

Replacement of twenty-nine weirs on Aisne and Meuse rivers

Laura Chapital, Voies navigables de France

Introduction

On 24 October 2013, Voies Navigables de France (VNF) and BAMEO, a project-based company made up of Vinci Concessions and the Shema Meridiam investment fund signed a Private Finance initiative (PFI) for the reconstruction of 29 weirs on the Aisne and the Meuse. The competitive dialogue procedure, conducted by VNF, made it possible to retain a project, in which the costs and delivery lead times were optimised.

PFI contract



Figure 1: Map of the contract's geographical scope

The project for the rebuilding of the dams represents a significant modernisation programme for the waterway. It involves replacing 29 manually operated weirs with modern automated dams in order to improve the reliability of the waterline management and the working conditions for VNF's agents. In addition to these challenges, VNF aims to become actively involved in developing the hydroelectric potential of the waterways, with the construction of micro-power stations in order to contribute to the nation's energy transition objectives. The reconstruction of all the weirs, which will be composed of inflatable rubber weirs, is planned for 2020. The first of these will be commissioned by 2017. The Givet and Monthermé dams, which have already been rebuilt, are included in the programme.

The Private Finance initiative (PFI) contract was concluded for a 30-year term. It includes the financing, design, construction or upgrading (for the Givet and Monthermé dams, which have already been automated), operation, maintenance, major upkeep and replacement of the 31 automated weirs and their associated facilities, as well as the implementation of the project's statutory environmental measures (avoidance or compensation of impacts) and other measures designed by BAMEO. Fishways, which have also been included, will be used to restore the biological conti-

nunity of the waterways. In terms of financial compensation, VNF will pay a fee from the moment the facilities are delivered and throughout the term of the contract.

Currently, the total cost of the project comes to €312 million, exclusive of tax, including €273 million of investment.

Achievements

VNF's decision to enter into a competitive dialogue process made it possible to take into account all the particular features of the project. The significant number of similar works to be carried out, has encouraged the candidates to seek standardised solutions in order to optimise the costs and delivery lead times, taking into consideration the restrictions imposed by the seasonality of the works.

What's more, given that the reconstruction of a weir is not hampered by the issue of its technical feasibility, several technological solutions for the weirs have already been tested. Consequently, the project submitted to the competitive tender is based on a programme with operational and performance-based criteria, without prejudging the solutions which may be put forward. The design studies were completed as part of the consultation process prior to the conclusion of the partnership contract, in order to fulfil the performance levels set by VNF.

The programme includes the following performance levels in particular:

- the preservation of the current hydraulic equilibrium of the river, e.g. with the manually operated weirs;
- the management of the waterline: removal of the works during floodwater periods, respect for the minimum biological flow rate, definition of the water levels and the operational flow rate limits and a gentle operation of the works designed to restrict any damage to the streambed and the rivers banks as well as any negative consequences on the surrounding wildlife and habitats;
- the restoration of the ecological continuity associated with the SDAGE;
- the environmental performance levels corresponding to the construction and operation phase of the works: preservation of wildlife and habitats, waste management, carbon assessment;
- the availability and working condition of the works during and at the end of the contract.

These levels of performance are the result of the work undertaken with the state departments, the ONEMA, the Agences de l'eau (water authorities) and the Entente Oise Aisne and EPAMA establishments (workgroups set up from March 2008, coordinated by the DREAL/DREE basin coordinators) in particular. It is worth noting that this group of specialists became a permanent fixture during this dialogue process, given that the participants were involved in analysing the proposals and the candidates' bids.