



This Project is funded by the European Union and the Republic of Turkey

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy

EuropeAid/140562/IH/SER/TR

EU experiences in developing National Strategy and Action Plan on Waste and Resource Management

Case study from the Netherlands

Freek van Eijk – Holland Circular Hotspot

Activity 1.2.1. Circular Economy Training
11th May 2022 - Antalya, Türkiye

FREEK VAN EIJK

- Managing Director Acceleratio
- CEO Holland Circular Hotspot
- Vice Chair Circular Biobased Delta
- Co-chair Coordination Group EU Circular Stakeholder Platform



Previous Functions

- Board member Dutch Waste Management Association (VA)
- Board Member Society and Enterprise Foundation (SMO)
- Director Strategy, Public Affairs and Development SUEZ
- SHERPA EIP Raw Material



HOLLAND CIRCULAR HOTSPOT

DUTCH CIRCULAR SOLUTIONS FOR GLOBAL CHALLENGES

Companies



EXPORT PRODUCTS
AND SERVICES

Knowledge
Institutes



EXCHANGE
KNOWLEDGE
AND INNOVATION



Government
Cities



EXCHANGE
GOVERNMENTAL
BEST PRACTICES

HCH connects and accelerates the transition to a CE

INTRODUCING THE NETHERLANDS

LIMITED SPACE & RESOURCES: A LIVING LAB FOR THE CIRCULAR ECONOMY

Population 17 mln.



GDP 866 B USD
IMF (18th)

40.000 km²
488 inh/km²

High Population Density

NL without flood protection



- Water Management created our collaborative DNA
- high groundwater table, urbanised society & an agricultural superpower forced us to solve environmental issues early on
- Global Innovation Index 2021: 5th

A resource dependent country

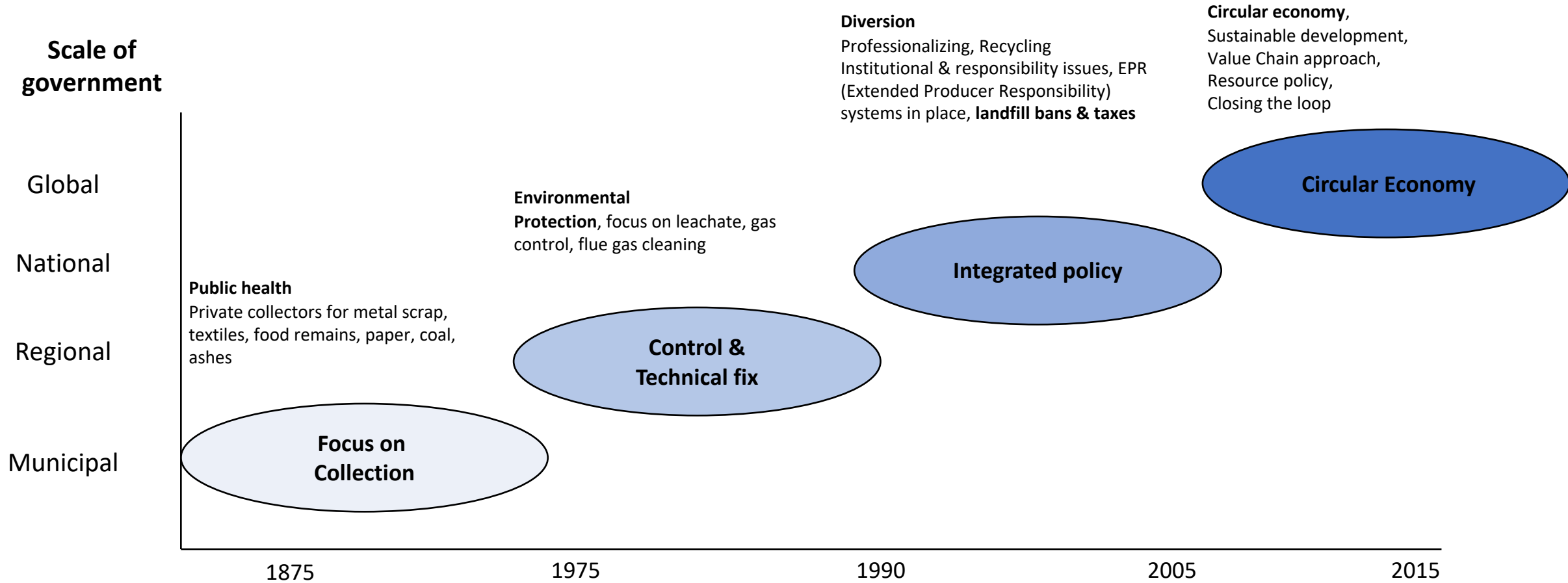


With limited space & limited natural resources it makes sense to find local, scalable solutions to close resource cycles

Historic Perspective on Waste Management in the Netherlands

TRANSITION FROM WASTE POLICY TO CIRCULAR ECONOMY IN THE NETHERLANDS

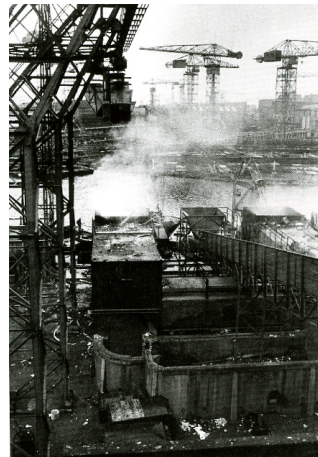
UPSCALING OF WASTE MANAGEMENT OVER TIME: BOTH IN POLICIES AND WASTE MARKETS



FAST DEVELOPING ECONOMIES CAN LEAPFROG TOWARDS A CIRCULAR ECONOMY

WASTE TREATMENT IN THE 1980'S

Air pollution



Ever growing
landfills

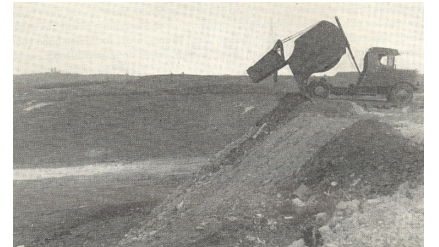
Water pollution



ANNEX 1: SITUATION WASTE MANAGEMENT 1990

Ever growing Landfills, air pollution, water pollution

- Rapidly growing waste volumes
- 157 landfills, not well equipped; capacity for only a few years
- 5 Waste to Energy plants closed because of dioxin emissions
- Low recovery rate of all the waste together (55%)
- Low separate collection rate of household waste (16%)
- No cooperation between the three layers of government
- Lack of data on waste; a small scaled, inefficient waste sector

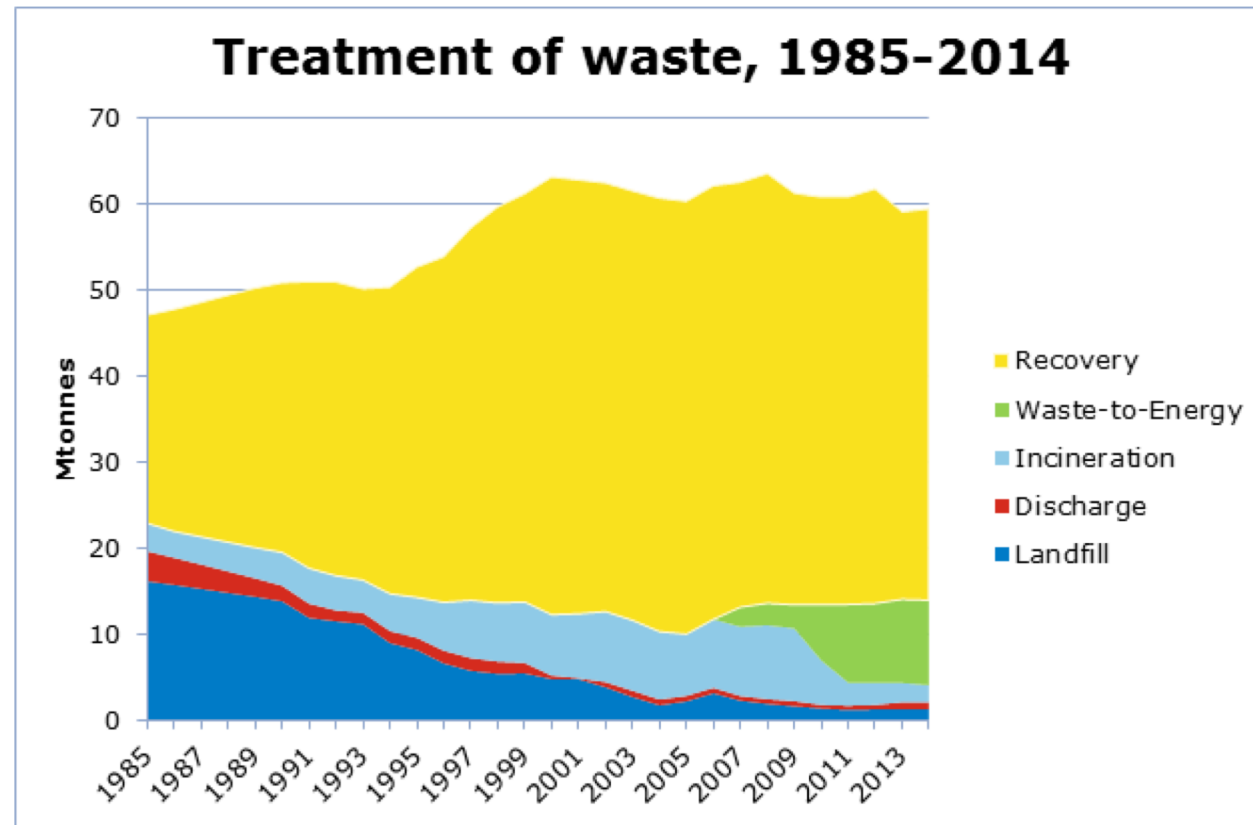


ANNEX 2: SITUATION WASTE MANAGEMENT 2010

- Decreasing waste volumes
- 22 landfills; capacity sufficient for >20 years, sufficient incineration capacity
- 83% recovery rate for all waste streams
- Separate collection of 52% household waste
- Cooperation all layers of government in planning
- Implementation & enforcement EPR
- High public acceptance and satisfaction
- National waste tracking & monitoring systems
- Professional waste sector; competitive market



RESULTS OF NL WASTE MANAGEMENT



Nowadays 83% of all waste is recycled, < 1% is landfilled

CRITICAL SUCCESS FACTORS

WASTE MANAGEMENT IN GENERAL

Content:

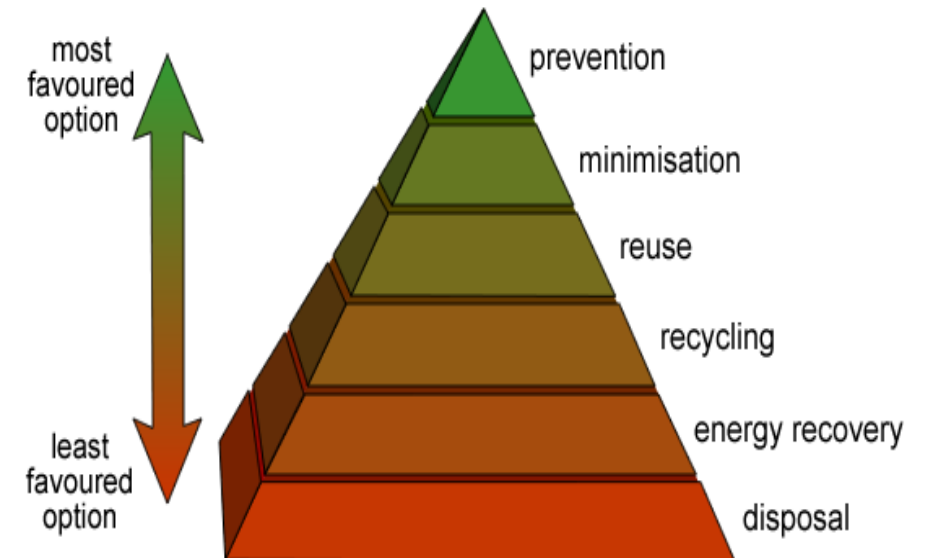
- Waste hierarchy (since 1979)
- Producer responsibility (EPR)
- Minimum standards
- Landfill and incineration taxes/landfill bans
- Separate collection of waste streams

System:

- Adequate planning system
- (Municipal) Waste tax that covers all costs
- Cooperation between government authorities
- Involvement of waste management industry & NGO's
- Consensus on data
- Monitoring & enforcement system

Performance NL (overall waste)

2-3% landfilling, 81% Recycling; 17% WtE

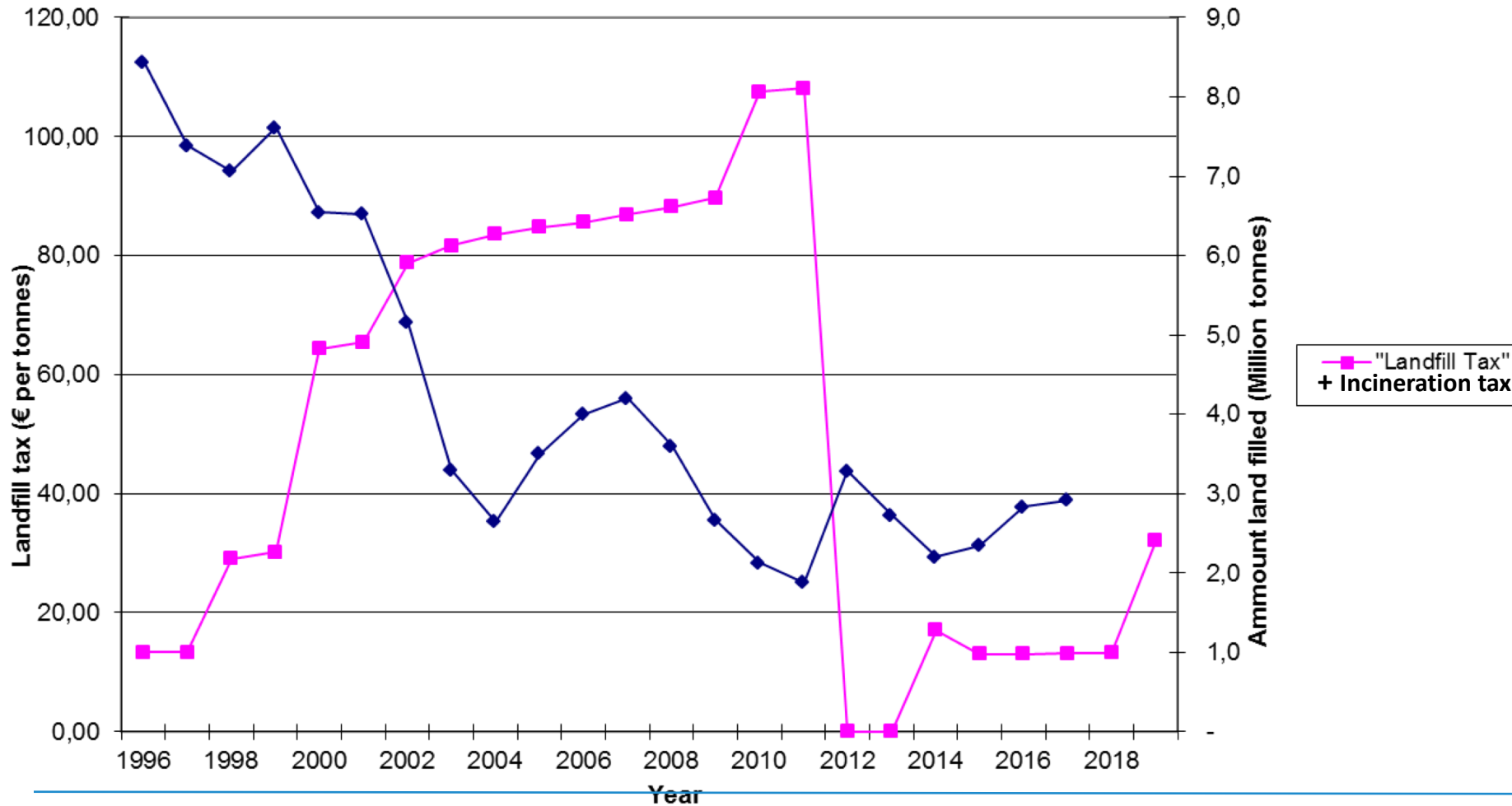


DUTCH WASTE

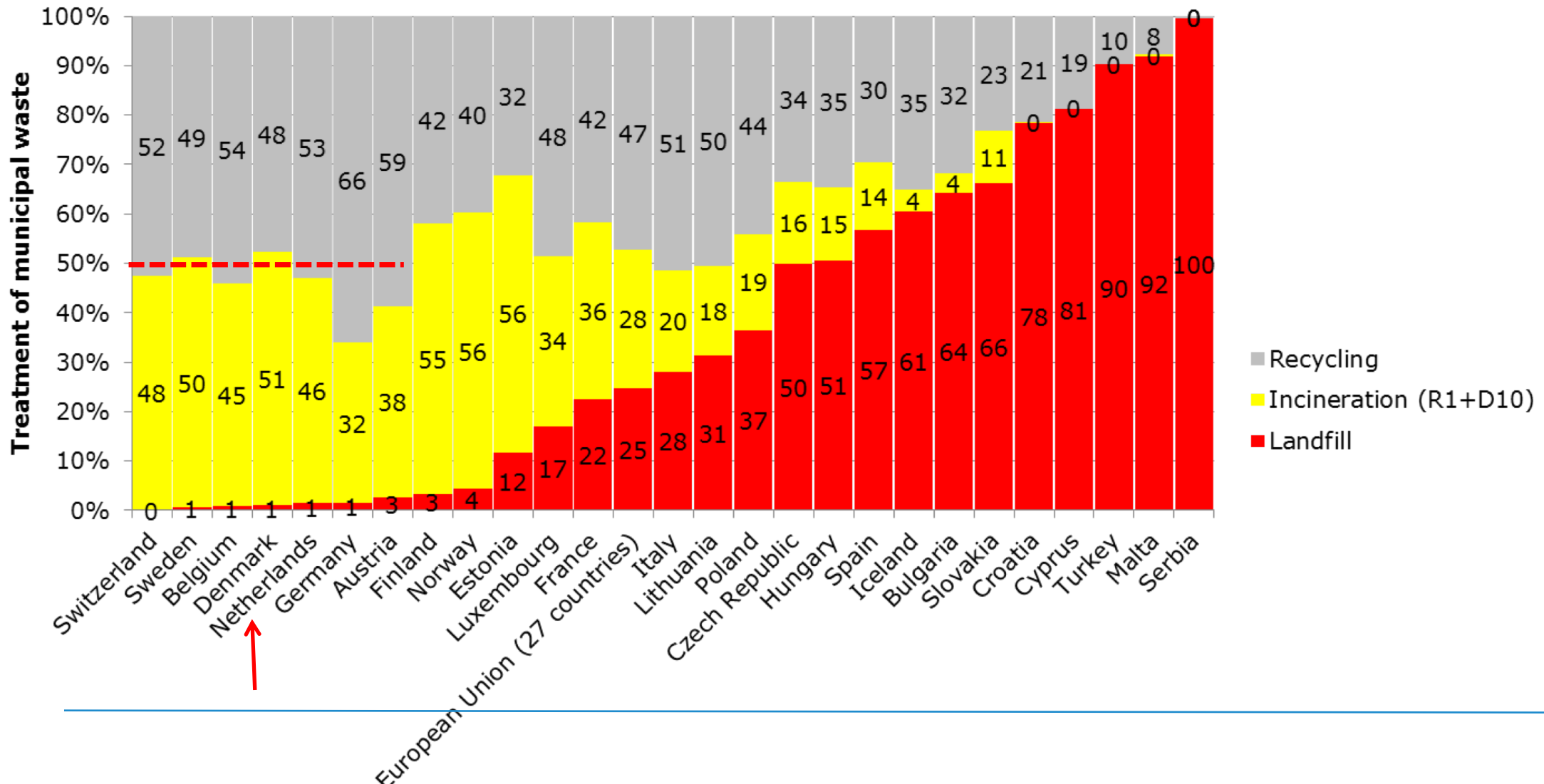
60 billion kilo's



DEVELOPMENT OF LANDFILL TAX AND LANDFILLED WASTE



PERFORMANCE MSW 2016 (EUROSTAT)



MSW COMMON COLLECTION SCHEME

	Curb side	Bring facility
Bio waste	Every other week	Recycling Centre
Paper / Cardboard	Monthly	Street container
Glass		Street container
Textile	Quarterly	Street container
Plastics	Monthly	Street container
WEEE		Recycling Centre / shop
Hazardous Waste		Recycling Centre
Bulky waste	Differs	Recycling Centre (> 20 streams)
Residual waste	Every other week	Recycling Centre

TRADITIONAL WASTE COLLECTION

Residual- and
biowaste:
Every other week



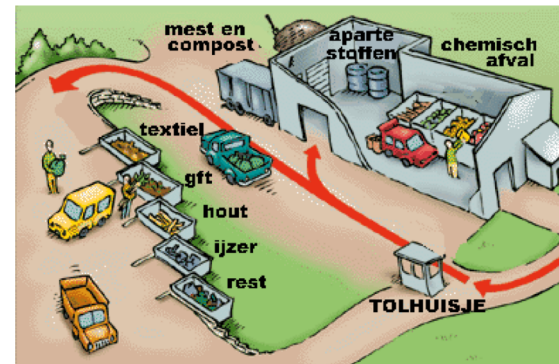
Paper, glass and textiles:
Street container



*Or with local
associations
(churches,
sportsclubs)*



Plastics: curb side collection or
street container



Bulky waste:
Recycling centre
(over 20 waste streams!)







MUNICIPAL RECYCLING CENTRES

MORE THAN 18 TYPES OF WASTE

Dutch waste streams to be sorted:

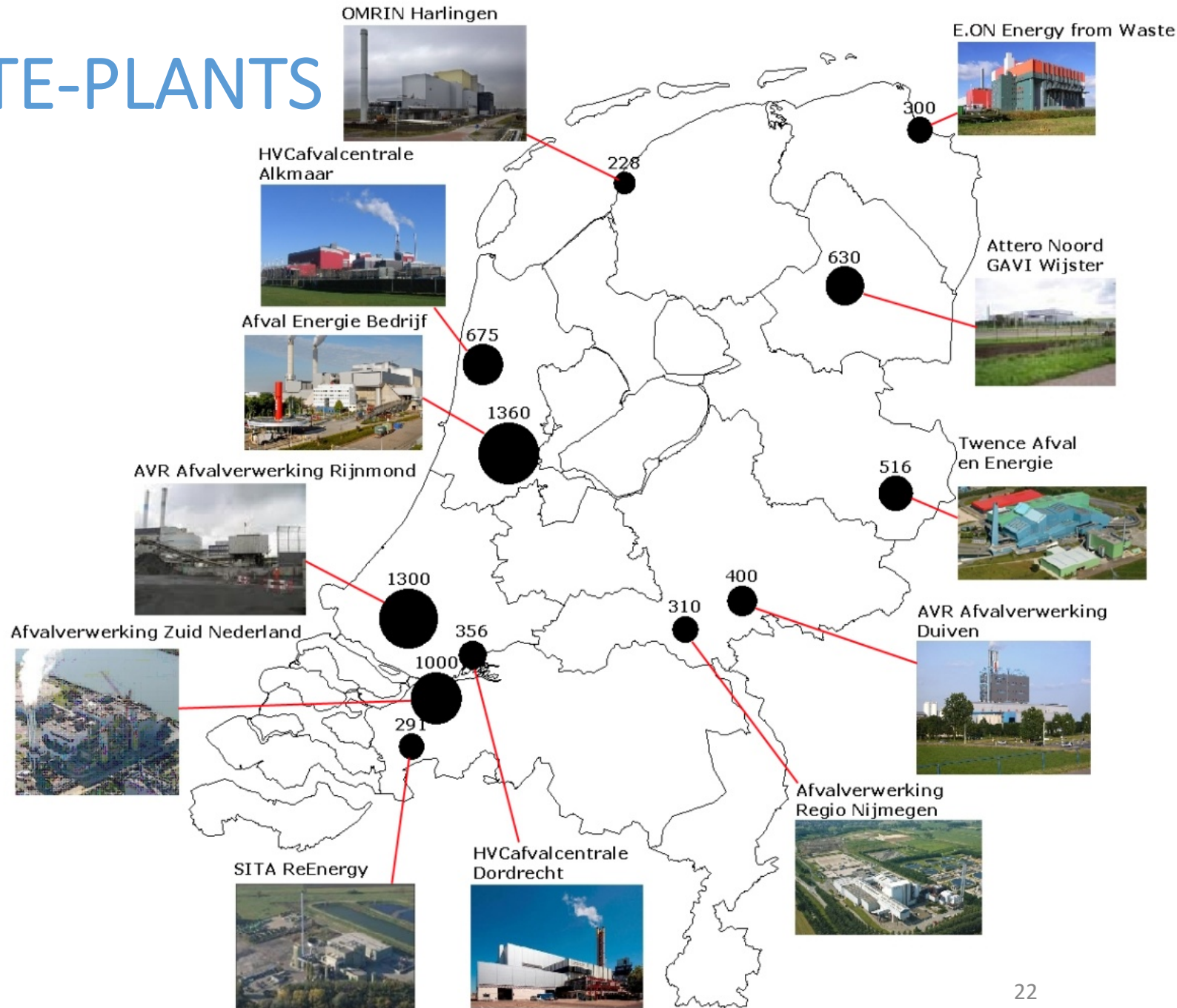
- a. WEEE;
- b. Asbestos;
- c. A-wood & B-wood;
- d. C-wood;
- e. Soil, separated following legal classifications;
- f. Gas tanks, fire extinguishers, pressure equipment;
- g. Car tires;
- h. Roof waste;
- i. Expanded polystyrene foam;
- j. Mixed stone material, not being asphalt or gypsum;
- k. Gypsum;
- l. Gross garden waste;
- m. Hard plastics;
- n. Mattresses;
- o. Metals;
- p. Paper and cardboard;
- q. Textiles, not being carpet;
- r. Flat glass



Modulo modular environmental station / recycling center

ENERGY FROM WASTE-PLANTS

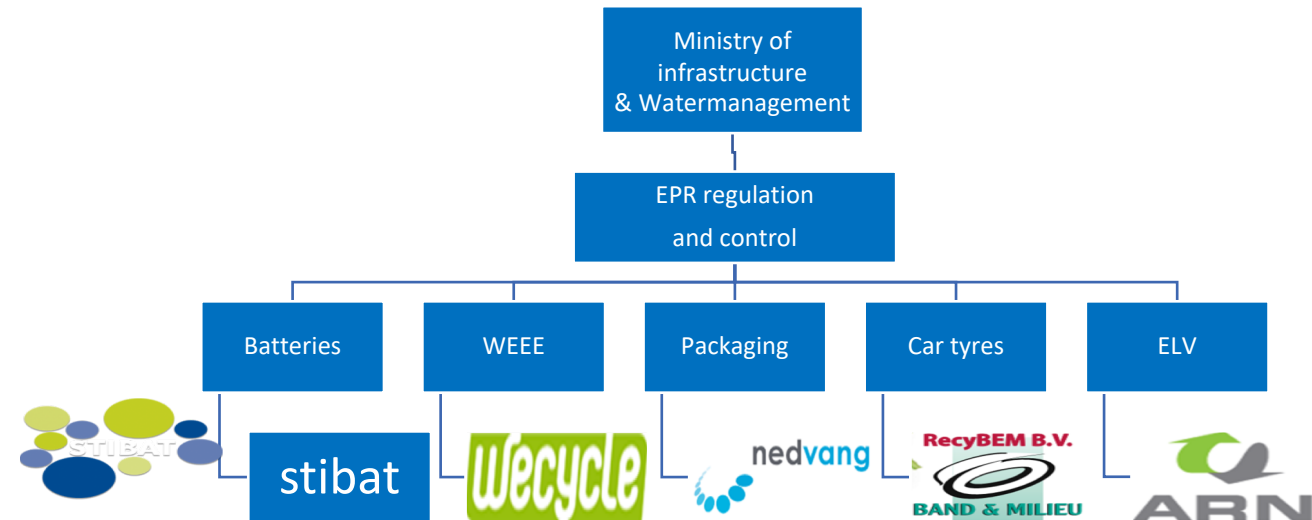
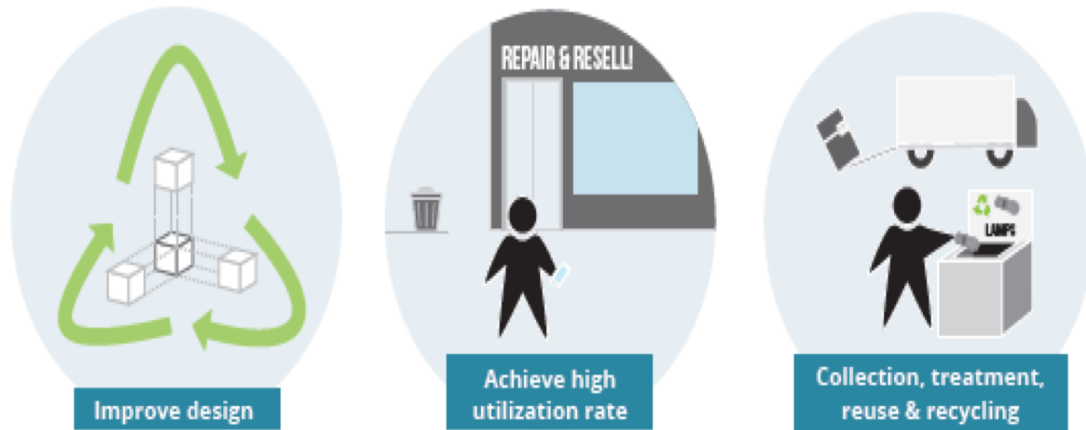
- Capacity: 7.7 Mton
- Produced electricity: 4,000 GWh
- Produced heat: 14 PJ
 - 18% of the renewable energy NL
- Very high standards (R1 EU status)
- 25% capacity used for imported waste (mainly from UK)



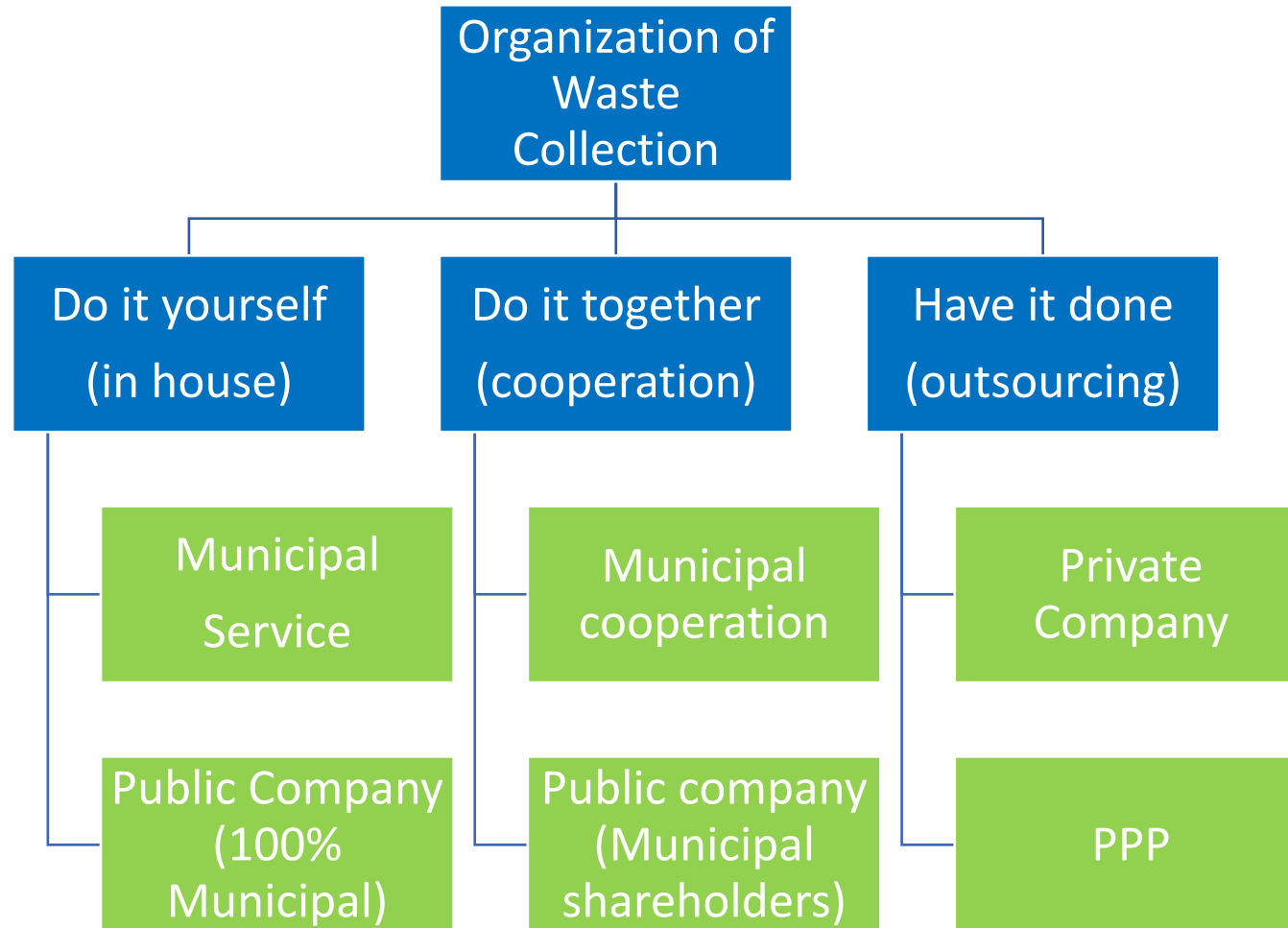
INTRODUCE EXTENDED PRODUCERS RESPONSIBILITY

THE POLLUTER PAYS PRINCIPLE

Illustration 8.1: The primary objectives of the EPR principle



ORGANIZATION OF WASTE COLLECTION



A Transition Path for Turkey?

SHORT TERM GOALS

- Extend waste collection service to 100% of the population
- Create awareness and change citizens attitude to waste
- Close dumpsites, construct sanitary landfills, charge a fee which covers the total cost
 - capex, opex and post closure costs



MID TERM GOALS

- Separate organics and treat them (composting, anaerobic digestion)
- Collect the dry recyclables (co-mingled and glass separate)
- Introduce a fee system to cover the cost (and explain the costs)
- Introduce a monitoring system
- Divert from landfilling



SEPARATE BIO-WASTE

- Biodegradable waste: source of methane, leachate and pest animals on landfills
- Largest fraction in household waste (60-65% in developing countries)
- High value compost and biogas when processed
- Low cost options available: windrow composting



Composting

- Agriculture (70% in 2014)
- landscape maintenance
- Horticulture
- Potting soil

Digesting-Biogas

- Warmth (70%)
- Electricity (21 %)
- Gas (quality) 9%
- CO2 (new)



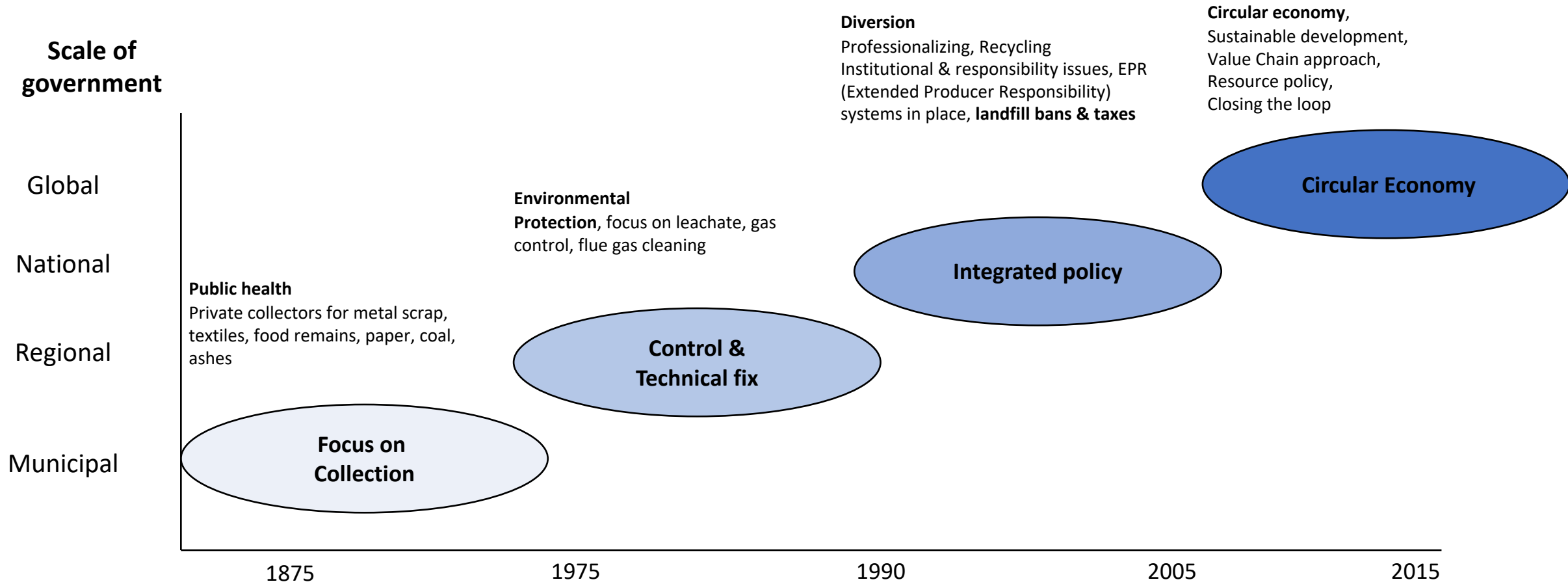
LONG TERM GOALS

- Plan and licence WtE capacity *only* for non-recyclable waste
- Stringent environmental standards for all operations and products
- Introduce Extended Producers Responsibility for recyclable products
- Move to a circular economy
 - in parallel to developing waset management!
 - Waste is dealing with the past
 - You can deal with todays flows by sharing models and products as a service
 - You can work today on the products of tomorrow by design

The Transition towards a Circular Economy

TRANSITION FROM WASTE POLICY TO CIRCULAR ECONOMY IN THE NETHERLANDS

UPSCALING OF WASTE MANAGEMENT OVER TIME: BOTH IN POLICIES AND WASTE MARKETS



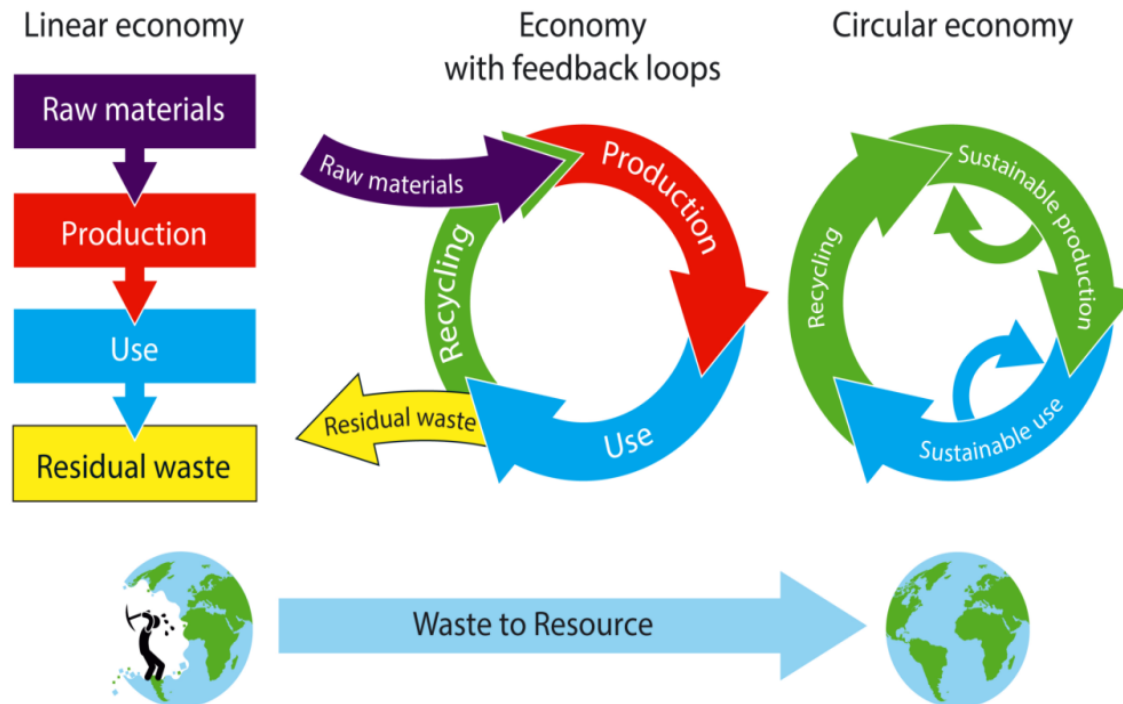
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The WHAT of Circular Economy

Value hill - importance of value retention



TRANSITIONING TOWARDS A CIRCULAR ECONOMY



Role of government in the transition

- **Strengthening networks**
 - Independent party connecting sustainable innovators
- **Eliminating legal and regulatory barriers**
 - Issuing licenses
 - Amending laws
 - Room for experiments
- **Supporting the market**
 - Procurement
 - Certification

THE DUTCH POLICY EXAMPLE

A FULLY CIRCULAR ECONOMY BY 2050

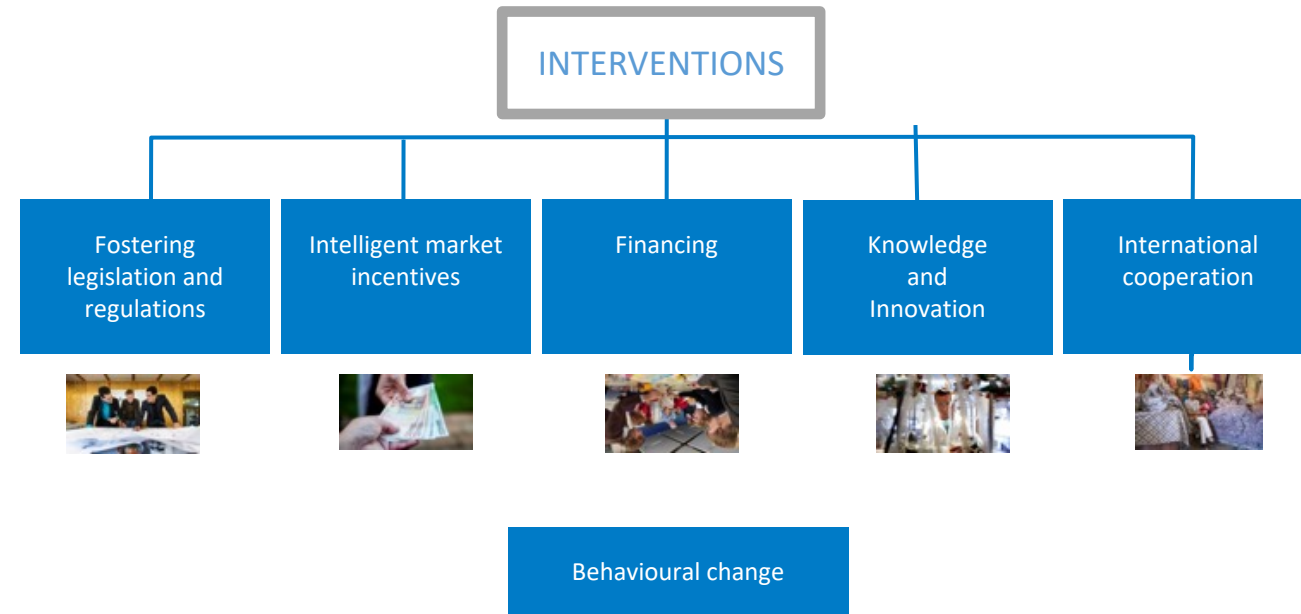
50% REDUCTION IN USE OF NON RENEWABLE RAW MATERIALS BY 2030

A clear focus allows to attract a critical mass off stakeholders needed to scale-up



SECTORS THAT PRESENT BUSINESS OPPORTUNITIES ABROAD

Create the conditions for change by choosing the right interventions

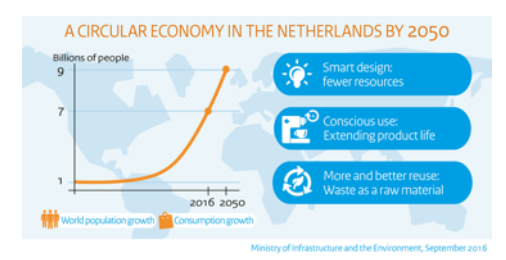


LESSONS LEARNT THE HARD WAY, THAT CAN BE SHARED, ADAPTED AND CAN LEAD TO AN ACCELERATION AND FERTILE GROUND FOR BUSINESS

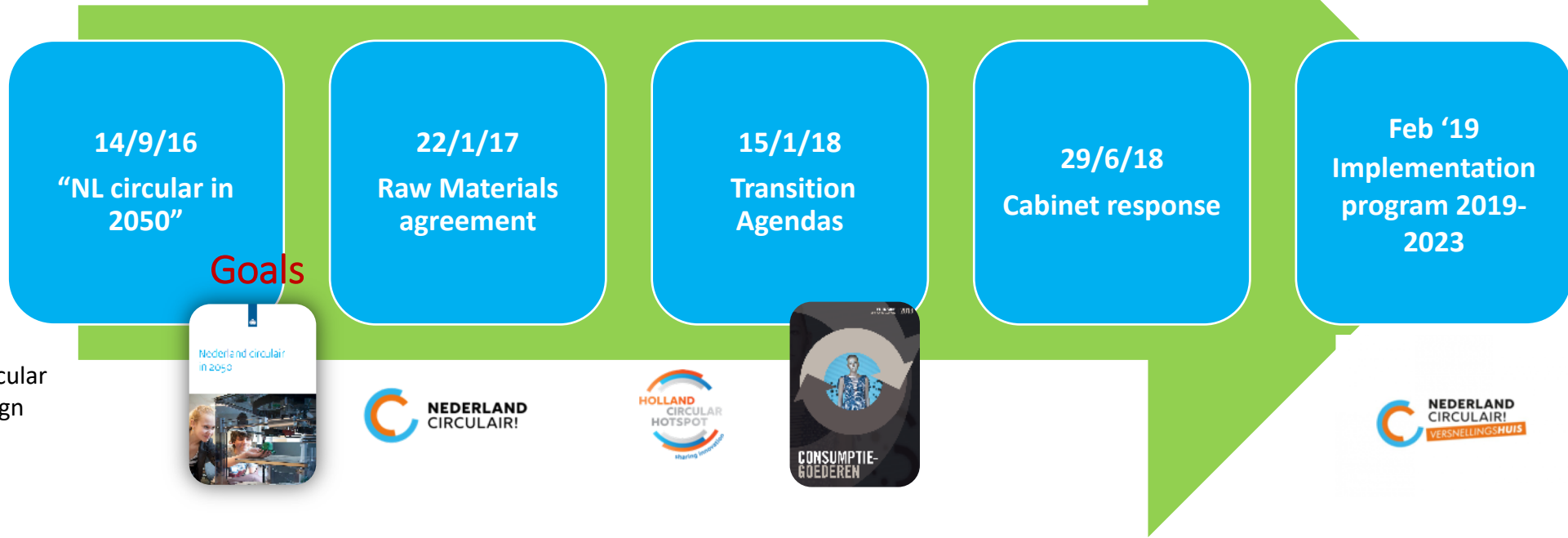
DUTCH CE ROADMAP

A FULLY CIRCULAR ECONOMY BY 2050

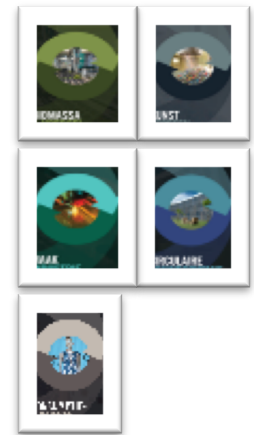
50% REDUCTION IN USE OF NON RENEWABLE RAW MATERIALS BY 2030



Together with private sector & civil society



Goals



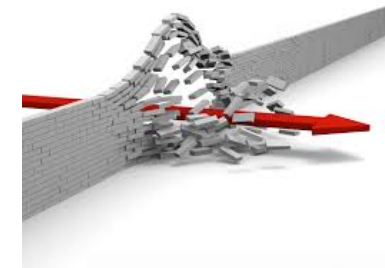
Goals
Milestones
Leaders
Resources
Coordination



Netherlands Circular Hotspot campaign

ROLES OF GOVERNMENT

- **Connect** the networks to collaborate along and between value chains
- **Support** to enable innovations getting to the market
- **Challenge** the industry to raise the bar and proof impact
- **Regulate** to create (ambitious) framework (& level playing field)



PUBLIC-PRIVATE COLLABORATION

Focus on innovation & smart collaboration in supply chain

- Create trust, be transparent
- Start small, inspire others
- Work together (big & small)



Examples

- National Raw Materials Agreement
- Plastics Pacts NL and EUR
- National Concrete Agreement
- Denim Deal





This project is co-funded by
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