains local inhabitants are the end users of the firewood mainly burnt in traditional ovens or in household scale facilities. A small local pasta factory in Ócsa also buys firewood as fuel for its small scale heater facility.

In Type3 pilot supply chains woodchips produced by the Pilisi Parkerdő Zrt. is used in heating facilities of small entrepreneurs (hotel) and in the small facilities of the army and firewood is sold to the local inhabitants.

6. Setting up the production chain

The local supply chain plan was set up considering the nature conservation priorities, the availability of biomass and the existing or possible end users. Overlapping the possible production areas with the small scale energy production facilities selected the possible project areas.

From the available options, priority was given to the feedstock, which is available at the lowest risk to biodiversity and which can be harvested with the highest level of sustainability.

Planned biomass heater or CHP installation capacity was examined as well. Institutions of the DINPD, municipalities and forestry companies were considered as main target group of possible future biomass heater developments. Mayors were invited to meeting, where they were informed about the possibilities and