

From waste to waste prevention - from cost to benefit



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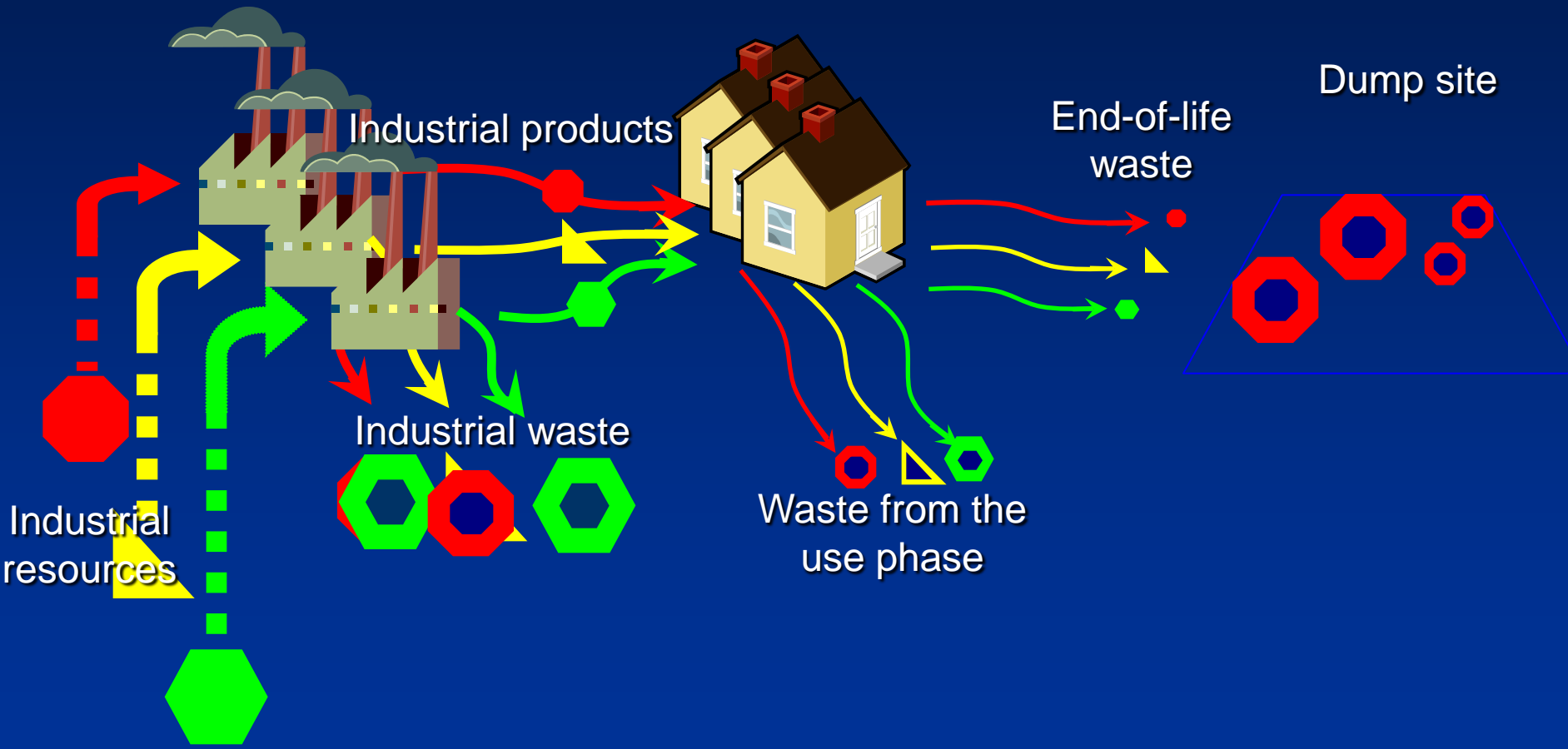
The traditional use of resources

The waste hierarchy

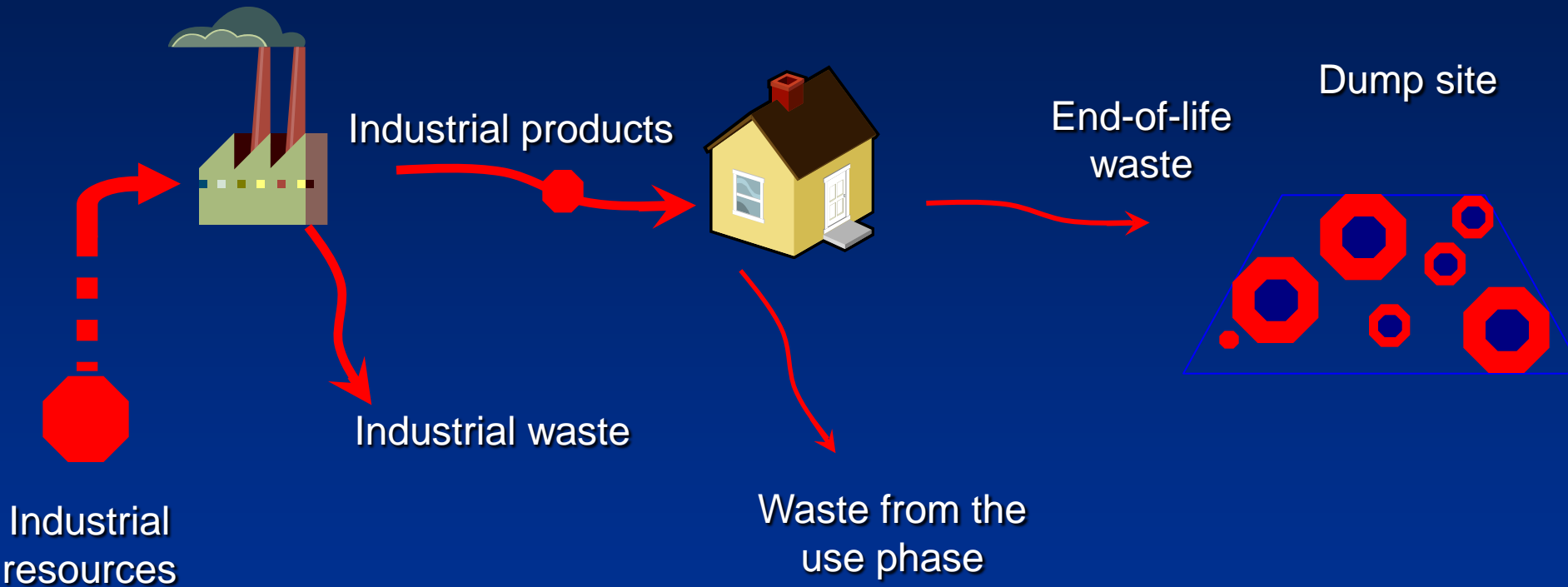
Options for interventions in industry

Options for interventions in the household

The traditional use of resources



The traditional use of resources



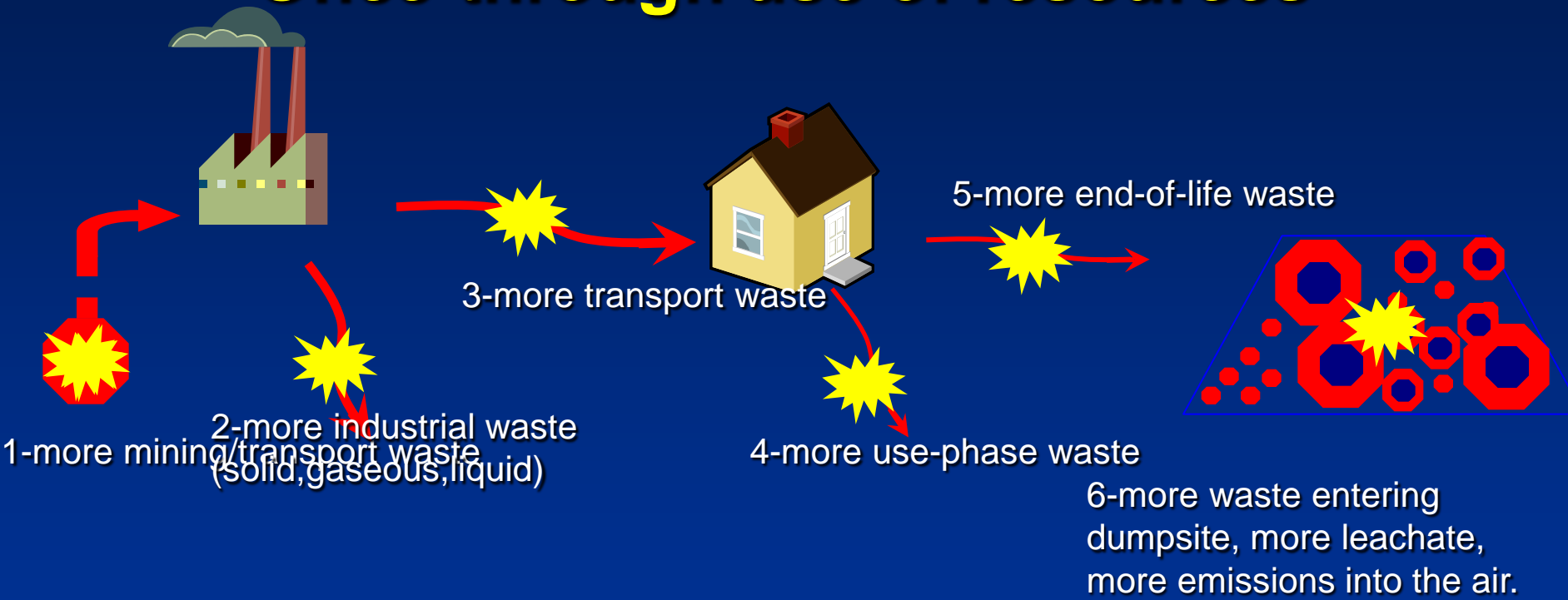
The traditional use of resources is of the “once-through” type

because the material flow goes uni-directional

from resource ... through the use phase ... to waste



Disadvantages of the Once-through use of resources



For the same “service”, once-through resource use is very material intensive

Disadvantages of the Once-through use of resources

**... and thus expensive
(economically unattractive),
environmentally damaging and
negatively affecting quality of life!
use is very material intensive**

For the

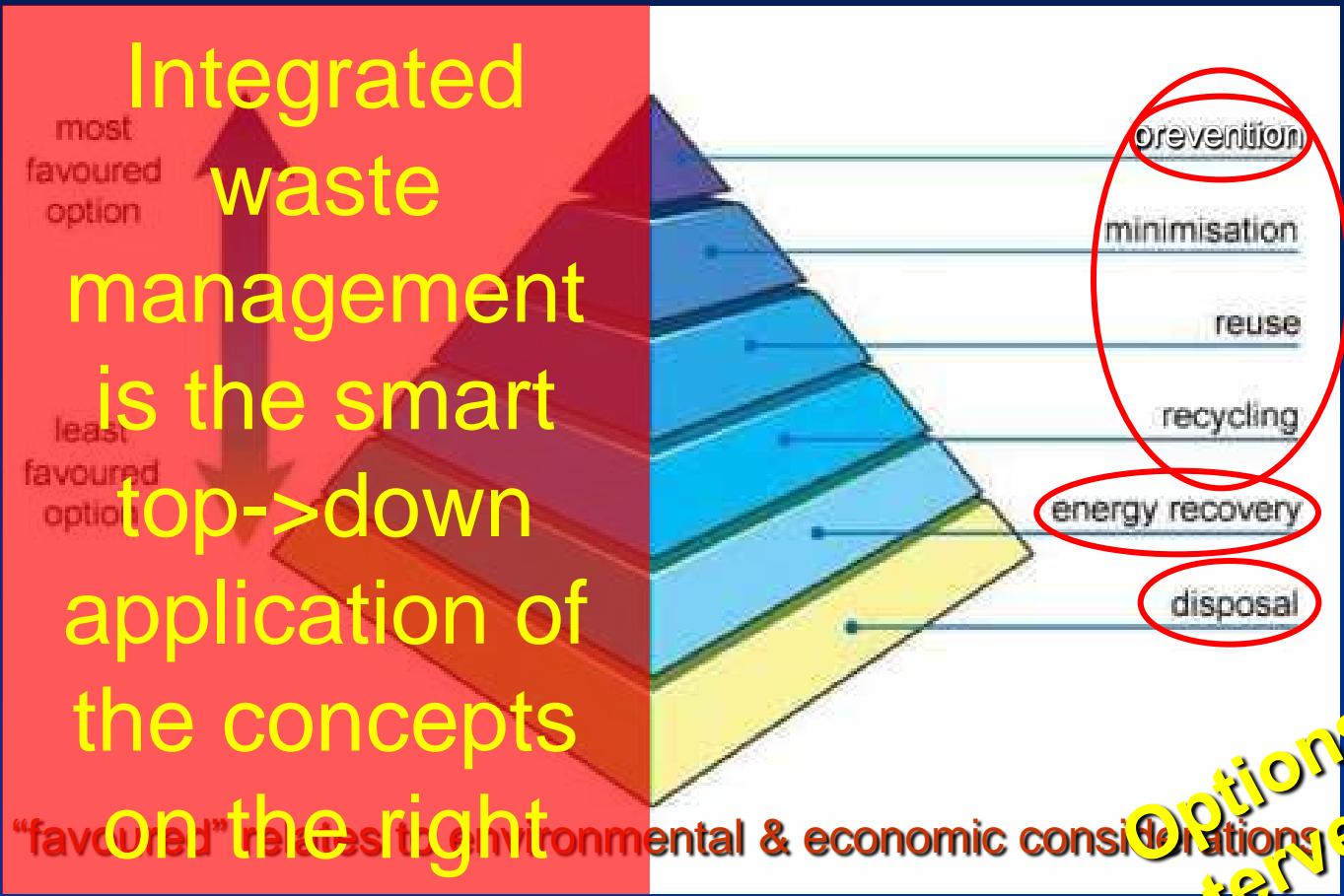
source

The improvement of the quality of waste management should be a priority of any government for economic, environmental, public health and quality of life reasons



Accept and implement the rules of *cleaner production* and *integrated waste management*

The "Waste Hierarchy"



Options for interventions

here: waste prevention

An activity that prevents waste at its source, which includes prevention

- reducing the amount of material used,
- reducing the toxicity of the material used,
- using waste products in its original form,
- does not include something that is not really needed,
- does not include repairable, refillable, or durable products that result in a longer life,
- does not reduce resources,
- does not cause nuisance or hinder,
- does not negatively affect the environment.

Options for interventions

Advantages:

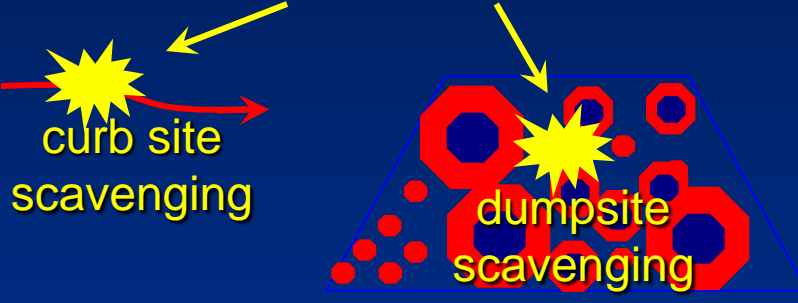
- employment
- local economy
- resources

Disadvantages:

- worker health/safety
- disadvantaged group
- site disturbance

Scavenging (1)

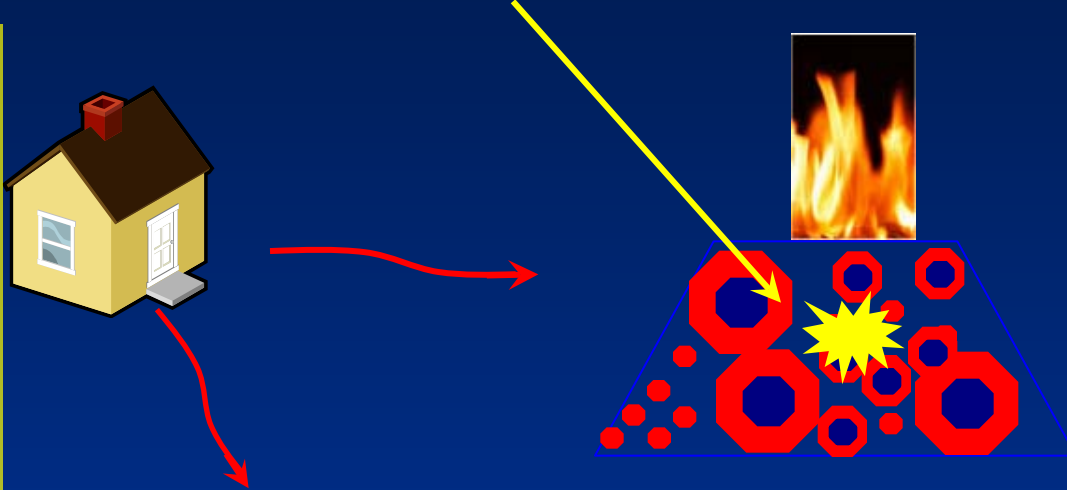
informal picking of specific valuables from waste



Landfill gas exploitation (2)

- Advantages:**
- employment + income (local economy)
 - quality improvement dumpsites
 - contribution towards global warming reduction

- Disadvantages:**
- a good first step but may distract from real waste management improvements
 - potentially hazardous



Capturing of naturally forming biogas ($\approx\text{CH}_4$) for energy generation or sale of CERs

At-source separation (3a)

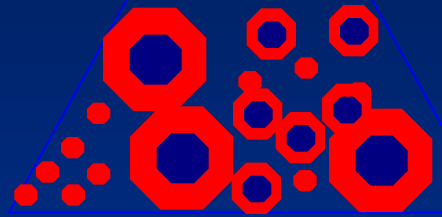
the sorted offering of waste for collection

Advantages:

- cleaner materials/job
- closer to processing
- less waste/transport
- awareness raising

Disadvantages:

- more waste types
- more storage-/transport



collection at household level

collection at central location



At-source separation (3b)



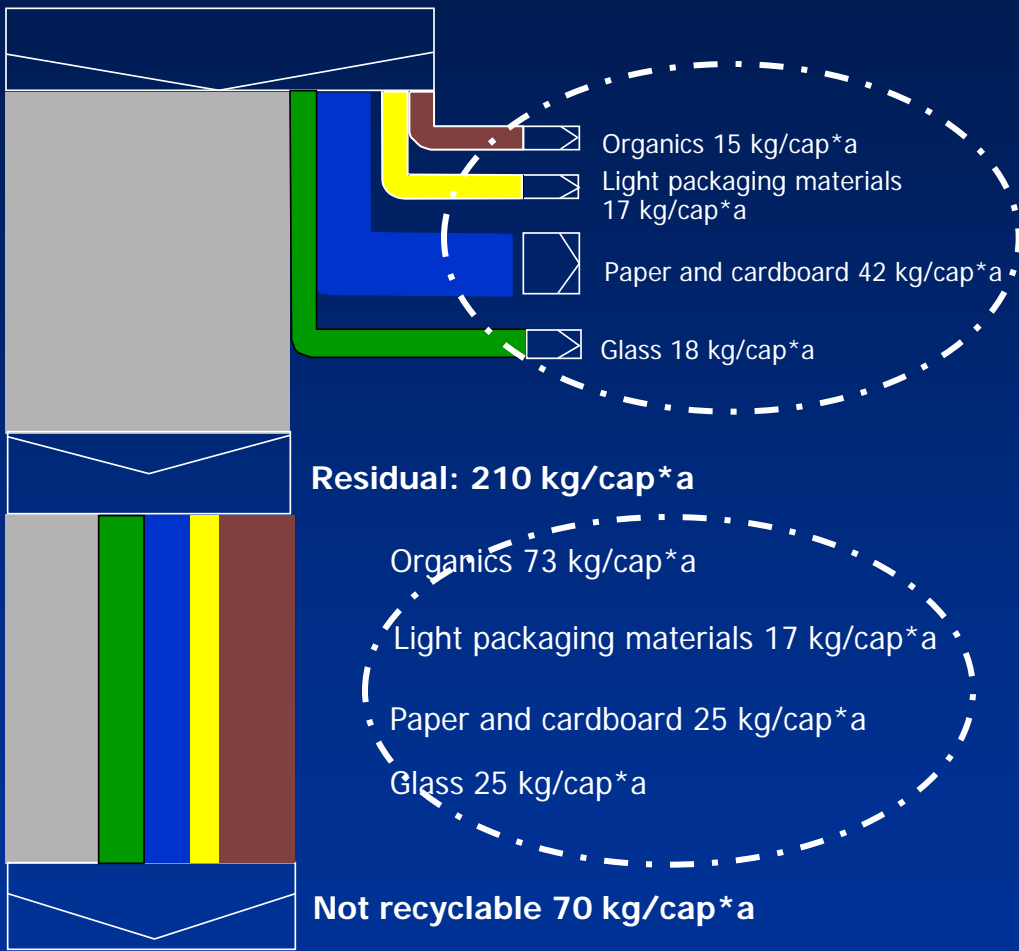
Efficiency varying 10-80%

glass packaging waste paper and cardboard organic waste residual waste



At-source separation (3c)

Generated: 300 kg per capita year



Household waste flows in Berlin (Germany)

Separately collected for recycling

Potentially recyclable

Basis: Berlin 2003

(Source: Prof. Rotter)