European Union
European Regional
Development Fund

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PARDUBICKÉHO KRAJE

POLICY BRIEF 9

THE CONDEREFF PROJECT

"CONDEREFF - Construction waste management and demolition policies to improve resource efficiency" is an INTERREG Europe project that aims to accelerate policy work on construction waste management and demolition (CDW), improving resource efficiency in partners' countries.

Accordingly, the project aims to support the development of legislative frameworks and strengthen the capacities of public authorities in regulating C&D waste management, public procurement practices, landfill restrictions, recycling facilities, public perception, awareness and acceptance.

To achieve these objectives, the project will exchange experiences and practices, as well as studies on C&D waste, on how project partner regions can move towards adoption and greater exploitation of best practices and measures applied in the field of waste management. The overall objective is to transfer lessons learned to regional policies and action plans.

POLICY BRIEF OVERVIEW

The CONDEREFF project brings together 8 partners from 7 countries to exchange experiences and practices on how to move from existing procedures in the management of CDW to the adaptation and greater exploitation of best practices and measures applied in the field.

This policy brief reports on the main lessons derived from the policy and industry symposium in the context of Activity 3.4 held an online meeting from the virtual studio in Pardubice, Czech Republic (24/2/2021), focusing on how to promote and incentivise construction and demolition waste (CDW) reuse, recycling and recovery. This policy brief aims to present a) the obstacles and challenges to CDW reuse, recycling and recovery and b) a way of stimulating an enabling environment for CDW reuse, recycling and recovery, by presenting, exemplary practices of each category, to highlight the lessons learnt and to provide recommendations for future use in other EU countries.

OBSTACLES AND CHALLENGES TO CDW REUSE, RECYCLING AND RECOVERY

The key challenges and barriers hinder the uptake of CDW reuse, recycling and recovery, derived from the project's studying activities and another relevant literature review.

Excessive/Complicated regulations:
May pose a significant challenge to CDW reuse, while the policy is focusing on circularity and construction and demolition are considered a priority area. Relevant regulations are often complicated and fragmented, on different levels (national or regional), and industry stakeholders are often required to deal with multiple and/or contradictive, administrative authorities.

Lack of governmental support:
Is the most important barrier to the use of recycled CDW, followed closely by the lack of specific 'End-of-Waste' criteria and the lack of supervision and regulations regarding recycling and reuse.

Market and economic factors affecting the activities:
Pose barriers and challenges towards CDW reuse, recycling and recovery. Relevant practices prolong demolition activities and are more labour intensive. The low cost of landfilling (case for many regions) also plays a key role in CDW management decisions. Industry stakeholders purchase materials based on their price and their reliability (virgin materials often are cheaper than secondary ones) and there is often a lack of quality assurance regarding secondary materials.

Limited confidence in the quality and structural properties:
Lack of confidence in the quality and structural properties of secondary materials itself, along with the possibility of hazardous substances content has also emerged as a significant barrier in the uptake of CDW reuse, recycling and recovery. The potential presence of hazardous elements along with the lack of traceability and the limited information available concerning the origin and quality of waste materials raise valid concerns.

Limited reusability in buildings' composition:
Buildings are not usually designed to be deconstructed and there is a lack of knowledge and documentation regarding their components, especially for older constructions. As a result, it is not always possible to predict the composition of CDW resulting from a demolition project. In addition, buildings often contain materials that require expensive separation processes (i.e. sandwich elements).

Unwelcoming local conditions:
Pertaining to both a) the presence of recycling or manufacturing facilities fit to accept and process CDW within a close range, or lack thereof, and b) the cost of landfilling, may have a negative effect on recycling capacity.

Limitations on stakeholder's collaboration:
Within the CDW value chain poses a significant challenge, as it is elementary for the uptake of CDW reuse, recycling and recovery. The circular economy is a multi-stakeholder model and its success largely depends on the communication between value chain links.

EXAMPLE OF GOOD PRACTICES

Based on the STYRIA case study, as an example of good practice, the barriers are in several areas, such as practical issues, technical requirements and legal regulations are listed below.

Challenges in Practice

Complicated responsibilities and interactions at building sites between the followings:

- **Building authority** (municipality) other authorities
- **Contractor** (building, demolition, earthworks companies)
- **Planner** (architects, freelance civil engineer, builder)
- **Waste management** and recycling companies, landfill operators

Technical Requirements

- **Standards** for basic characterisations
- Compliance **testing**
- Contaminants and pollutants **investigations**
- Construction-oriented **specifications** for tendering procedures etc.

Legal Regulations

- Waste Management Act
- Recycling Building Materials Ordinance
- Landfill Ordinance
- Waste Balance Sheet Ordinance
- Ordinance on the Austrian List of Waste
- Act on the Remediation of Contaminated Sites
- Styrian Building Law

Stimulating an enabling environment for CDW reuse, recycling and recovery

Example of good practices

Partner's country: Czech Republic

Name of the practice: ERC-TECH

Practice description:

- ERC-TECH (Effective Recycling Concrete-Technology) brings a revolutionary patented solution to the construction industry that tackles the problem of construction and demolition waste (C&DW),
- ERC-TECH is a global innovator in the development of First-class concrete mixes and concrete construction elements from 100% recycled aggregates which replacing of 100% of natural aggregates (sand and crushed stones),
- ERC-TECH has developed a functional system where the endless process of raw material and material flow utilization is fully realized.

  Further Information: https://www.erc-tech.eu/

Sustainability ERC-TECH technological innovation and know-how includes:

- The main contributions to the Circular Economy according to the requirements of the Agenda 2030 Codex, which meet 9 important UNDP goals
- ERC-TECH solutions process 100% recycled aggregates for concrete production, bringing significant CO2 reduction for much-needed environmental impact
- After the lifetime of buildings, products have ended the entire material / raw sources use process to be repeated to meet the LCA principles in the construction industry return to concrete products.

  Further Information: https://www.erc-tech.eu/

TACKLING THE PROBLEM OF C&DW

Efficient technological process of concrete production which tackles the problem of C&DW:

Envi-Beton does not contain any natural materials such as sand, crushed or mined aggregates (100% replacement of sand and gravel).

Case studies:

Envelopa Office Centre:

- The typical floor will offer 2,700 m^2 of top-quality office space of a high standard. Space itself allows maximum flexibility allowing to expect the spatial division of offices.
- 6 aboveground floors with one large area of about 15 thousand m^2.
- 160 parking spaces available in three basements.

Suitable for the modern office of the highest standard with perfect facilities and convenient transport connections.

Čertův vršek Residence:

- Unique residential project: Involve 39 new apartments, mainly featuring large, multi-room apartments.

RECOMMENDATIONS FOR FUTURE DEPLOYMENT

The recommendations are directed towards a) relevant policy actors and policy-makers on a national, regional and local level, and b) industry actors including construction and demolition companies, CDW management and recycling companies, construction materials manufacturing industries, professional bodies, and business support centres.

Recommendations towards policy actors:

- ✓ Introduction of financial instruments (incentives and disincentives) for the use of recycled CDW materials in construction and renovation project, the promotion of relevant training within the construction industry and the increase of landfill taxes and disposal costs.
- ✓ Waste audits should become mandatory for all types of construction and demolition activities, leading to more effective control of the output CDW materials.
- ✓ Simplification of regulations, making them more accessible and comprehensible to all interested parties, without the need to resort to a large number of laws regulating the same aspects.
- ✓ Reduction of the number of administrations governing waste management, so as to reduce unnecessary bureaucracy which may lead to contradictions.
- ✓ Investment in research and development (R&D), through public funding, aiming at the characterisation of CDW and the establishment of procedures that guarantee the quality of secondary materials leading to their standardization and improving their marketability.

Recommendations towards industry actors:

- ✓ Use of efficient selective dismantling processes for the separation of unwanted fractions from recyclable CDW aiming to improve the marketability of secondary materials by addressing the barriers pertaining to a) the (potential) presence of hazardous elements and b) the (perceived) quality of the secondary materials.
- ✓ Adoption of pre-demolition audits and, in the future, material passports so as to support the registration of the type and volume of materials in the existing building stock, thus improving CDW management.
- ✓ Development of standardised demolition/deconstruction procedures by industry actors and commitment to follow them.
- ✓ Involvement of actors across the value chain (e.g. construction sector) in the development of new sorting and recycling facilities, so as to make sure that there is a market for the recycled materials.

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About us

The CONDEREFF project brings together 8 partners from 7 countries to exchange experiences and practices on how to promote green growth and circular economy through sustainable constructions & demolitions (C&D) waste management.

CONDEREFF is an INTERREG Europe project and is co-funded by the European Regional Development Fund (ERDF)

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