



The APPRICOD project

Construction and Demolition Plastic Waste Management in Europe

« Presentation of the APPRICOD project and the Partners »

*Caroline Piersotte
ACR+*



Outline of the talk

- The APPRICOD project
 - Objectives
 - Partnerships
 - Activities:
 1. Study cases
 2. Pilot-projects in 4 European cities/regions
- Discussion





APPRICOD project- Objectives



1. To optimise the **selective collection** of **plastic** waste from C&D sites
 - > pilot-projects to assess various selective collection scenarios, based notably on the existing recycling practices
2. To assess the **costs** associated with the selective collection of plastics from C&D waste scenarios
 - > costs calculated in pilot-projects
3. To draw **conclusions and recommendations** for
 - C&D sector
 - Local and regional authorities
 - Plastics industry
 - > guide, workshops, leaflet, toolbox, ...



APPRICOD project - Partnership

4 stakeholders for C&D waste management:

1. **C&D sector** : CCB-C, BBRI and EDA
2. **Local and regional authorities** : ARC (E), Ancona (I), LIPOR (P) et IBGE (B); ACR+
3. **Plastics producers** (APME - PlasticsEurope, ECVM2010 - Vinyl 2010 et EUPC)
4. **Plastics recyclers** (EUPR)

... not to forget the EU co-funding (interest for the European Waste policy)





APPRICOD project - Partnership

Stakeholders : varied and complementary

1. **C&D sector** : scientific and technical expertise concerning C&D waste management activities, ...
2. **Local and regional authorities** : in charge of the public waste management;
ACR+ : expertise on waste management and a large experience of exchanging and disseminating information related to this matter
3. **Plastics industry** : expertise concerning the technical aspects of the recycling

=> each of them represents an important element of the recycling chain





APPRICOD project - 1. Study case

1. Plastic waste in the EU: qualitative and quantitative aspects - C&D waste

UE-15 : 180 million T of C&D waste per year

UE-15 : 480 kg/inh/year of C&D waste

UE-15 : 31% reused or recycled / 69% landfilled





APPRICOD project - 1. Study case

1. Plastic waste in the EU: qualitative and quantitative aspects (2) - C&D waste

Construction and demolition sector is the third largest user after packaging and household/domestic application

Plastics consumption in the construction and demolition sector will increase to reach 8 million T in 2010

The amount of plastic C&D waste is estimated to reach 2 millions of T in 2010 (compared to 1,1 today)












APPRICOD Project - 1. Study case

FORECAST OF PLASTICS WASTE FROM BUILDING AND CONSTRUCTION, WESTERN EUROPE 100s

Unit = x 1000 tonnes/year

	YEAR 1995	YEAR 2000	YEAR 2010
 Floor and wall coverings	274	285	370
 Pipes and ducts	98	240	310
 Insulation	84	132	408
 Profiles	72	115	188
 Lining	50	84	150
 Windows	6	12	65
 Fitted furniture	250	330	458
TOTAL	841	1 178	1 975



APPRICOD Project - 1. Study case

2. Benchmarking study on C&D plastic waste management in EU

- The European context
- Presentation of experiences in Germany, Austria, Denmark and the Netherlands
- Presentation of several pilot-projects on collecting or recycling plastic C&D waste





APPRICOD project - Benchmarking NL, DK, D, AT

2. Benchmarking study on C&D waste management in EU - Experience of Germany, Austria, Denmark and the Netherlands

-> Why these 4 countries?

- « Frontrunners »
- Diversity in the tools used (legal, economic, voluntary agreements)
- Sorting and recycling systems developed for various type of C&D plastic waste





APPRICOD project - Benchmarking NL, DK, D, AT

2. Benchmarking study on C&D waste management in EU - legal tools
 - Germany: interdiction to landfill mixed C&D waste or recovered waste
 - Austria: idem + obligation of waste recovering and sorting C&D waste if > certain quantity (> 20T land, > 20T concrete, > 5T wood, >2T metal, >2T plastics, ...)
 - Denmark: interdiction to landfill incinerable waste
 - The Netherlands: interdiction to landfill recyclable C&D waste





APPRICOD project - Benchmarking NL, DK, D, AT

2. Benchmarking study on C&D waste management in EU - economic tools

- Germany: no landfilling tax but costs to landfill are high
- Austria: idem
- Denmark: landfilling tax
- The Netherlands : landfilling tax (for C&D waste: 83 €/T), producers responsibility mechanisms





APPRICOD project - Benchmarking NL, DK, D, AT

2. Benchmarking study on C&D plastic waste in EU - **voluntary agreements**

- Germany: voluntary agreement with construction sector. Objective: -50% C&D waste landfilling between 1995 et 2000; specific voluntary agreement for PVC
- Austria: voluntary agreement, including also quality standards for recycling products and exchange grant for waste
- Denmark: voluntary agreement with good practices and environmental management system for demolition activities
- The Netherlands: voluntary agreements in the framework of producers responsibility systems





APPRICOD project - 2. Pilot-projects

LA/RA

Common approach in 2 phases:

1. Contacts with collection and recycling firms
2. Contacts with contractors



⇒ Choice of **MINIMUM 3** collection and sorting scenarios.

A scenario is a combination of:

- collection means (big bags, containers, bags, ...)
- sorting on site/sorting in centre
- sorting in various fractions
 - Inert waste vs. mixed fraction (plastics, wood, glass, metal, ...)
 - Plastics: packaging vs. other plastics
 - Plastics: PVC vs. other plastics
 - Plastics: hard plastics vs. soft
 - Plastics: separation of various polymers (PVC, PE, PP, ...)
 - ...





APPRICOD project - 2. Pilot-projects

Particular approach per region:

- **Brussels:** taking into account typical constraints for an urban-region (sites and waste treatment facilities) => **CONTRACTORS APPROACH**
- **Barcelona:** really good knowledge of local recycling sector / search to justify a good C&D waste management on basis of favourable conditions on local market => **MARKET/COSTS APPROACH**
- **Lipor:** expansion of selective collection system for C&D waste management set up by the public authorities; system granted by the public authorities to compensate its financial charge with the resale of quality sorted waste => **PROFITABLE PUBLIC SERVICE APPROACH**
- **Ancona:** few waste skills on the province level, few plastics, general national framework (national) not encouraging. 1 sorting centre as intermediate for pilot-projects => **WASTE SECTOR APPROACH**





APPRICOD project - Discussion points

(cf. main stakeholders for C&D plastic waste management)

- How to help the contractor ?
- What is the function of the recycling industry ?
- What is the function of the public authorities (at various power levels)?
- What is the influence of the market mechanisms ?





APPRICOD project - Discussion

How to help the contractor?

- Various collection scenarios should be proposed taking into account parameters such as :
 - ✓ the available space on site
 - ✓ the type of work (demolition, renovation, new construction)
 - ✓ the phase of the work (there are more packaging in the finishing phase)
 - ✓ The number of sub-contractors
- Training and communication are necessary success factors (cf. toolbox)
- Integrated approach for the selective collection of all the materials or specific support for all plastics (because of its heterogeneous character)?





APPRICOD project - Discussion

Role of recycling industry?

- The existence of a C&D plastics recycling market is a necessary condition in developing selective collection of plastics from C&D waste,
- ... but the recycling market need a regular reliable and continuous supply before developing
- (cf. transport costs) Support local market on recycling ?

=> What are the possibilities ?





APPRICOD project - Discussion

Role of public authorities?

AT THE LA/RA LEVEL

- Is it an environmental issue that public authorities should deal with? Further studies (data's)? « Waste » approach vs. « products » approach?
- How to channel the market? How to ensure a better collaboration between stakeholders?
- What kind of tool(s) to favour (legal, economic, voluntary agreements, producers responsibility, ...)?
- Is it a « SD » challenge? (development of a sorting/recycling industry; development of regrouping center; job creation)

AT EU LEVEL

- How to establish a « level playing field » for recycling?
- How to make the costs for different practices more transparent?





APPRICOD project - Discussion

What is the influence of the market mechanisms?

- A costs comparison is extremely complicated , costs « without APPRICOD » are difficult to obtain
- Transport costs (distance) have an important influence in the comparison between recycling and landfilling
- What influences the demand for recycled products ?
- How will be the situation in 2010, in 2020, ... ? Will the raw material market have such an influence that recycling will become more interesting?





APPRICOD project - More info?

- Guide « Towards Sustainable Plastic Construction and Demolition Waste Management in Europe » (in preparation)
- European Workshop « Towards Sustainable Plastic Construction and Demolition Waste Management in Europe » - Brussels, 24 April 2006
- "Toolbox" for the C&D sector (in development)



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