This is an Executive Summary of one of the ZEBRA-LIFE project deliverables.

1. PROJECT ANNUAL REPORT (YEARS 1, 2, 3, 4)

1.1. SUMMARY

This deliverable shows an overview of ZEBRA-LIFE project activity during the first 12 months of life of the project, including information about Objectives of the WP, Summary of Progress, Significant results and achievements, Deviations and critical issues, Corrective actions, Meetings and Use of resources.

During the first year of the project (01/11/22- 31/10/23) the following activities have been developed in each WP:.

Regarding WP1, the most significant outcomes have been the set up of the coordination activities for the smooth development of project tasks, financial monitoring and in-time submission of the deliverables. A series of 11 project meetings (face-to-face and online) have been periodically organised and an efficient communication (through emails, LIFE helpdesk and meetings) with the Technical Monitor has ocurred during this period. Besides the interactions and visit of the technical monitor there have been some communications with the Project Officer through emails and the Funding & Tenders portal. Furthermore two deliverables (D1.1 and D1.2) have been prepared with the contribution of project partners.

In WP2, the first batch of lignin has successfully been extracted from SK's black liquor and received at CENER. Additive requirements for the different applications have been defined, two batches of lignin-derived antioxidants have been produced and stability of produced samples has been evaluated for 3-week storage time. End-products have been manufactured incorporating the additives and their antioxidant performance. The sensor for on-line antioxidant capacity of lignin-derived additives has been proven, and an electrode-cleaning protocol is being developed to achieve better measurement stability in process samples.

Within WP3, the final engineering design for the ZEBRA pilot plant has been finalized including the specifications of each process unit.

WP4: Neither work progress nor achievement for this period. This work package will take place between the M27-M42, starting the Q3 in the Y3 of the project.

WP5: The monitoring and reporting plan has been developed (D5.1) which includes the project baseline calculation and context identification in regard to the environmental and socio-economic project impacts. In addition, the different project KPIs have been defined and the corresponding targets to be reached at the end of the project and 5 years after the end of the project. The plan also includes the different activities that will be performed during the

project lifetime to monitor ZEBRA-LIFE project impact. Moreover, the preliminary values of the defined KPIs have been uploaded into the LIFE KPI webtool after interaction with the LIFE KPI monitoring officer. This first snapshot includes the correction of the calculation methodologies defined in the aforementioned plan and the addition of some other relevant indicators. This information is included in D5.2.

With respect to WP6, a series of periodic follow-up meetings have been established and partners have agreed on the work approach to collect the exploitation data as well as having a common understanding of the technical requirements and challenges of the integration of ZEBRA LIFE process within the pulp and paper plant.

Within WP7, the basis for the communication and dissemination activities have been set such as the plan, the project corporate image, the website and social media accounts launching and the first contact with other LIFE projects. On the second half of the year, the activities defined on the plan have been started initiating the activities in the social media and regularly updating the website.

In general terms, the project has progressed as planned and communication between partners has been fluid and efficient. The higher workload has been located in WP2 and WP3 where the efforts are concentrated in the production and testing of the first batches of products for the different applications and in the construction of the pilot plant.