

'It is vital, when encountering a serious problem, not merely to try to solve the problem in itself but to confront and transform the processes that gave rise to the problem in the first place.'

*David Harvey. Justice, Nature and the Geography of Difference*



# Best Performing PAYT Systems at the Local Level

Presentation to ACR+ International Conference Waste Management Planning and Funding, Dublin, 17-20 May 2006

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# Outline

## What strategies might be the best ones?

- What are we looking at?
- Types of charging system
- Experience
- Costs and Benefits (study for OECD)
- Do's and Don'ts

# What are we Looking At?

## 'DVR' charging systems

- In many countries (UK), and in many municipalities within other countries, citizens simply pay flat rates
  - May vary with physical size of house, house price, household numbers
  - No relation to waste behaviour
- Some charging systems vary according to waste set out but the service is restricted to refuse only
  - Charge varies but more for cost recovery
- Other systems charge in a way which varies with level of use of the service, and charges different rates for different service components
- Differential and Variable Rate (DVR) charging systems
- **Charges are for Recovery of Costs**

# Types of Scheme

Containment, administration and charge base

- Sack-based schemes can use:
  - Sale of special sacks
  - Sale of tags / stickers to place on sacks
  - Volume-based charges
- Container-based schemes can use:
  - Subscriptions for varying bin sizes
  - Sale of tags
  - Read-only / read + write microchips
  - Volume, frequency and weight
- Mixes of containment possible – no containment(?)
- Multi-occupancy – tokens to open containers

# Types of Scheme

Don't forget containerparks / civic amenity sites (etc.)

- Charging changes the routing of waste

# Case Study 1 – Landkreis Schweinfurt

## Volume, Frequency and Weight-based Scheme

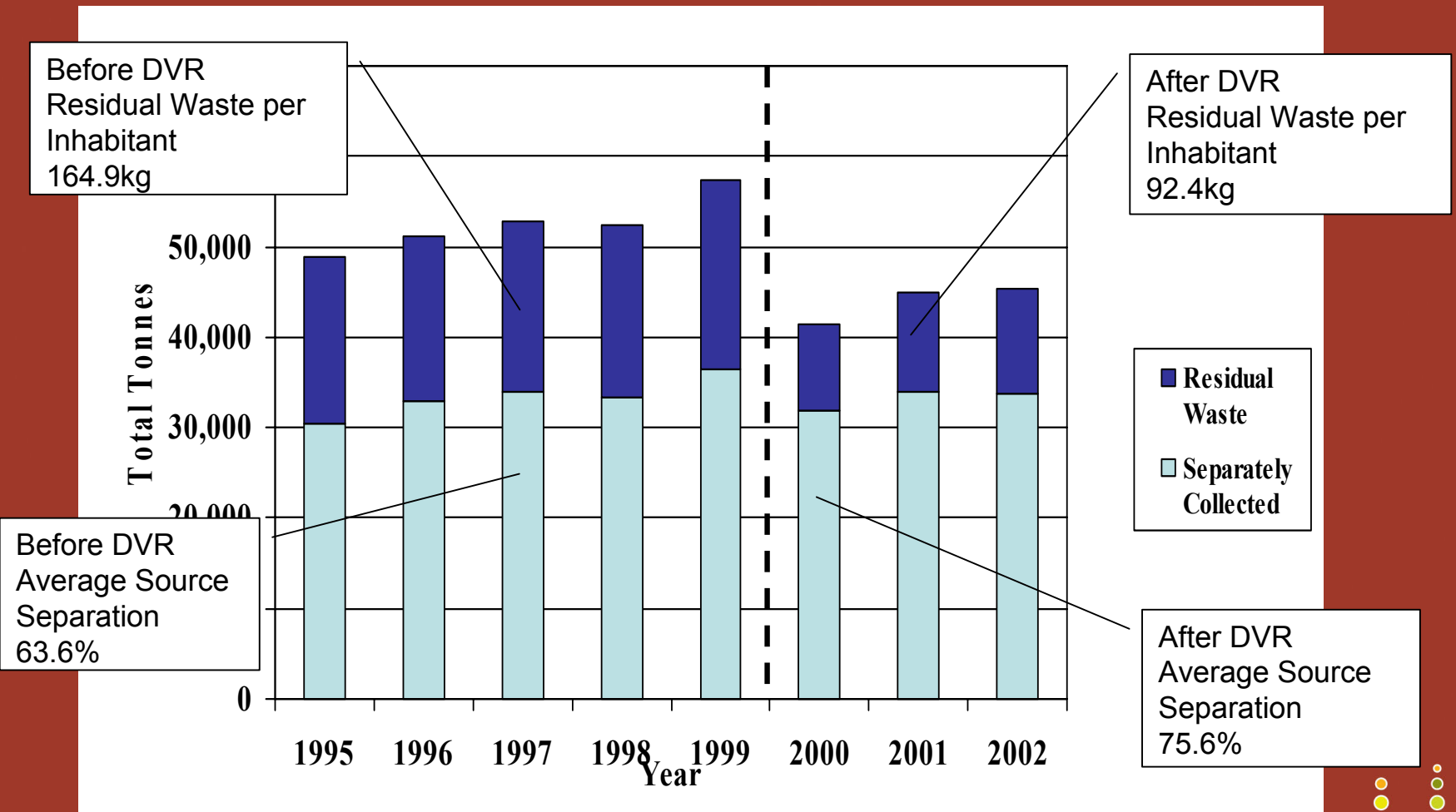
- Free Door-to-door Separate Collection of:
  - Packaging Materials excl Glass (DSD)
- Charged Door-to-door Separate Collection of:
  - Biowaste (food and garden waste)
    - €0.20 per emptying (frequency)
    - €0.15/kg (weight)
- 160 Bring Sites (one per 725 inh.)
  - Paper and Card
  - Glass
  - Textiles
  - Packaging
- Other Systems (chipping, etc.)

# Case Study 1 – Landkreis Schweinfurt

## Volume, Frequency and Weight-based Scheme

- Residual Waste Collection:
  - Volume
    - 120l - €8 per month
    - 240l - €16 per month
  - Frequency
    - €0.20 per emptying (frequency) (same as biowaste)
  - Weight
    - €0.25/kg (weight) (167% of biowaste)

# Case Study 1 – Landkreis Schweinfurt



# Case Study 1 – Results

	Low Damage Costs	High Damage Costs
Net Change in Private Cost per Household	-€ 5.96	-€ 5.96
Net External Benefit Per Household	-€ 8.38	-€ 15.86
Balance of Costs and Benefits Per Household	-€ 14.34	-€ 21.82

# Case Study 2 – IVAGO (Gent and Destelbergen)

## Frequency Based / Bag Based

- Free Door-to-door Separate Collection of
  - Paper and Cardboard
  - Glass
- Charged Door-to-door Separate Collection of
  - Non-glass Packaging - €0.12 per 60 l sack
  - Biowaste
    - urban                    €0.25 per 15l sack  
                                  €0.50 per 30l sack
    - rural                     €0.62 per pickup, 40l bin  
                                  €0.99 per pickup, 60l bin  
                                  €1.98 per pickup, 120l bin  
                                  €3.97 per pickup, 240l bin
- Network of Containerparks

# Case Study 2 – IVAGO (Gent and Destelbergen)

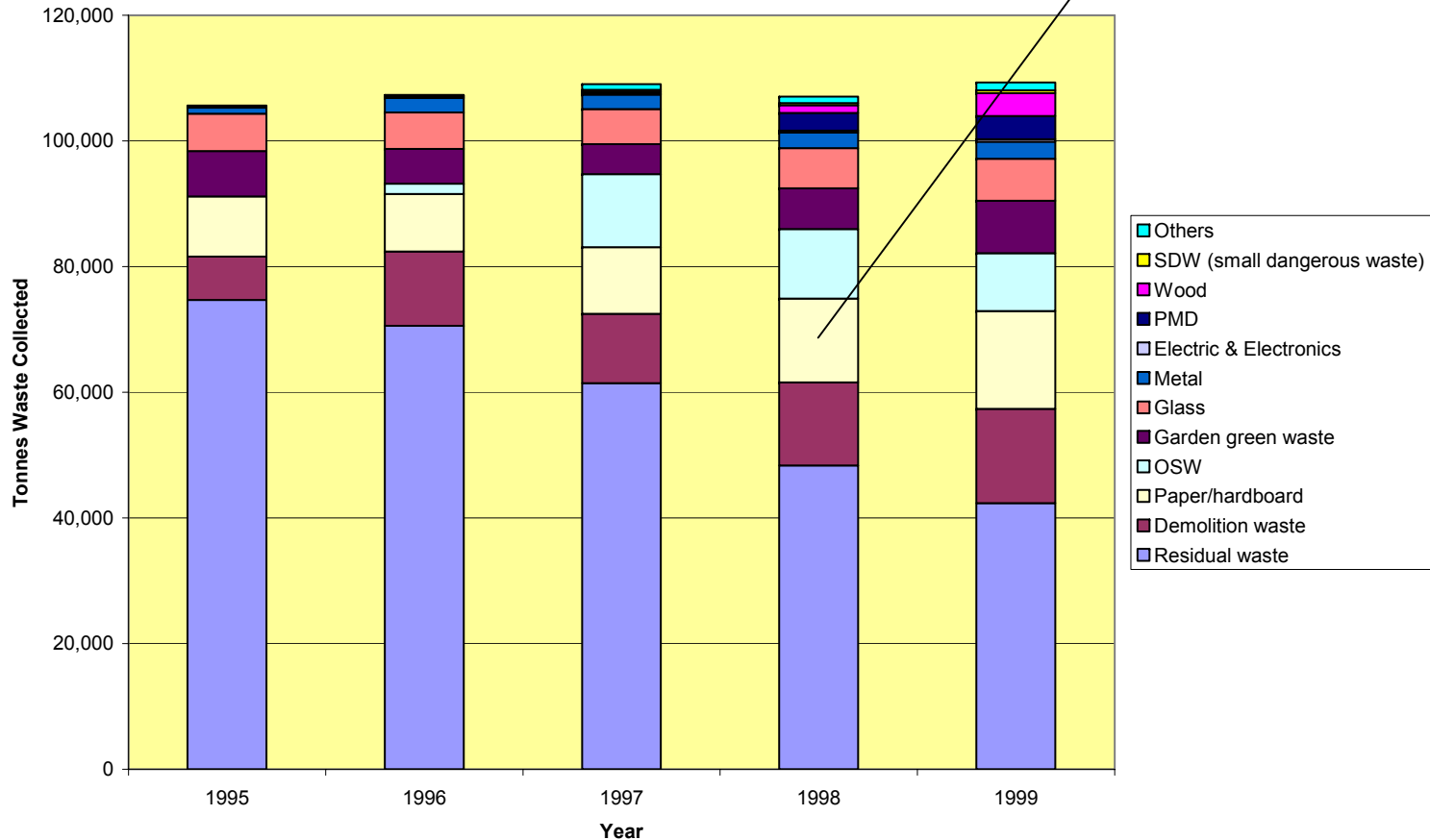
## Frequency Based / Bag Based

### – Residual Waste

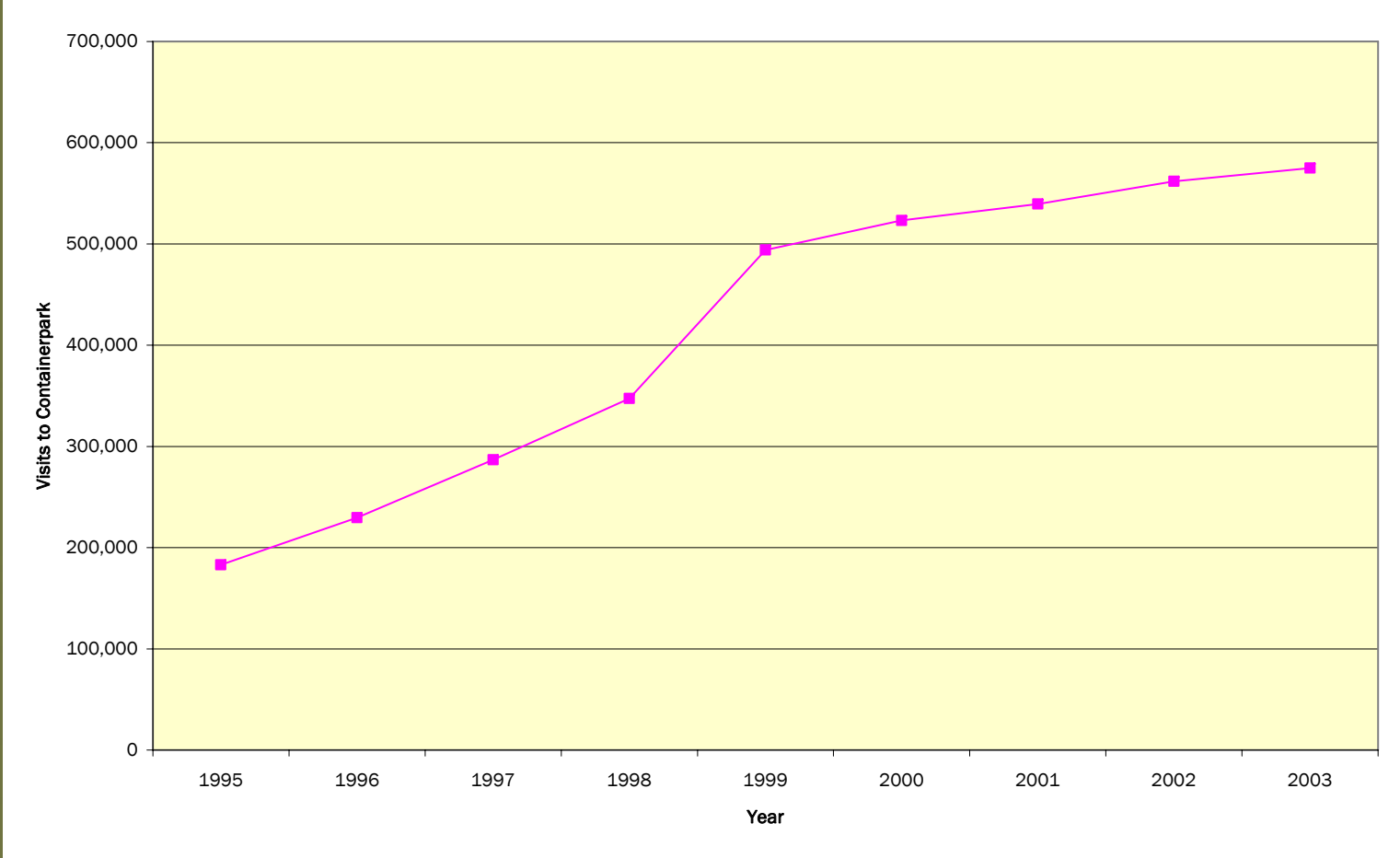
- urban
  - €0.37 per 15l sack
  - €0.62 per 30l sack
  - €1.24 per 60l sack
- rural
  - €0.87 per pickup, 40l bin
  - €1.24 per pickup, 60l bin
  - €2.48 per pickup, 120l bin
  - €4.96 per pickup, 240l bin
- around 125% biowaste charge

# Case Study 2 – IVAGO (Gent and Destelbergen)

Charging Scheme  
Introduced 1998



# Case Study 2 – Containerpark Visits



# Case Study 2 – Results

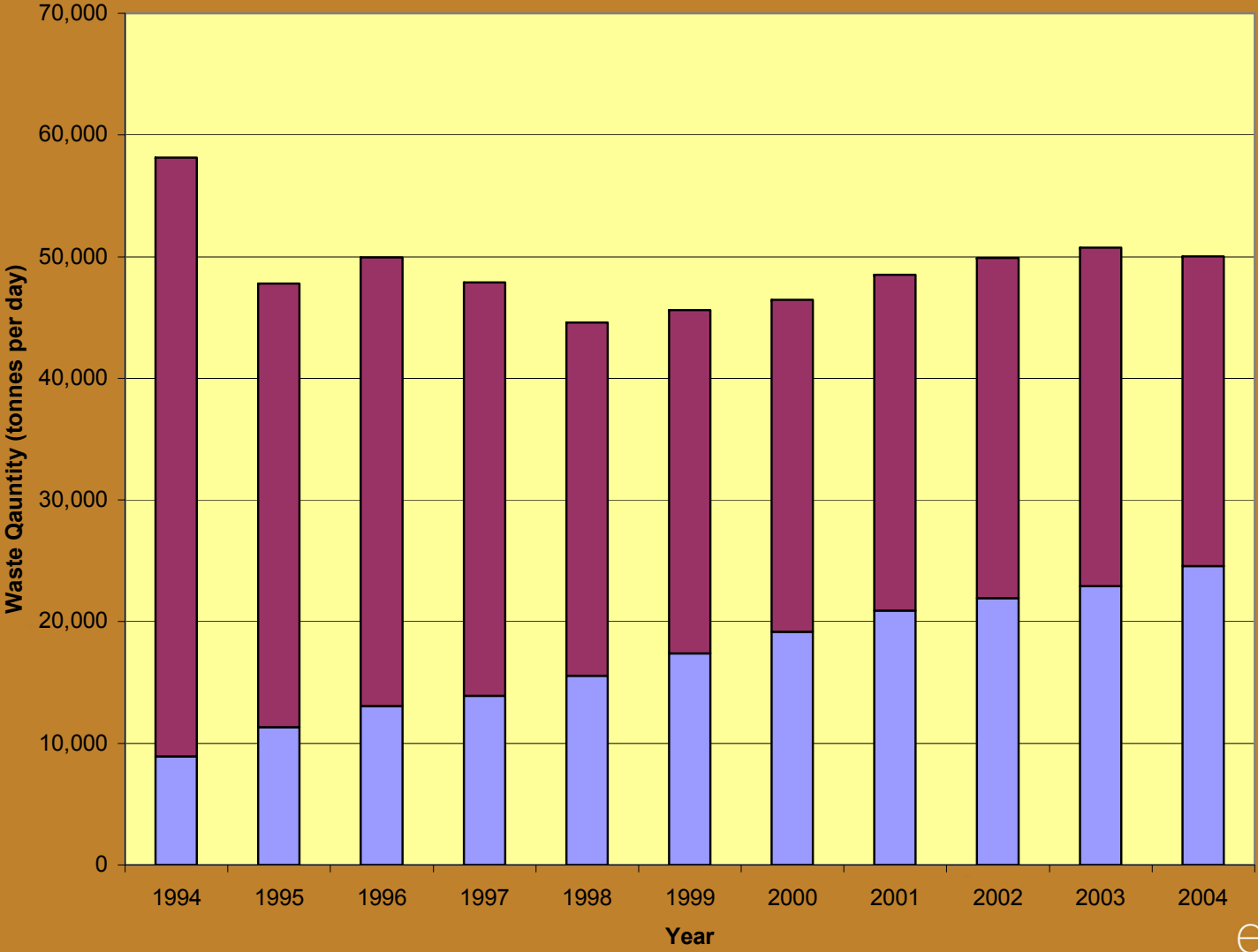
	25% effect		50% effect		100% effect	
	Low Damage Costs	High Damage Costs	Low Damage Costs	High Damage Costs	Low Damage Costs	High Damage Costs
Private Costs	€ 2.87	€ 2.87	-€ 2.08	-€ 2.08	-€ 12.97	-€ 12.97
External Costs, Time Excluded	-€ 2.61	-€ 5.28	-€ 5.21	-€ 10.56	-€ 10.43	-€ 21.12
External Costs, Time Included	-€ 0.84	-€ 3.06	-€ 3.44	-€ 8.34	-€ 8.66	-€ 18.90
Balance of Costs and Benefits Per Household, Time Excluded	€ 0.26	-€ 2.41	-€ 7.29	-€ 12.64	-€ 23.40	-€ 34.09
Balance of Costs and Benefits Per Household, Time Included	€ 2.03	-€ 0.19	-€ 5.52	-€ 10.42	-€ 21.63	-€ 31.87

# South Korea

## Volume Based Weight Fee (VBWF, bag-based system)

- VBWF Introduced Nationwide in January 1995
- Free Door-to-door Separate Collection of:
  - Paper, Cans, Bottles, Metals, Plastics
  - Food Waste (more recently)
- Charged Door-to-door Separate Collection of:
  - Bulky Waste – (sticker system)
- Residual Waste
  - Fees Vary By Municipality
  - Average Price for 20l Sack – approx 350 won (2001)

# South Korea



Residual Waste  
Waste Recycled / Composted

# Implications for Local Authorities

## Implementation

- Likely to Have Greatest Effect Where:
  - Effect on Private Costs is High
    - Differential Between Residual Waste Treatment / Disposal and Separate Collection plus Sorting / Treatment Moves in Favour of Separate Collection
    - Charging Structure Influences Waste Management Costs Positively
    - Management Cost is Generally High (maximal benefit from source reduction)
  - NB - Prices (links to internalisation mechanisms) – Fixed Contracts May Influence Marginal Savings on Disposal

# Implications for Local Authorities

## Implementation

- External Benefits are High
  - Stimulation of Recycling and Waste Reduction is Positive
  - Systems are Convenient (kerbside collections) – Reduces
    - Household Time Input
    - Likelihood of Illegal Dumping
- Other Benefits (beyond CBA)
  - Commercial Waste Moves into Appropriate Channels
  - Better Data
  - More Efficient Crews
  - Transparency of Costs

# Policy Implications

## National

- No *Need* to Make Mandatory
  - Counterproductive Results? (hhlds not linked to system, tourism)
  - Less Likely to be Counterproductive Where Service Configuration is Stipulated
- Unwise to Prevent – Potential Benefits Foregone
  - Likely to be Highest Where:
    - Costs of Residual Waste Treatment / Disposal Exceed (or will exceed) Costs of Separate Collection (and sorting / treatment)
    - (NB Local Authorities Interested in ‘Prices’, Not Costs)
    - Supporting Other Policy Objectives (e.g. EPR)
    - Can Support DVR Schemes Through Implementing Internalisation Mechanisms (and reversing perverse ones)

 thank you

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