

R3-MYDAS ADDRESSES QUALITY AND EFFICIENCY THROUGH CLADDING PROCESS OPTIMIZATION

In the next step of the R3-Mydas project, we are kicking off the second task of our Oil & Gas crankshaft case study, aiming to optimize the cladding process to enhance product quality, sustainability, and efficiency. This phase marks a crucial turning point in our efforts to streamline repair processes in the industry while minimizing environmental impact and operational costs.

Optimizing the Cladding Process for Improved Performance

Our focus in this task is clear: enhance the quality of the deposited material, boost overall efficiency, and reduce the environmental footprint. To achieve these goals, we will follow a structured workflow, starting with the implementation of a Design of Experiments (DOE).

This experimental framework will allow us to systematically explore how different process parameters such as power, speed, and temperature, affect the properties of the deposited material. By analysing the effects of these variables, we will identify the optimal conditions that lead to enhanced material performance and durability.

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R3-Mydas Validation Plan Initiated: A Key Milestone Towards Use Case Demonstration

The R3-Mydas project has reached a significant milestone with the completion of its initial validation plan. This comprehensive plan marks the transition from preliminary design to the development and implementation phase for the consortium's use case demonstrations. Having a robust and well-structured validation framework in place enables all partners to move forward with confidence, knowing that the solutions they are developing will undergo rigorous testing and provide clear evidence to support their effectiveness.

Building on the earlier work of formalizing ambitious targets for demonstrating industrial transition to circularity, the validation plan considers the unique characteristics of each use case, while ensuring consistency across the project.

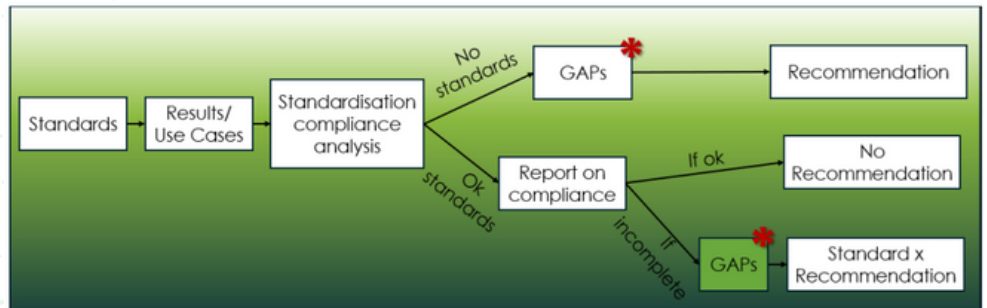
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Project framework towards standardisation and transferability

The demand of wind energy is continuously increasing, given its green potential. In fact, the tendency through the last years has been to build bigger and bigger wind turbines, to achieve greater energy generation power and reduce the levelized cost of energy.

Standardisation plays a vital role in ensuring consistency and quality across various industries. It creates a common framework that allows different products, services, and systems to work together smoothly, which is essential for reducing complexity and enabling global trade.

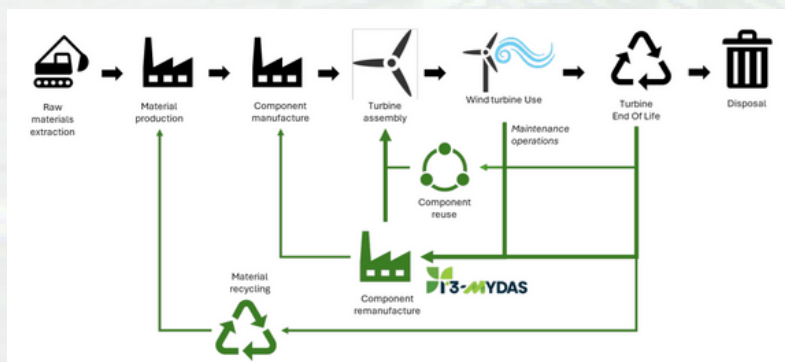
By following established standards, organizations can improve efficiency, drive innovation, and ensure that their offerings are safe and reliable.



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R3-Mydas new sustainable and circular value chains

R3-Mydas facilitates and speeds up the manufacturing industry's shift toward more sustainable and circular value chains. To ensure lasting impact, a Safe and Sustainability by Design (SSbD) assessment will be conducted on the new circular value chains in the project's three demo cases: oil and gas, electric vehicles, and the wind energy sector. Figure 1 shows the new circular value chain for the wind energy sector. Instead of considering a linear value chain (in black), where when a component of a wind turbine fails, the only option is disposal, R3-Mydas will allow the component to be repaired at the end of the turbine's life, but also during maintenance operations during the use phase.



This remanufacturing process will reintroduce the component into the value chain during the assembly or manufacturing phase of the turbine. In this way, it is possible to achieve a more circular scheme (in green).

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