ReHydro

Demonstration of Sustainable Hydropower Refurbishment

M14 Data from WP1-5 consolidated as input to WP6

Work Package	WP6 Upscaling technical and digital solutions
Responsible	Corinna Köpke, SINTEF
Milestone reached	13/07/2026

The tasks in WP6 require various input information that has been acquired during the project and beyond. The upscaling activities will involve sites studied in the project but also sites that have not been considered in the project so far. T6.1 Increased flexibility receives mainly input from D2.3 and D2.4; T6.2 Turbine for migratory fish is based on T4.1; T6.3 Climate change guidelines is based on various inputs from WP1 to WP5; T6.4 Upscaling of societal services is mainly based on WP5 and T6.5 Economic sustainability receives input from T3.2 and T3.3. T6.6 Decision support system will incorporate the work from the other WP6 tasks, in line with the needs of the end users of the decision support system. These planned dependencies have been reviewed and further specified for M14.

T6.1 will mainly rely on work done in WP2, specifically the findings reported in D2.3 which will be available in August 2026. The upscaling in this task will be performed by studying new hydropower plant (HPP) projects where capacity is supposed to be increased. A candidate study site is the plant Montezic (EDF), an existing HPP of 900 MW where two reversible turbines of 2 x 240 MW will be installed.

T6.2 is mainly based on work done in WP4, specifically T4.1 on safe downstream passage of eels at large hydropower plants. The developed methodologies will be analysed in complementary sites, i.e. Golfech, Bollène and Caderousse (EDF), Beaucaire/Vallabregues (CNR). Hydrological data from these sites will be required for the assessment.

In T6.3 the Touvedo and Carrapatelo Hydropower Plant (EDP), as well as Røldal-Suldal (LYSE) will serve as study sites for the application of the HOW-TO GUIDE Hydropower Climate Change Resilience by the Hydropower Sustainability Alliance (HAS). The latter is an updated version of the Hydropower Sector Climate Resilience Guide by IHA. The work will further build on the Climate Change Adaptation Plans (CCAP) by EDF, EDP and CNR along with the national requirements, respectively. Knowledge about sustainable refurbishment from WP1-WP5 will be incorporated in the assessments of the example sites.

In T6.4, the test site Bollène and Caderousse (CNR) serves as starting point for this task. Workshops will be conducted to collect the needed information to challenge and improve the ecosystem service matrices by EDF and the risk approach by INTOTO. This task is mainly based on information from WP5, specifically T5.1 and T5.2.

In T6.5 the upscaling will be performed in the test site Røldal-Suldal (LYSE) and further with a focus on examples that demonstrate the importance along different axis. The multi-market tool presented in D3.2 will be further developed including a web-based visualization. The work in this task is based on data related to investment analysis and multimarket prices.

T6.6 is mainly based on data of WP5 and the other tasks in WP6. The development of the decision support tool involves multicriteria methods for refurbishment options. Interviews with site owners are conducted to collect their needs and expectations regarding the decision-support system for refurbishment projects. This initial stage will enable to refine the data requirements which include sustainability-related aspects addressed within ReHydro (e.g., social, environmental, economic dimension). The work will also draw inspiration from a previous decision-support system, FIThydro DSS, for which preliminary information has already been collected through an internal webinar. Finally, the decision-support system will be tested on ReHydro sites that will be refine as the task progresses. At this stage, the main application sites considered in this task are Valeira (EDP) Bollène or Caderousse (CNR) as well as Vouglans and Saut-Motier (EDF).

These data requirements will be reviewed over the course of WP6, and application sites might change based on the developments.

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