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ELV– TECHNICAL AND FINANCIAL ASPECTS

22 January 2024, Tbilisi

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Main topics of the presentation

- Live- cycle thinking of vehicle
- Extended Producer's responsibilities
- Main stakeholders – duty and obligations
- Targets for recycling, recovery and re-use
- Obligation of owner
- Monitoring and reporting of targets

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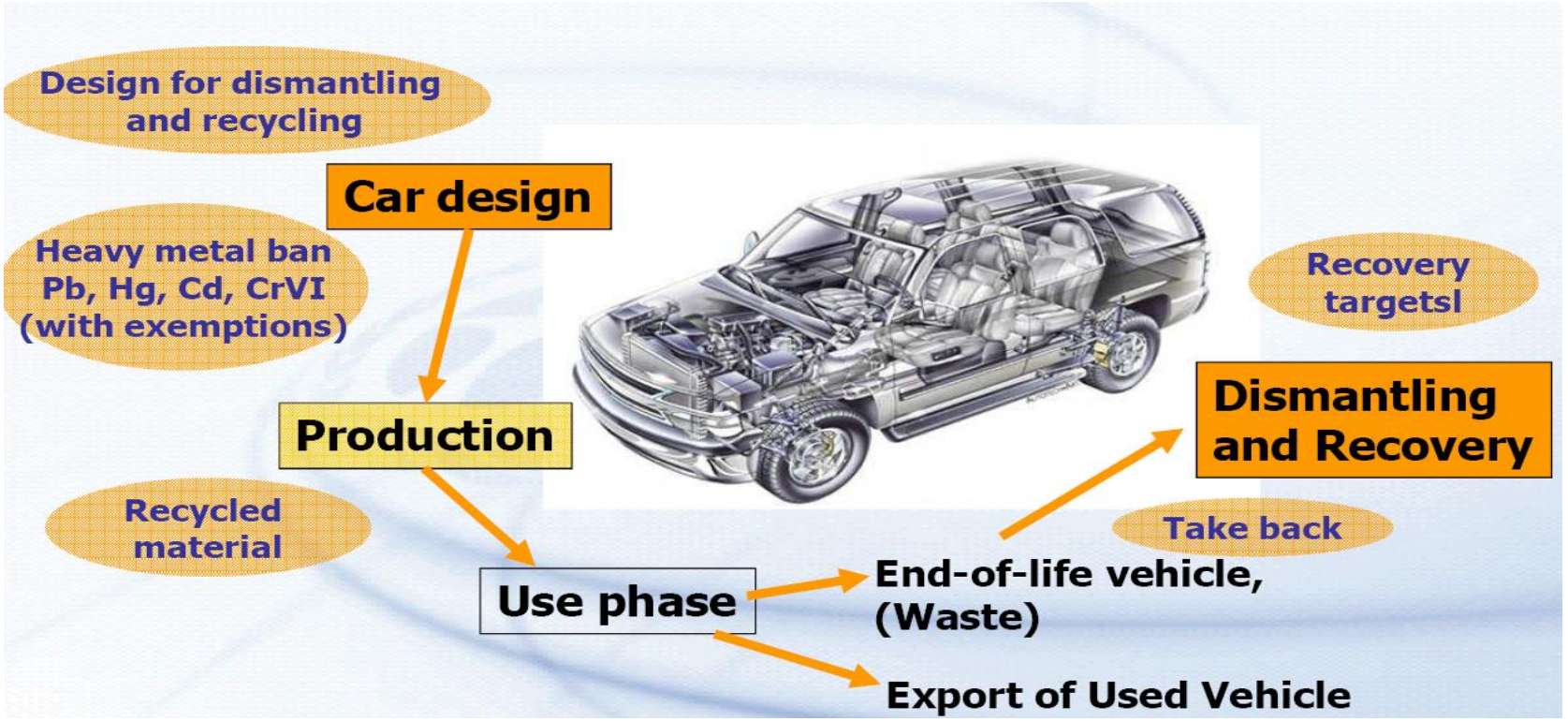
Solution: life-cycle thinking, producer responsibilities



Source Federal Statistical office, Germany

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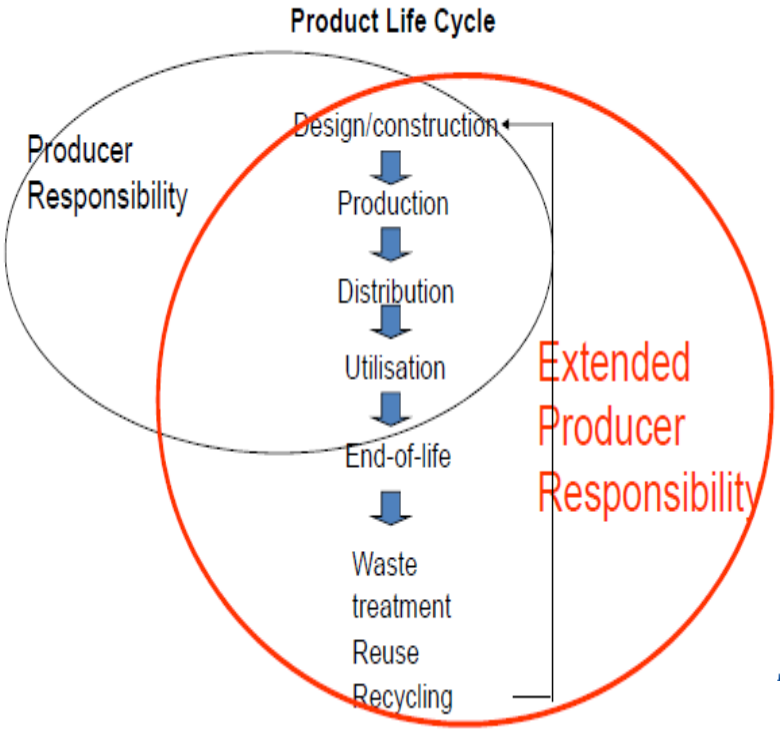
Extended producer responsibilities principle



Extended producer's responsibilities:

'extended producer responsibility scheme' means a set of measures taken by Member States to ensure that producers of products bear financial responsibility or financial and organisational responsibility for the management of the waste stage of a product's life cycle.

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Principle of state policy for EPR on EoLV:

- Set up the targets for collection, targets for recycling and recovery as well the main standards for EoLV treatme
- Define in a clear way the roles and responsibilities of producers and all relevant actors involved
- Ensure that a reporting system is in place to gather data on the products placed on the market
- Ensure that end users and treatment installations are provided with necessary information
- Give the options –State fund, Producer's responsibilities organization and Individual system
- Set up the rules for technical and financial responsibilities of PRO/IP
- Granting of responsibilities of producers and authorization of PRO
- Mechanism for accounting, reporting, monitoring and controls of producers, PROs, IPS, and operators who carr out collection and treatment
- Constructive cooperation between government, existing operators and treatment, municipalities

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Stakeholders

- Producers
- Government
- Consumers
- Municipalities
- PROs/Individual EPR
- Dealers
- Waste treatment operators
- Waste collection operators
- NGOs/Consumer and environment protection

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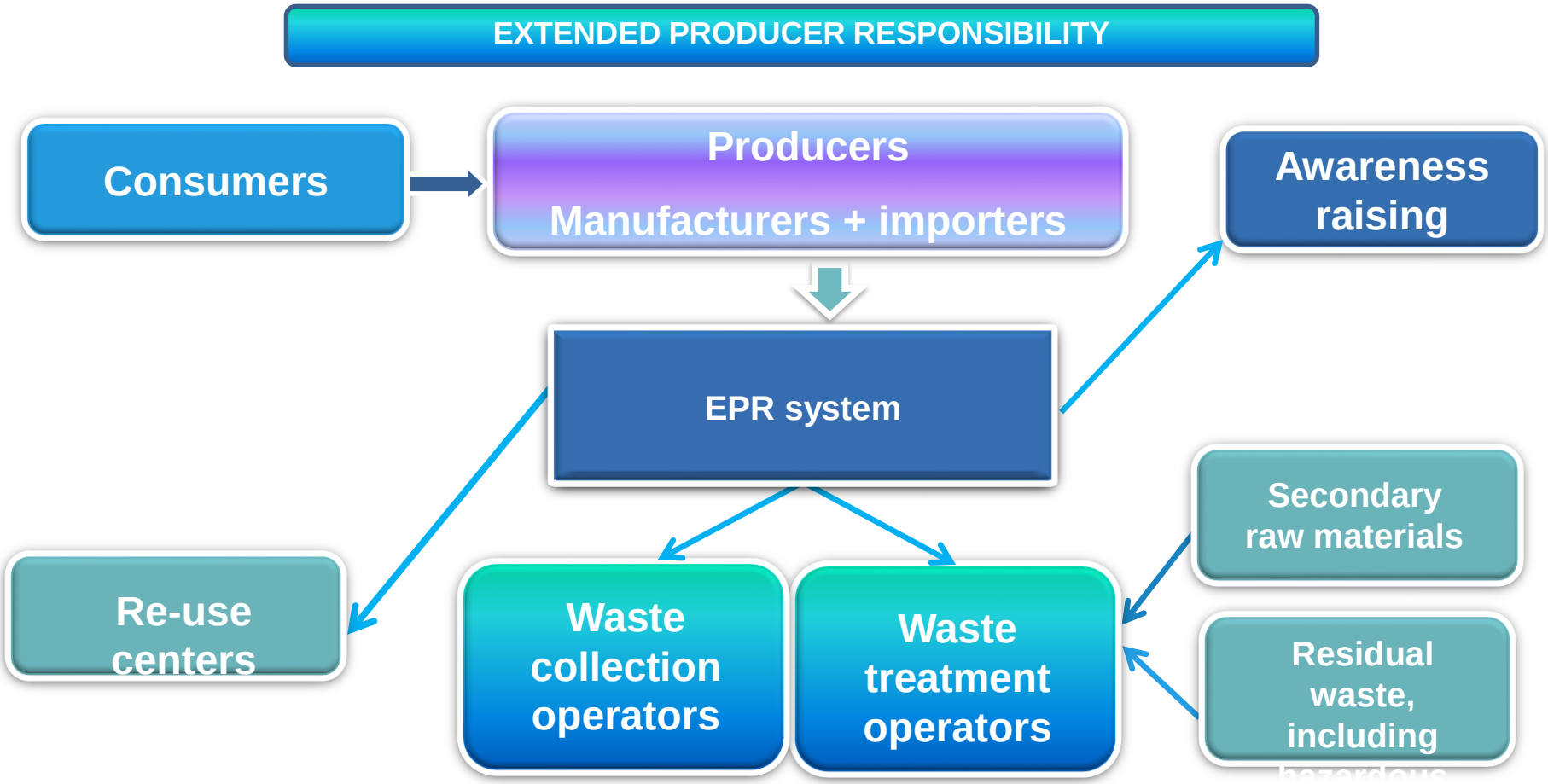

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Targets for re-use, recycling and recovery

- **Targets for re-use, recycling and recovery**
- **From 1 January 2006, for all EoLV:**
  - the re-use and recovery shall be increased to a minimum 85% by the average weight of vehicles per year
  - reuse and recycling shall be increased to a minimum of 80% by the average weight per vehicles in one calendar year
  - exception of vehicles manufactured prior to 1 January 1980, for which the level of reuse and recovery is set at 75% and the level of reuse and recycling at 70%
- **At the latest by 1 January 2015 for all EoLV:**
  - re-use and recovery shall be increase to the at minimum 95% by the average weight vehicles.
  - the reuse and recycling shall be increased to a minimum of 85% by the average weight per vehicles in one calendar year

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Relevant definitions for recycling and recovery

'recovery' means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.

'recycling' means the reprocessing in a production process of the waste materials for the original purpose or for other purposes but excluding energy recovery. Energy recovery means the use of combustible waste as a means to generate energy through direct incineration with or without other waste but with recovery of the heat;

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Collection

1. Member States shall take the necessary measures to ensure:
   - ✓ that economic operators set up systems for the collection of all generated EoLV
   - ✓ the adequate availability of collection facilities within their territory.
2. Member States shall take the necessary measures to ensure that all end-of life vehicles are transferred to authorised treatment facilities.
3. Member States shall set up a system according to which the presentation of a certificate of destruction is a condition for deregistration of vehicle
4. Issuing the certificate of destruction by treatment facilities or dealers or collectors on behalf of an authorised treatment facility does not entitle them to claim any financial reimbursement

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Average composition of vehicles

Material/waste fraction	2002 kg/ 1 ton	2006 kg/1 ton	2015 kg/1.1 ton
Ferrous metal	680	680	650
Non-ferrous metal	80	80	90
Plastic and process polymers	100	100	120
Tires	30	30	30
Glass	30	30	30
Batteries	13	13	13
Fluids	17	17	17
Textile	10	10	10
Rubber	20	20	20
Other	20	20	20
Total	1000	1000	1100

Source : EC

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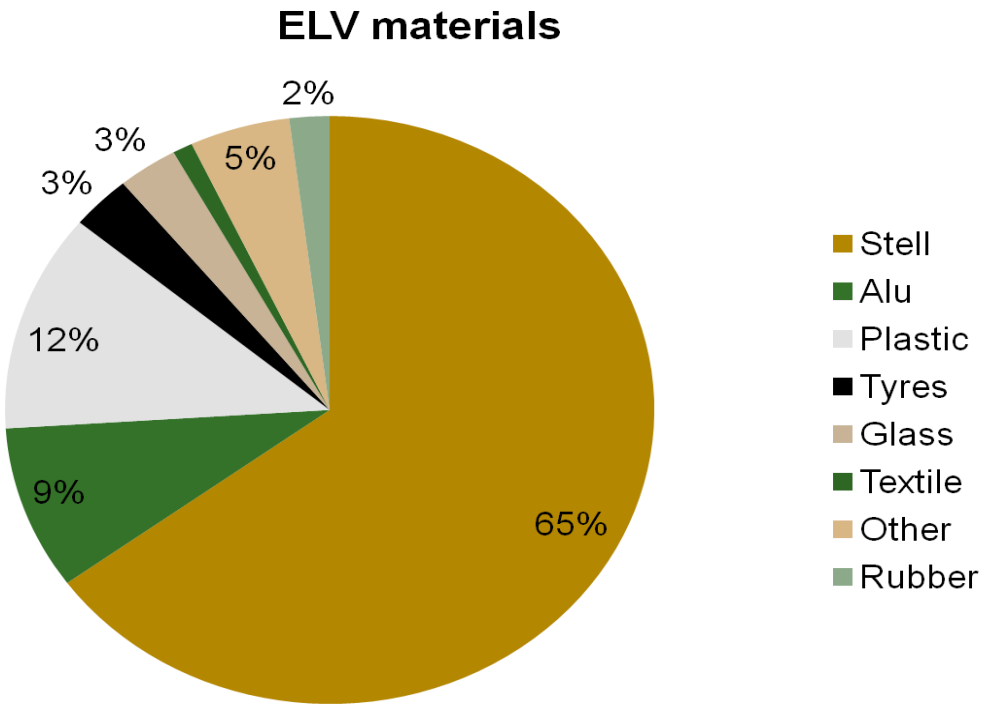
EoLV -composition



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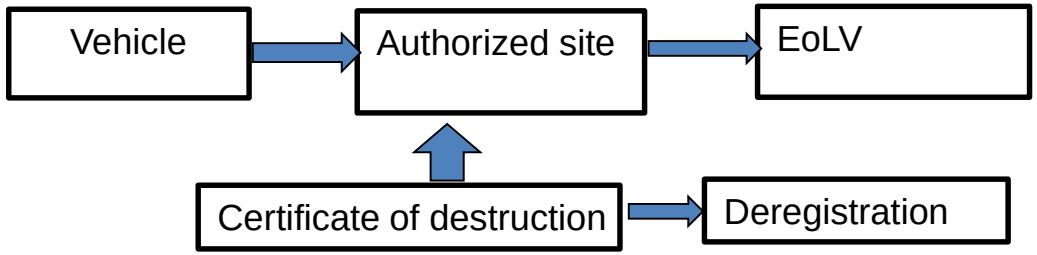
Obligation of owner in the stage end of life

Source : Makmetal



- **Owner of vehicle deliver EoLV to the site of ATF**
- **Owner of the vehicle shall be supplied with a certificate of destruction (COD), issued by the operator of the authorized treatment facility**
- **COD shall be presented as condition for deregistration of vehicle**

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ELV-natural, premature, Abandoned

Delivery to the site for Collection and storage

Delivery to the site for depollution and dismantling Issuance of CoD

Parts for re-use

Depollution:
Battery 13, fluids 17kg, liquefied gas tank
Airbags, oil filters,
Hg switches, other Hg containing element

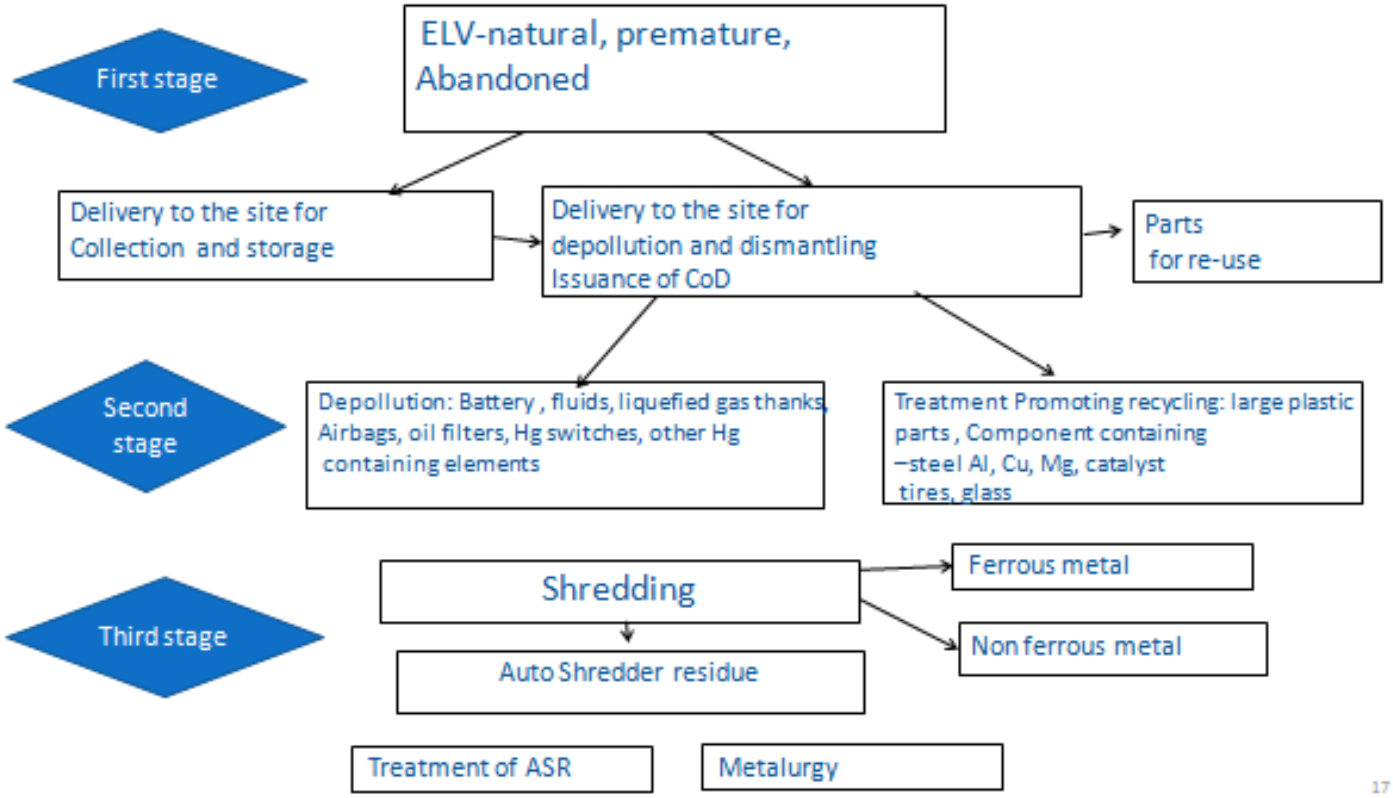
Treatment Promoting recycling: large plas
Parts 90-110 kg, Component containing
–steel Al, Cu, Mg 80 -100kg, catalyst 0.9,
tires 30 kg, glass 25 kg

Shredding

Ferrous metal

Auto Shredder residue

Non ferrous metal



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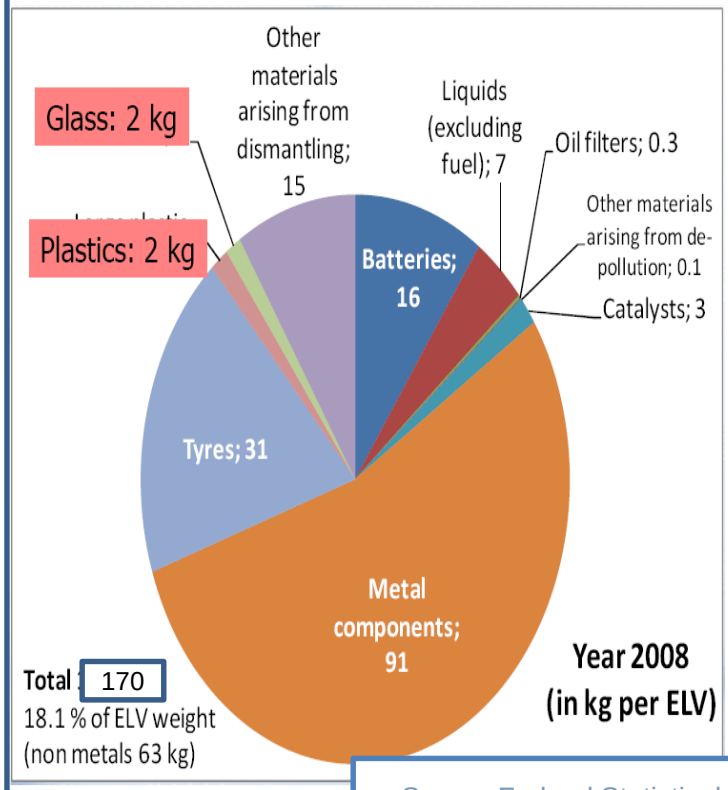
Re-use and recovery from depolution and dismantling

Average **weight** of the **vehicle** -1000kg
Weight of materials and parts from **depollution and dismantling** -170 kg
1000-170=830 kg
For shredding (body shell) - 830kg, 20% ASR
Metal fractions **weight after schredding**-664kg
ASR – 166 kg
Targets:
664 kg +170kg=834 kg
Post shredder treatment-6% -33.2kg



Source Federal Statistical office, Germany

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Material flows in Shredding process

Materials entering a shredder

- End-of-life vehicles
- Other metal containing scrap

Materials exiting a shredder

- Ferro-metal fraction
- Non-Ferro metal fraction
- Shredder light fraction

Materials going for final disposal

- Incineration without energy recovery
- Landfill

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Advantages of shredded scrap when used in an electric furnace

- High yield of hot metal as a ratio of input shredded scrap
- The good density means there are less back charges in order to reach furnace capacity
- Less electrode breakage
- Longer furnace lining life
- Less sulphur in the hot metal
- Less phosphorus in the hot metal
- Less electric consumption per ton of hot metal
- Less air pollution

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Decision 2005/93/EC - harmonize calculation of the targets

- **Total weight of EoLV:**
  - **Determination of individual average weight of ELVs,**
  - **Determination of number of ELVs ,**
- **Materials from de-pollution and dismantling of ELV, arising in Serbia (in tone per year)**
- **Weight of the de-polluted and dismantled end-of-life vehicle (body shell) and average non-metal fraction in the body shell**
- **Materials from shredding – ferrous scrap, non-ferrous material – aluminum, copper, zinc, lead, ASR, others (in tons per year) of ELV, arising and treated in MS.**
- **Total quantity of re-used, recycled and recovered materials from EoLV arises– in Serbia and exported**

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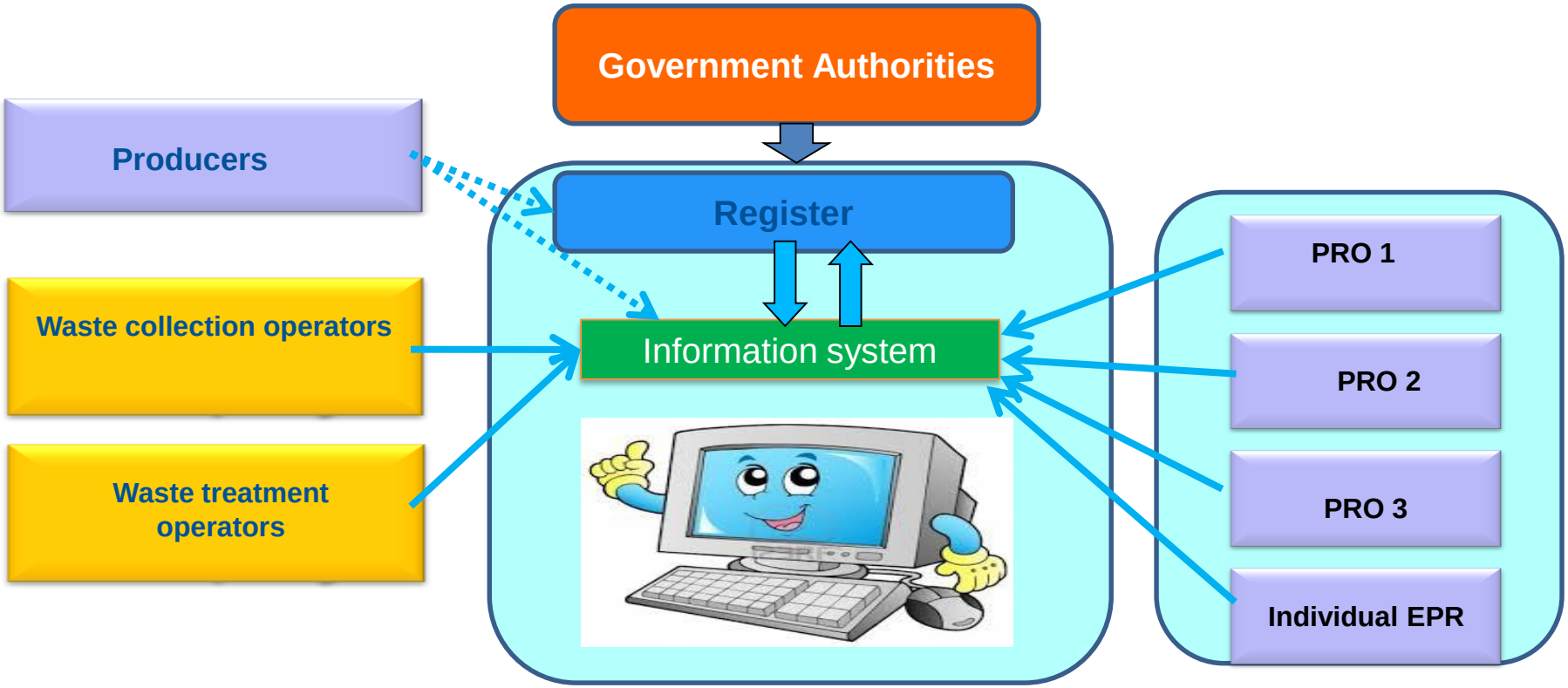

M.Krasteva 2024

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