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CONTEMPORARY APPROACHES TO PROJECT MANAGEMENT

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Abstract

The JUSTEM project, funded under the LIFE Programme, addresses the challenge of supporting a just energy transition in coal-dependent European regions. An innovative feature of the project is the integration of the High-Level Structure (HLS) methodology, derived from ISO management standards, as a framework for planning, implementing, and evaluating the exploitation of results. This paper examines how the HLS framework has been applied to enhance the sustainability, scalability, and replication of JUSTEM's tools and outcomes. By mapping project deliverables against HLS principles, the study highlights the effectiveness of this structured approach in real regional transition contexts, with particular emphasis on addressing energy poverty.

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Abstract
The JUSTEM project, funded under the LIFE Programme, addresses the challenge of supporting a just energy transition in coal-dependent European regions. An innovative feature of the project is the integration of the High-Level Structure (HLS) methodology, derived from ISO management standards, as a framework for planning, implementing, and evaluating the exploitation of results. This paper examines how the HLS framework has been applied to enhance the sustainability, scalability, and replication of JUSTEM's tools and outcomes. By mapping project deliverables against HLS principles, the study highlights the effectiveness of this structured approach in real regional transition contexts, with particular emphasis on addressing energy poverty.

Keywords
High-Level Structure (HLS); project management; just transition; JUSTEM project; results exploitation.

I. Introduction

In project management, experience gained from implementation contributes to enriching and transferring valuable knowledge and practices.

Transition is a major structural change that economically, technologically, environmentally, and socially impacts the entire community of a region. Energy poverty represents a major barrier to achieving fair energy transitions in Europe's post-carbon regions. The JUSTEM project addresses this challenge by strengthening regional capacities and engaging citizens in transition planning. Within project management, exploitation together with communication, dissemination, and

replication are key activities for transferring results, accumulated good practices, and the necessary steps for a successful transition. The introduction of the HLS approach for structuring and leveraging the JUSTEM project's results is a pioneering initiative in project management, offering a coherent, systematic methodology.

This paper aims to highlight two emerging trends in project management: results exploitation and the application of HLS, with illustrations from the JUSTEM project.

II. Literature Review

The concept of a "just transition" refers to the process of socio-economic transformation towards a low-carbon economy in a fair and inclusive manner for all social actors, particularly for workers, communities, and regions dependent on polluting industries. The term was popularised by trade unions in North America in the 1990s [1], and was later adopted by international organisations such as the International Labour Organization (ILO) – which published the "Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies" (2015) [2] – and the European Commission, which introduced the Just Transition Mechanism in 2020 as part of the European Green Deal [3].

The four pillars of the just transition concept [2], [4], represented in Figure 1, include social equity – protecting those affected by the transition, democratic participation – involving local communities and social partners, economic support – professional retraining and investments in new industries, and sustainable regional development – especially in mono-industrial regions (e.g., Jiu Valley, Ruhr, Silesia).

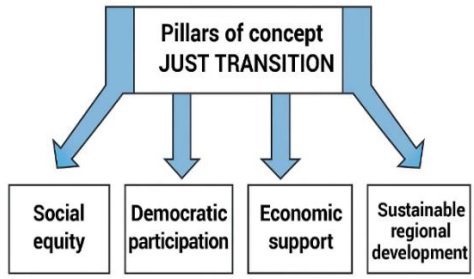

Fig. 1. Pillars of the Just Transition concept

In general, the dimensions analysed in transition research include public policies, through the design of compensatory measures and professional training programmes; multi-level governance, highlighting the roles of central, regional, and local authorities; stakeholder perceptions, explored through case studies assessing the social acceptability of transition; and impact indicators, referring to job quality, inequality reduction, and social cohesion. The literature highlights the complexity

of transition governance, and authors such as Healy and Barry (2017) [5] stress the importance of participatory planning and social equity, distributive conflicts, and intergenerational fairness, while the EU's Just Transition Mechanism operationalises these principles. Case studies (e.g., Ruhr, Jiu Valley) analyse how transition strategies can only be accepted if they provide real alternatives and local support [6].

The High-Level Structure (HLS) is a standardised architecture introduced by the International Organization for Standardization (ISO) to provide a common framework for structuring management system standards (e.g., ISO 9001, ISO 14001, ISO 45001). HLS was first published in Annex SL of the ISO/IEC Directives Part 1 (2012) and is intended to ensure coherence, compatibility, and interoperability across different management systems. This approach standardised terminology, chapters, and requirements, facilitating systems integration [7].

HLS establishes a common structure developed into 10 standardised chapters/clauses, enabling organisations to build an Integrated Management System (IMS), reducing redundancies and increasing operational efficiency [8]. The clauses cover context, leadership, planning, support, operations, performance evaluation, and improvement. The BSI Group (2015) [9] presents HLS as a model for coherence and cross-sectoral integration.

This approach is particularly useful in complex contexts, such as the ecological transition, where multiple standards are required – e.g., ISO 14001 for environment [10] and ISO 45001 for occupational health and safety [11].

HLS is relevant both in research and practice, being applied in the fields of sustainability, energy transition, and organisational governance, as it enables: the harmonisation of processes across different management standards, greater efficiency in policy implementation, and the alignment of environmental, social, and economic strategies with organisational objectives.

An example of an application of just transition is a management system based on HLS that integrates standards for the environment (ISO 14001), occupational health and safety (ISO 45001), and social responsibility (ISO 26000) [12], thus facilitating a systemic, planned transition towards sustainability.

HLS is frequently used as a foundation for the coherent implementation of ESG strategies (environmental, social, governance), enabling improved traceability and impact reporting [13].

A just transition can be supported by management standards and systems structured according to HLS, particularly in: strategic planning (Clause 6), leadership and engagement (Clause 5), impact assessment (Clause 9), and continuous process improvement (Clause 10).

Exploitation of results involves the use and valorisation of outcomes by third parties or in new contexts. The Horizon Results Booster guidelines (2021) [14]

emphasise that effective exploitation requires clarity, adaptability, and sustainability.

Although HLS is primarily applied in the corporate environment, its adaptation in European projects is relatively recent. JUSTEM is among the first examples of using this structure within a results exploitation framework for energy transition.

III. Exploitation Plan Using High-Level Structure

A. Overview of the exploitation plan development using High-Level Structure

In project management, an exploitation plan is considered well-made following the same logic of HLS, i.e. exploitation of results involves clear organization, strategic planning, measurement of the impact of needs and continuous improvement and aims to integrate the results into other organizations or policies.

Applying the HLS structure in the exploitation of the results of a European project offers a logical and transparent methodology, easy to integrate into public institutions or organizations already working with ISO standards. Within JUSTEM, HLS allowed structuring the process of valorizing the results in an exploitable, replicable and sustainable way.

Thus, exploitation was structured in three HLS stages:

- Definition: identification of the regional context, stakeholders, risks and objectives;
- Implementation: use of the Framework for Energy Poverty Assessment (FEPA), the Participatory Framework and Research Toolkit (PFRT), the Energy Poverty Alleviation Plans (EPAPs), and organization of participatory workshops;
- Improvement: performance evaluation through KPIs, feedback, and adjustments for replication.

The JUSTEM project exploitation plan introduces elements of the HLS logic, and as an element of know-how designed for HLS, it adapts the international ISO management standards. HLS is a common structure, which ensures coherence, compatibility, and integration between the project components and with fixed sections: organizational context, leadership, and planning.

Considering the three stages in which an HLS is developed and the distribution of the corresponding ISO clauses within the system, the actions for exploiting the JUSTEM project results are described in Table 1.

The developed concept of the HLS Operation Plan for the JUSTEM project is presented in Figure 2.

The benefits of the HLS Exploitation Plan for the JUSTEM project are a logical, clear structure that is easy to understand by external parties (e.g. funders, auditors); increased chances that the results will be taken up by organizations that already use

ISO standards; and easy integration of exploitation into existing organizational policies and demonstrates long-term thinking.

Table 1. Exploitation Mapping with ISO Clauses and HLS Stages of JUSTEM project

Stage (HLS)	ISO Clause (Annex SL)	Exploitation Actions
1. Define	Clause 4: Context of the organization – Understand internal and external issues, identify stakeholders, and define the scope of the system.	Understand the needs of regions for energy transition and energy poverty alleviation; define key stakeholders and goals for exploitation.
	Clause 5: Leadership – Ensure leadership commitment, define roles, responsibilities, and leadership-driven policies.	Leadership engagement at all project levels to commit to participatory transition planning and energy poverty alleviation strategies.
	Clause 6: Planning – Address risks and opportunities, set objectives, and define actions to achieve intended outcomes.	Set exploitation objectives; plan regional implementation strategies (Energy Poverty Framework, Impact Matrix, Alleviation Plans).
	Clause 7: Support – Identify resources, develop competence, ensure awareness, communication, and control of documented information.	Identify resources (research toolset, participatory methods, peer-to-peer learning concepts) needed to support exploitation efforts.
2. Implement	Clause 7: Support (continued) – Ongoing communication and competence development during implementation.	Expand support through communication platforms (JTP, workshops, participatory engagement methods).
	Clause 8: Operation – Plan, implement, and control operational processes to meet requirements.	Implement citizen participation tools, project pipeline development, and policy recommendation applications.

	Clause 5: Leadership (reinforced) – Maintain leadership commitment throughout project execution.	Ensure continuous leadership support during implementation activities to guarantee political backing and integration.
3. Improve	Clause 9: Performance evaluation – Monitor, measure, analyze, and evaluate performance through audits and reviews.	Monitor the effectiveness of Energy Poverty Plans, impact matrix usage, and citizen engagement frameworks.
	Clause 10: Improvement – Manage nonconformities, take corrective action, and foster continual improvement.	Implement corrective actions and adjust strategies based on replication feedback and exploitation performance.
	Clause 6: Planning (feedback loop) – Reassess risks and opportunities based on evaluation and new information.	Update exploitation strategies based on monitoring results, lessons learned, and stakeholder feedback.

Sources: [15], adapted after: Bsigroup, A High-Level Structure (HLS), https://www.bsigroup.com/localfiles/nl-nl/iso-9001/bsi-annex-sl-whitepaper.pdf)

B. Example of the proposed framework – an overview of the impact on Jiu Valley

As presented in the previous section, the exploitation plan developed in the JUSTEM project clearly benefited from applying the principles of HLS. All the consortium partners contributed to identifying key exploitation alternatives for JUSTEM's main outcomes. Among the most valuable outputs are a framework for assessing energy poverty, a participatory framework and research toolset, the impact matrix for energy efficiency and renewable projects, and the Energy Poverty Alleviation Plans, which set an example on how the just transition can be approached based on local needs and particularities.

The Jiu Valley, one of the most challenged areas because of the coal mining phase out, serves as a case study to prove the relevance of the HLS methodology. Thus, the Jiu Valley currently has an Energy Poverty Alleviation Plan that was confirmed with relevant local and regional stakeholders and authorities, and several projects were identified for further funding. The projects include energy efficiency upgrades for households and public schools, training programs for green jobs, and the

valorization of tailings to regenerate the environment and create new economic and social opportunities.

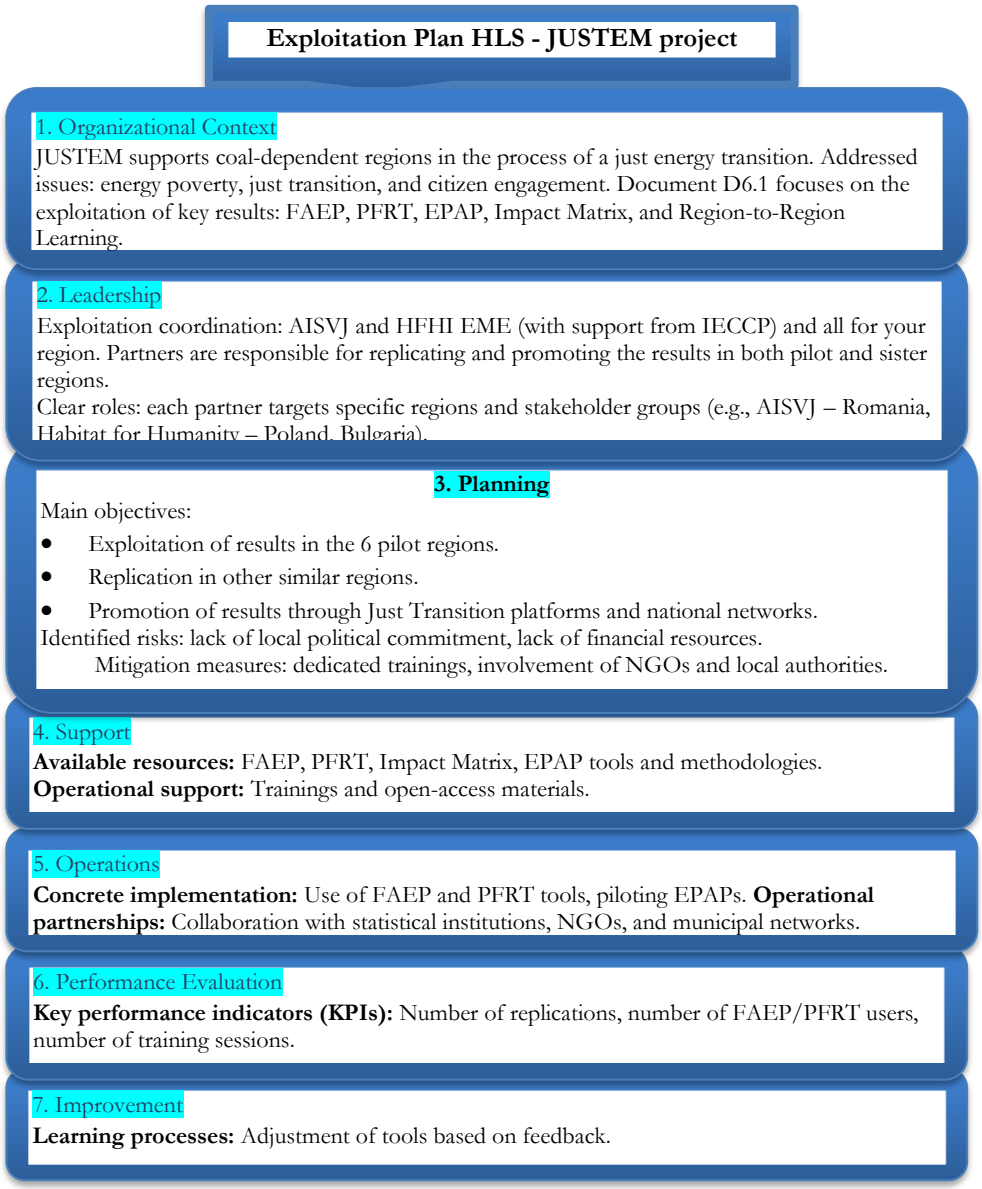

Fig. 2. Exploitation Plan HLS JUSTEM project

By reaching out to the identified stakeholders, the data collected through the implementation of the JUSTEM deliverables sets the ground for fast and efficient writing and submission for funding for the above-mentioned projects. The estimated impact of these projects (which are part of the exploitation plan) is aimed

at reducing the main social and demographic challenges that currently put Jiu Valley in a very difficult economic situation.

Another important aspect is the potential of Jiu Valley to set a positive example for other regions in Romania that are impacted by the coal mining phase out and that are targeted by the just transition, serving as a best practice for them.

IV. Conclusions

In conclusion, the exploitation plan, when applied in line with the HLS principles, leads to the valorisation of the project results. It must identify, plan, implement, monitor, and improve the use of the results – exactly as HLS requires for any management system.

We find that JUSTEM's project management and implemented activities have laid a solid, practical foundation for addressing energy poverty and facilitating a just transition in Europe's coal-affected regions [16]. Through a coordinated effort combining data-driven tools, participatory frameworks, and strategic policy planning, the project has moved beyond theoretical discussions toward practical, region-specific applications. The suite of results—including FEPA, PFRT, EPAPs, the Impact Matrix and the Region-to-Region Learning Concept—offers not only independent value but also enormous synergistic potential when implemented in an integrated manner.

In the six pilot regions, the project has demonstrated that sustainable, inclusive, and replicable approaches are achievable. Local authorities, statistical agencies, NGOs, and civil society actors now have adapted methodologies, technical resources, and tested use cases that enable them to design responsive and forward-looking interventions. This locally grounded yet transnationally relevant approach is essential to ensuring that energy transition policies are environmentally sound, socially equitable, and economically viable. The project's emphasis on stakeholder engagement and co-creation ensures that affected communities are not passive recipients of policies, but active shapers of their own future. The participatory tools developed—particularly the APOLLO-Live platform—mark a shift toward democratic governance in the development of energy and climate strategies, enabling consensus-building, conflict resolution, and enhanced accountability. The pathways for exploitation and replication ensure that the project's impact will extend well beyond its initial timeframe and geography. Alignment with EU policy instruments such as the Just Transition Fund, the LIFE Programme, and the broader goal of the European Green Deal makes

JUSTEM's results highly suitable for integration into ongoing national and regional strategies. The project's legacy lies not only in the reports, tools, policies, and proposed projects it has produced, but also in the capacity it has built among stakeholders to continue innovating, collaborating, and expanding their impact. In

conclusion, JUSTEM serves as a compelling model for other regions navigating the complex landscape of decarbonisation, stabilisation, transition, and socio-economic restructuring.

This paper illustrates how systemic challenges such as energy poverty [17] can be addressed through inclusive design, rigorous evidence, and strategic alignment with European policy objectives. As coal-dependent regions in Europe and beyond face their transition trajectories, the methodologies and partnerships fostered by JUSTEM offer a powerful model to ensure that no community is left behind in the energy transition.

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