W2W and Enhancing Waste Wood Valorization with DPP

Recommendations for Policy Makers

Kavour Efthymios Ioannis

CERTH - 27/11/2025

WOOD2WOOD

Funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

The problem - Wood Waste

- Wood waste (*ww*) production in EU has been significant and varies across sectors.
- According to Eurostat waste statistics from 2020, the EU generated 48.28 Mt of ww.
  - Germany, France and Italy produced 13.32 Mt, 7.7 Mt and 5.1 Mt respectively (Eurostat 2023)
- Around 30.2% of ww is landfilled.
- Incineration with energy recovery varies across countries:
  - Germany incinerates ww with energy recovery about 70% of ww.
  - Italy incinerated ww with energy recovery about 17% of ww but recycles a great portion of it.

Funded by
the European Union

The consequences - Wood Waste

- Environmental Impact:
  - Using recycled instead of fresh wood in particleboard production can reduce CO_2 emissions by around 428 kg CO_2-equivalent per tone.
  - It is estimated that better ww management and valorization could save about 840.000 tonnes of CO_2 annually across the EU.
- Economic Impact:
  - Recovering and reusing ww generated approximately € 130 million in economic value across the EU.
  - Efficient ww recovery strengthens industrial efficiency and the regional economy through sustainable resource management and energy production from waste biomass.

Funded by
the European Union

Current Challenges

- **Wood Waste management**
  - Lack of traceability across the wood waste supply chain.
  - Absence of standardized data formats for consistent reporting
  - Week collaboration between producers, municipalities and recyclers.
  - Regulatory uncertainty hindering efficient management and investment.

- **Wood2Wood project**
  - A project dedicated to find solutions to those challenges and optimize wood waste management across all lines of services.

Funded by
the European Union

What is the Digital Product Passport (DPP)

- A DPP is a digital “identity card” storing information about a product’s origin, composition, use and end-of-life steps.
- Role in enabling transparency, reuse and recycling.
- Link with EU initiative like Ecodesing for Sustainable Products Regulations and CIRPASS.

Manufacturer

Creates the product and records all relevant data in the DPP - origin, materials, composition, and recyclability information

User

Accesses the DPP to understand product use, maintenance, and repair options.

Recycler

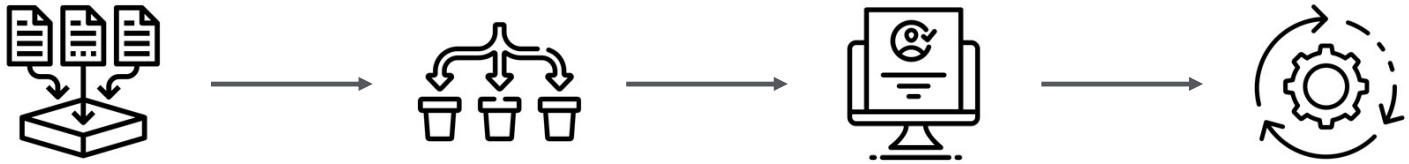
Uses the DPP data to identify how to properly recycle or recover materials from product.

Funded by
the European Union

Integrating DPP into W2W

- Digital Product Passport will be able to record both information about a product as well as processes
- Product information DPP will record:
  - Source, type, treatment, certifications, quality etc.
- Process information that DPP will collect:
  - Sorting, collection, classification, reuse etc.

Waste to Value



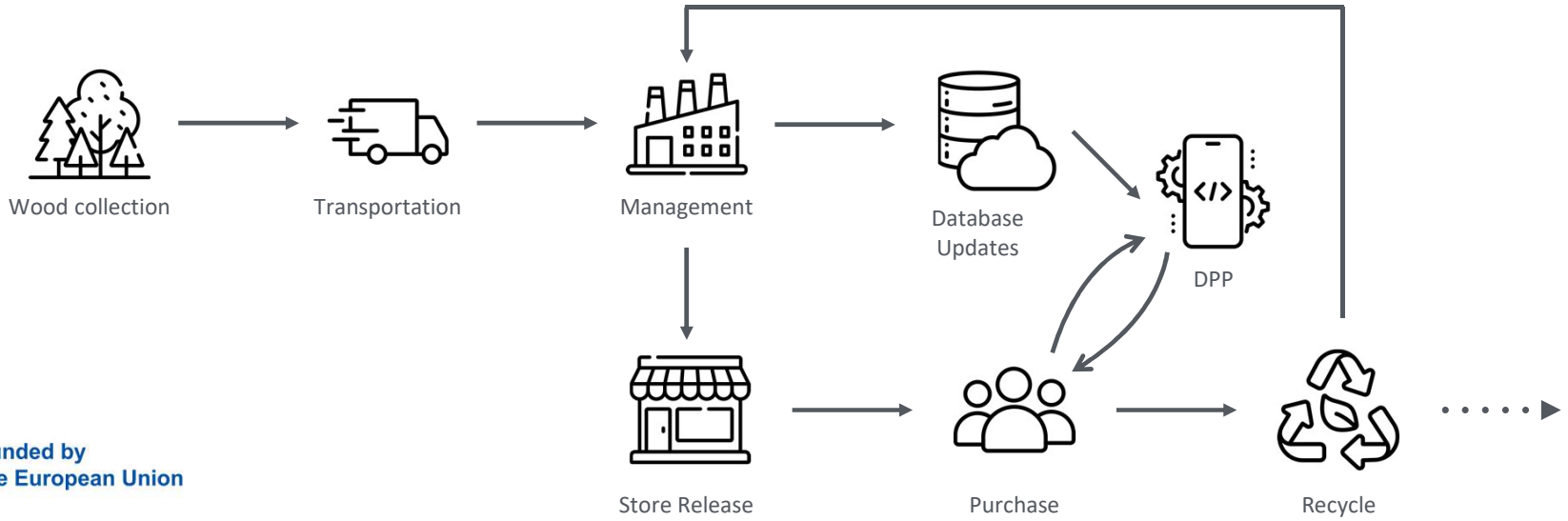
Collection Sorting DPP Registration Reuse/Recycle

Funded by
the European Union

DPP System

Framework and Architecture

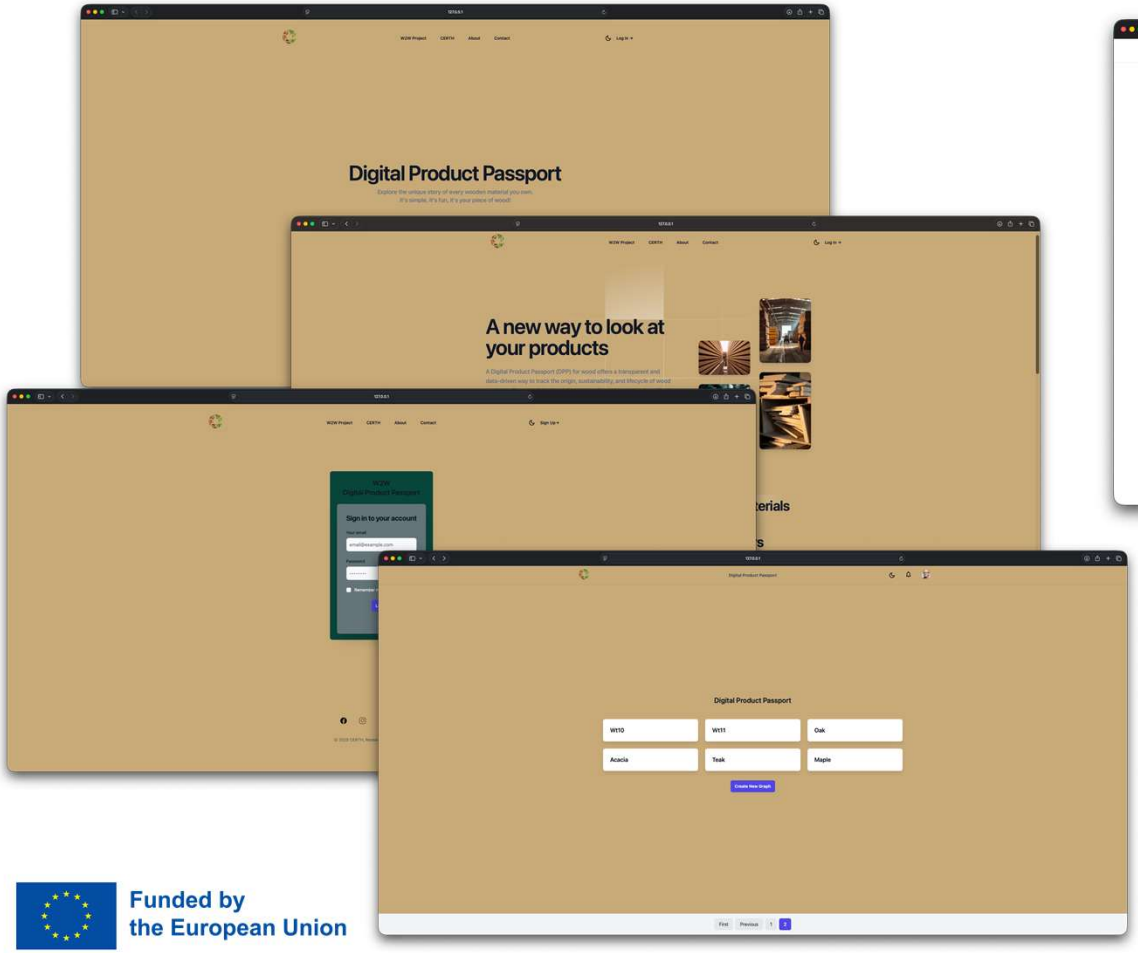
- Core components: Database, API, QR codes, Blockchain or graph database
- Design for seamless interoperability with existing wast management systems.
- Key actors involved: industry/manufacturers, municipalities, recyclers.
- Technology connects every link in the wood value chain.

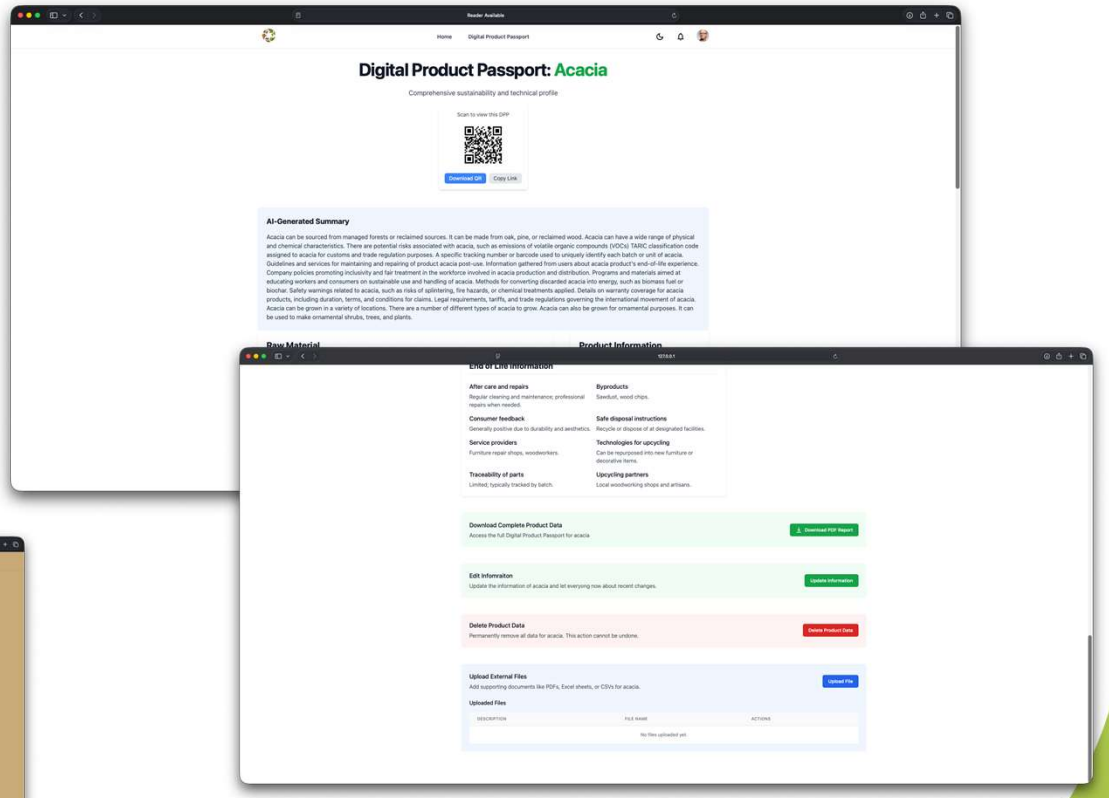


Funded by
the European Union

Pilot demonstrations

Proof-of-concepts / Use-case simulations





Funded by the European Union

Benefits for Society & Economy

Triple impact of Digital Product Passport

- Economic: Opens new markets, reduces costs, improve resource efficiency

- Environmental: Cuts waste, saves CO_2, emissions, promotes circularity.

- Social: Increases transparency, supports sustainability, creates jobs.

Funded by
the European Union

Policy Recommendations

- Short-term :
  - Define common data structures

Establishing standardized data formats and interoperability protocols is crucial to ensure seamless exchange and accessibility of digital product passport (DPP) information across industries and borders. This will facilitate transparency, traceability, and easier integration for all stakeholders.

- Long-term:
  - Introduce legal framework for mandatory DPP adoption.

A robust legal mandate will guarantee consistent implementation of DPPs, ensuring compliance and fostering accountability throughout the product lifecycle, from manufacturing to end-of-life management.

  - Provide financial incentives for companies and local authorities

Offering subsidies, tax breaks, or grants can accelerate adoption by reducing initial costs and encouraging innovation in DPP technologies, wile supporting local governments to builds necessary infrastructure and awareness.

Funded by
the European Union

Conclusion

Call to Action

1. Wood is a valuable resource worth protecting and managing sustainably.
2. The Digital Product Passport ensures the identity of wood products and boosts transparency throughout the value chain
3. Strong policy support is essential to accelerate the transition towards a circular economy.

From Waste To Value

Powered by Information

Thank you all for your attention!

Funded by
the European Union

From Waste To Value

Powered by Information

Thank you all for your attention

Funded by
the European Union