

UKRAINE NATIONAL WASTE MANAGEMENT PLAN

MUNICIPAL WASTE MANAGEMENT COSTS

CONFERENCE

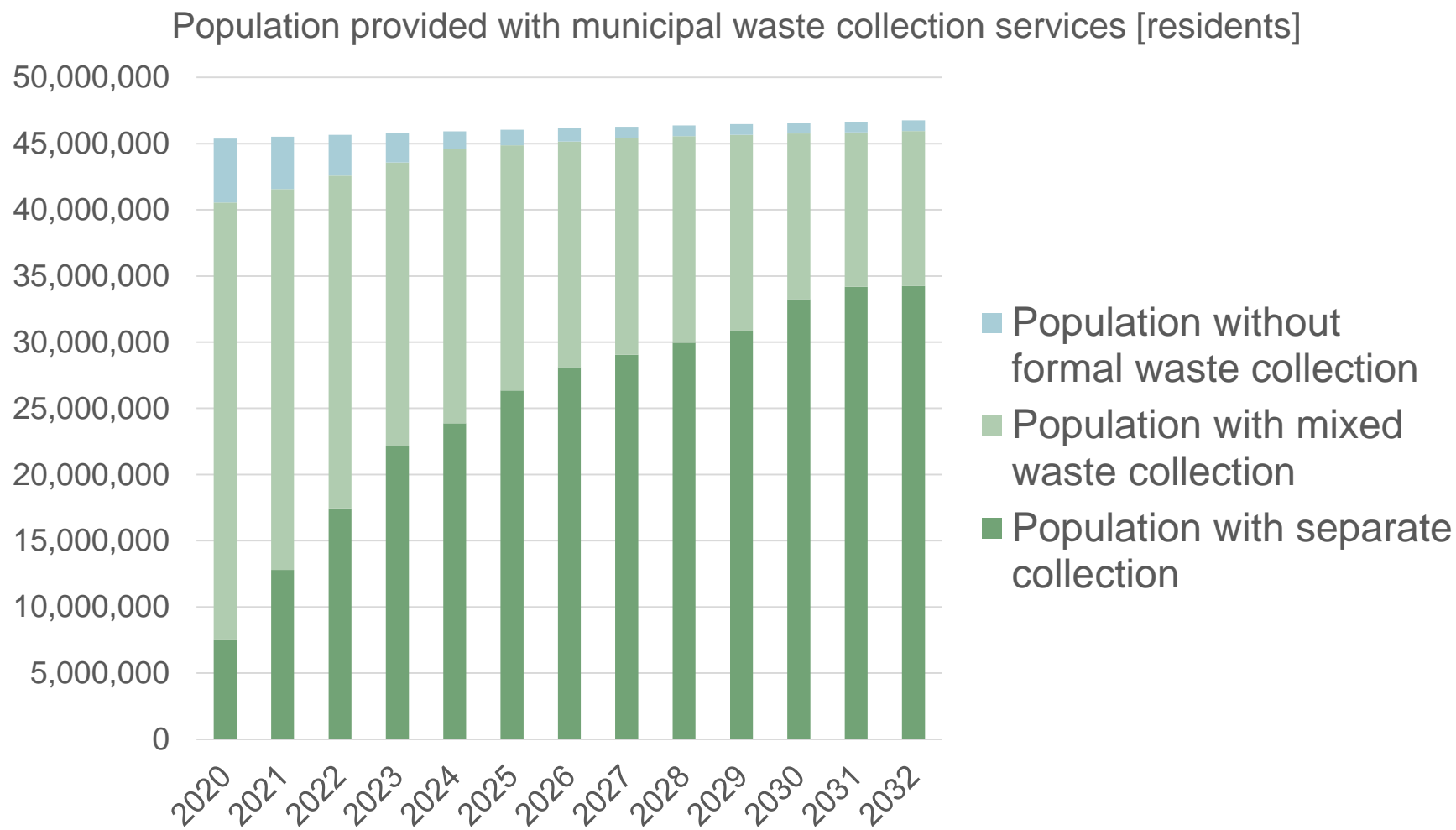
«New Waste Management Policy –
The Path to Circular Economy»

June 2018

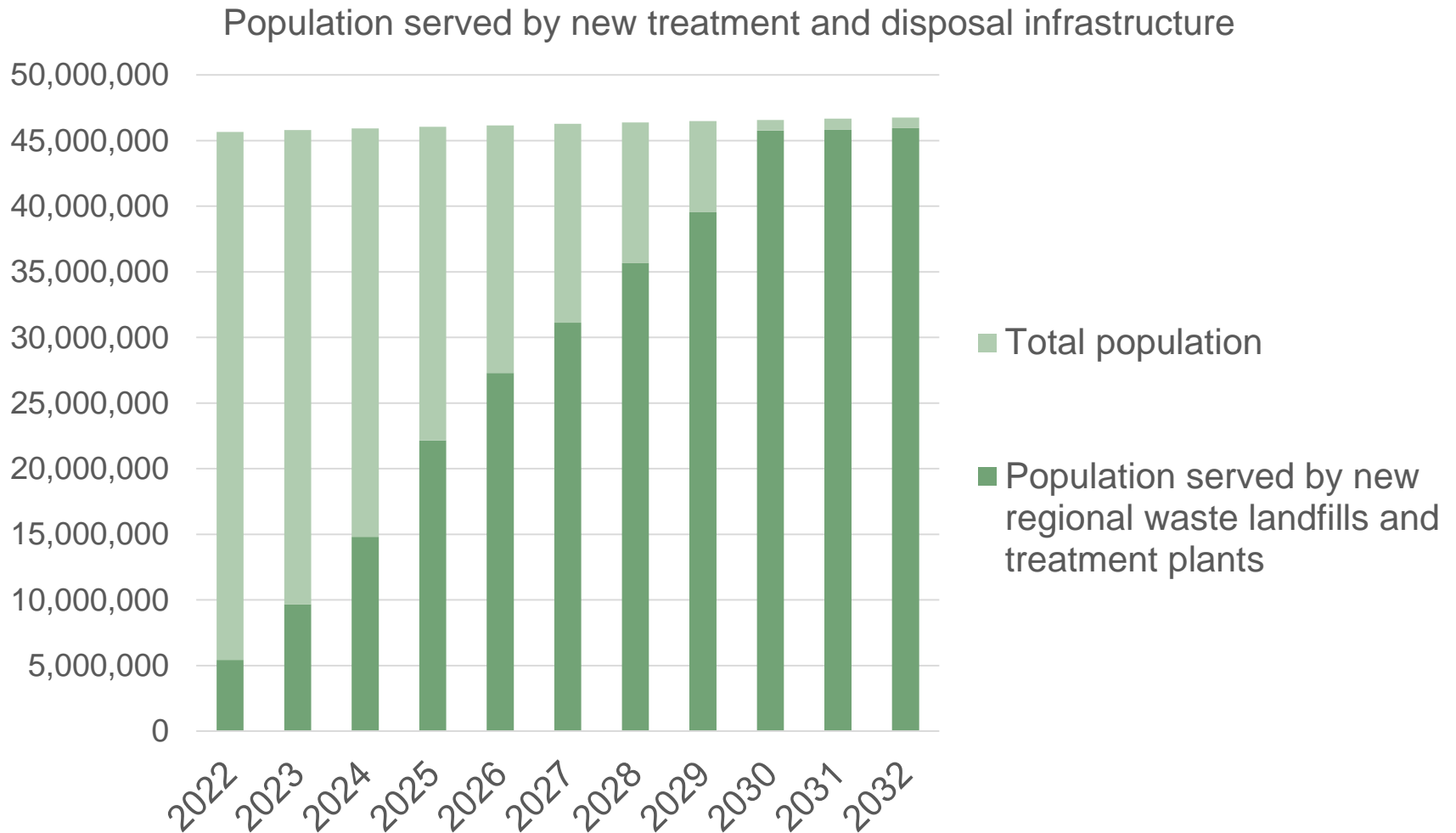
General approach and assumptions

- The analysis is conducted at national and oblast level
- The costs estimates are based on population and waste generation projections, taking into account existing waste composition data
- Extension of waste collection services to 98% of population by 2026
- The territory of Ukraine divided to 152 regional waste management zones
- The new treatment and disposal infrastructure planned to be build by 2032, comprising of 4 incineration plants, 27 MBT plants, 32 sorting facilities for mixed waste, 152 regional landfill, composting plants for green waste
- The type of the treatment plants is accepted based on the size of the regional waste management zones. The exact facilities will be decided and defined with the regional waste management plants
- Separate collection of recyclable waste will be provided to 73% of residents by 2032 and implemented based on extended producer responsibility schemes for packaging waste
- All cost estimates are developed in 2018 constant prices

Projections for development of municipal waste collection

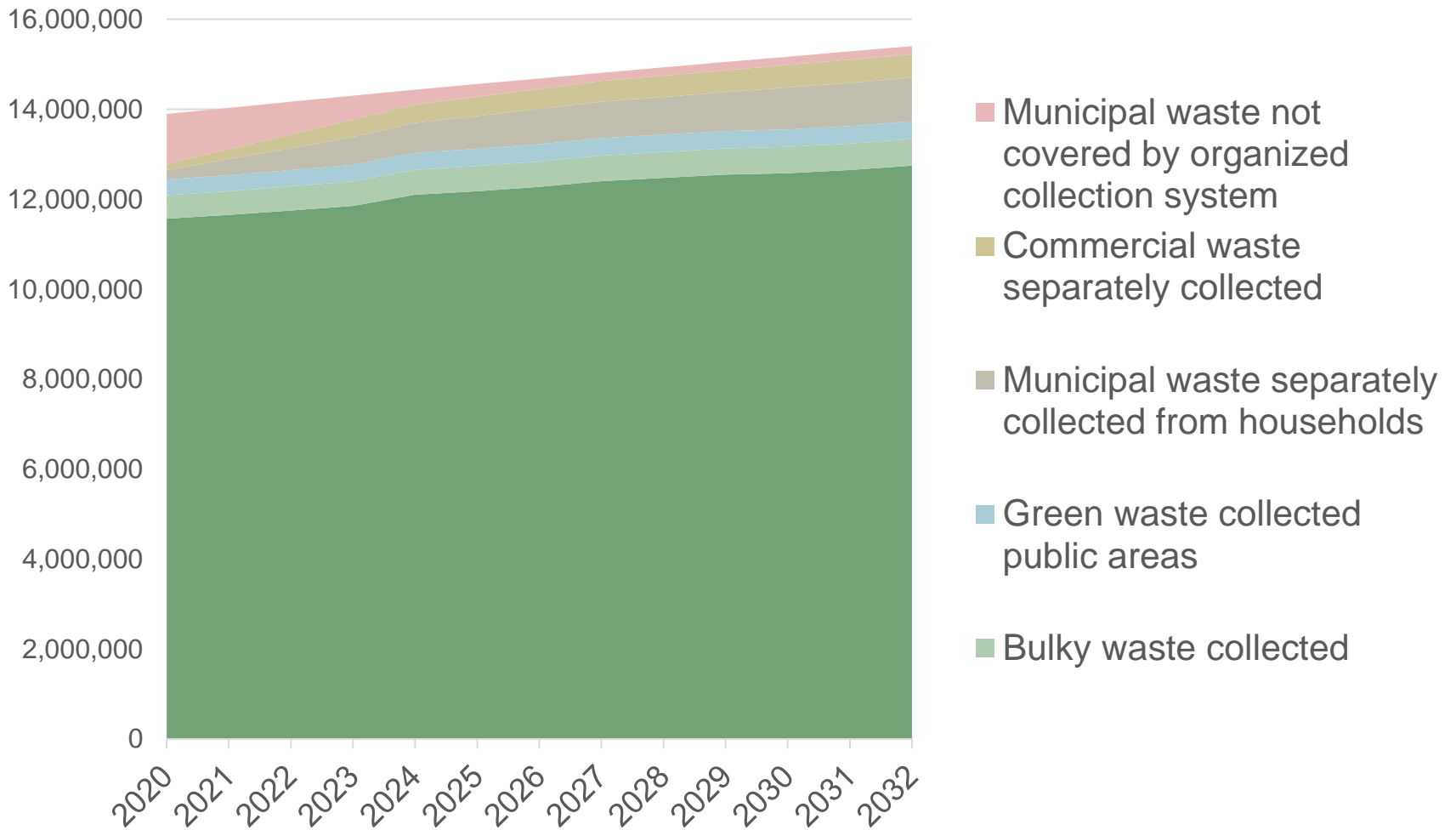


Development of new regional landfills and treatment plants

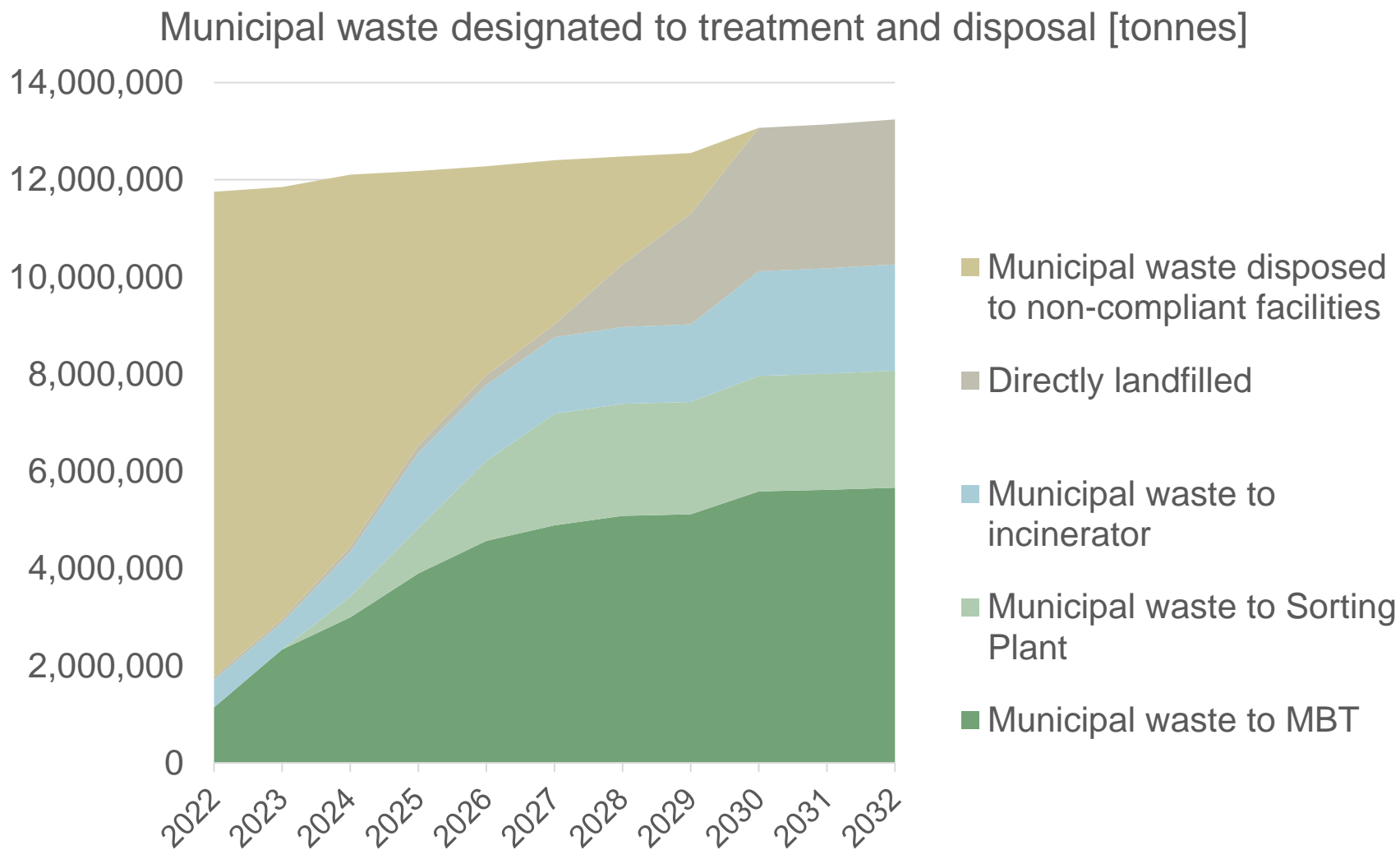


Municipal waste collected

Municipal waste collection [tonnes]

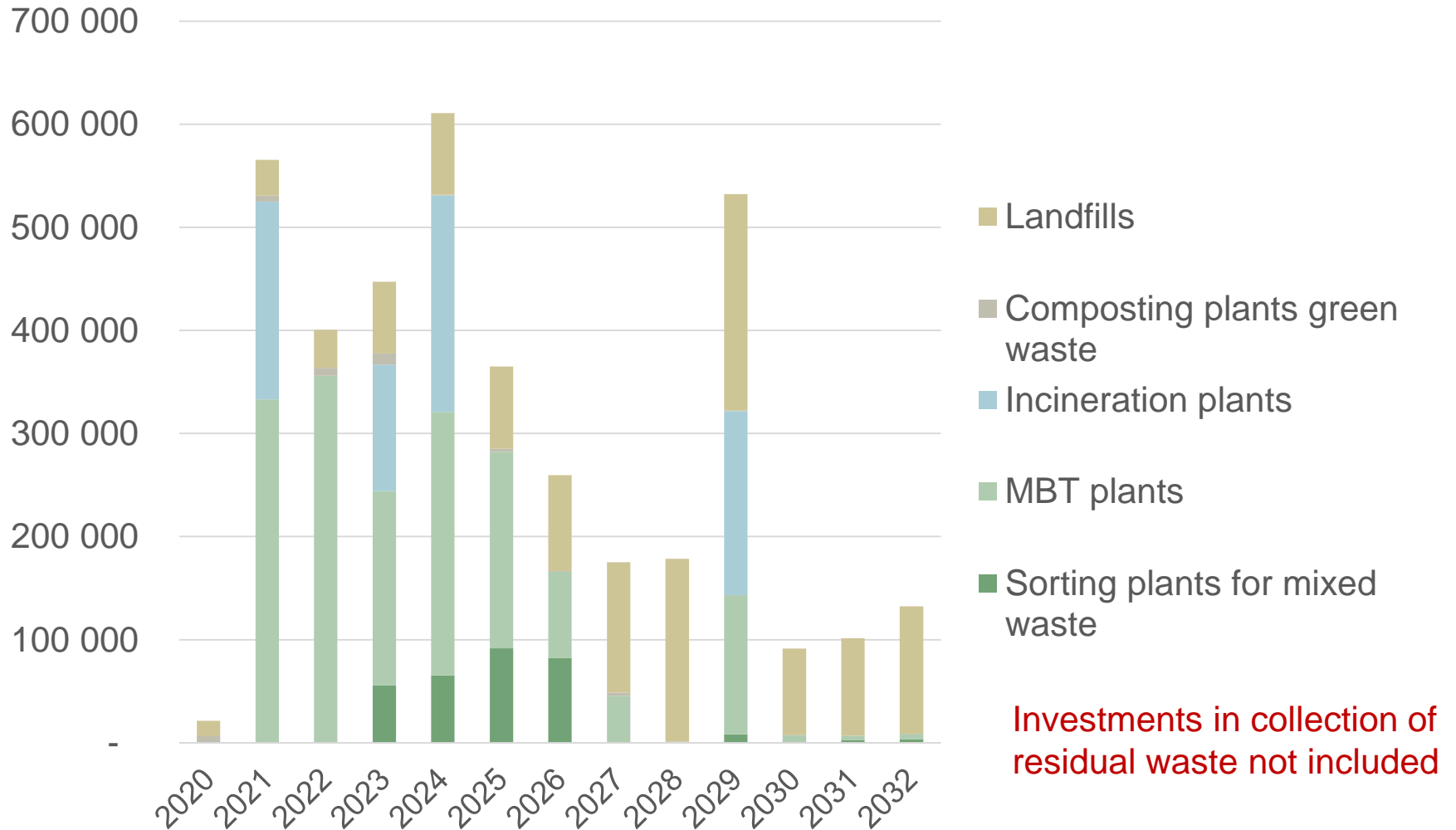


Development of new treatment and disposal infrastructure



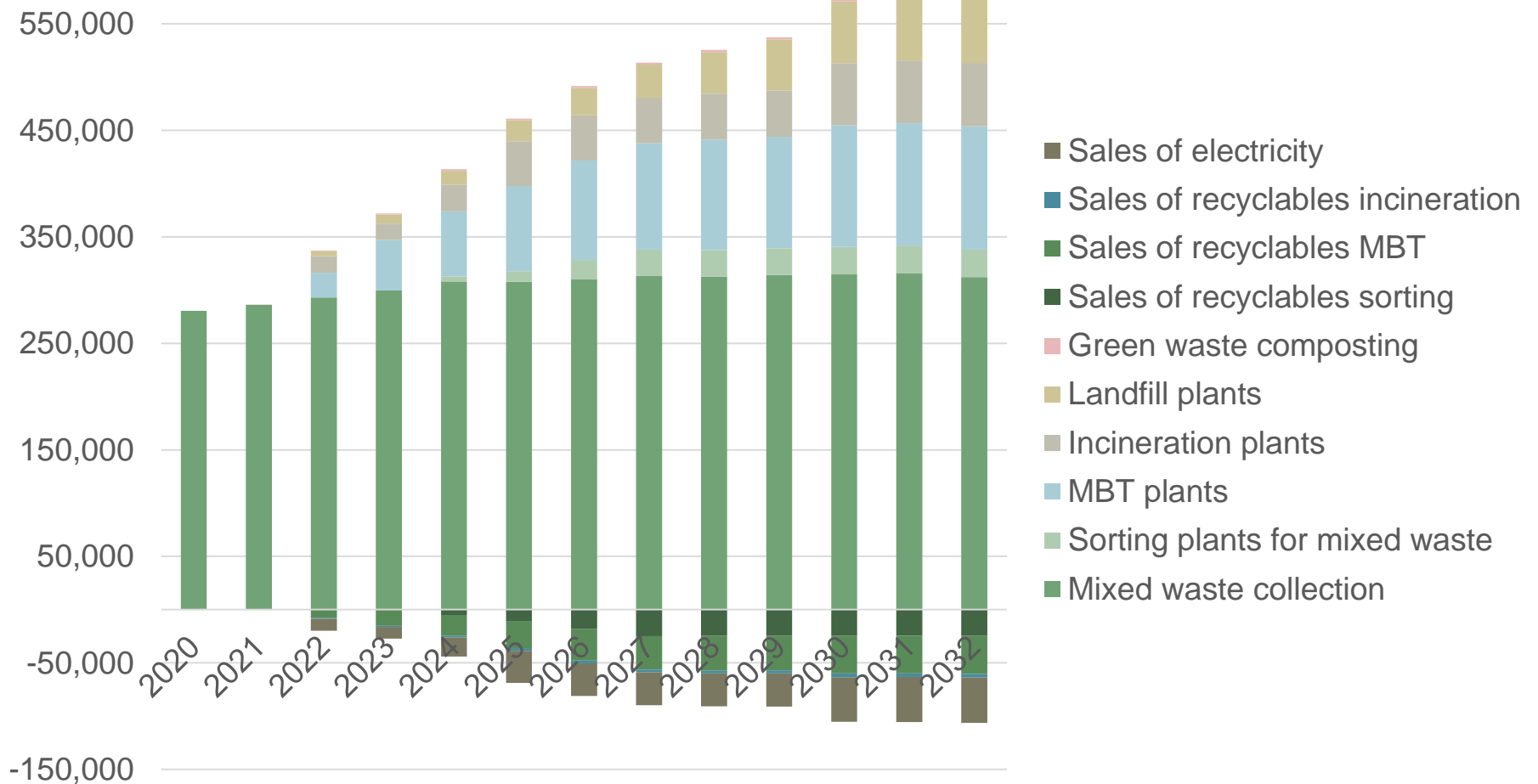
Investment costs estimate new treatment and disposal infrastructure

Investment costs [thousands EUR]



Operating costs for implementing new waste management system

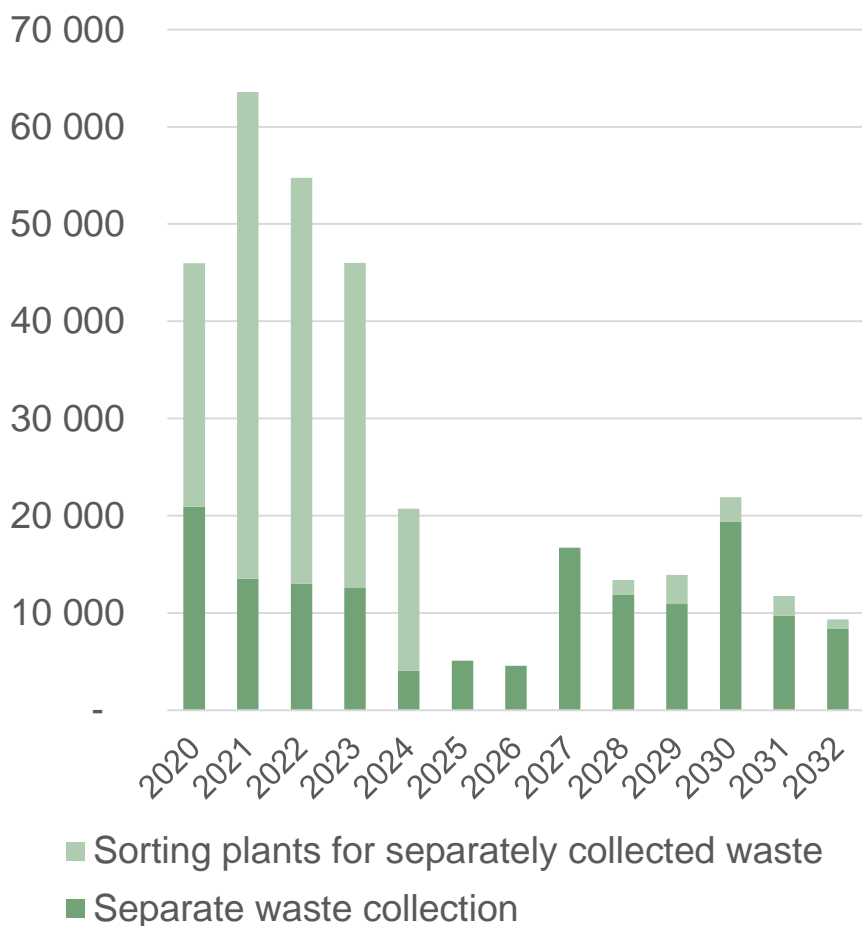
Estimated operating costs and revenues [thousands EUR]



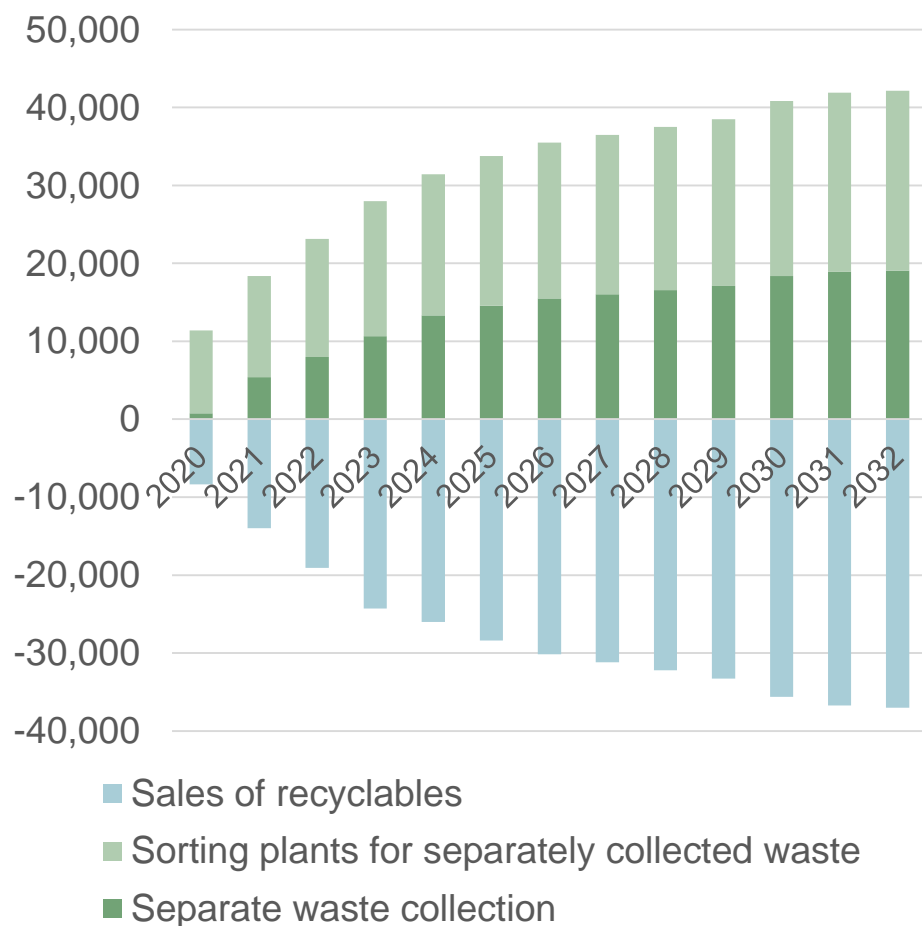
Separate collection and sorting of recyclable waste

Implemented mainly through extended producer responsibility schemes for packaging waste

Investment costs estimate
[thousands EUR]



Operating costs and revenues
[thousands EUR]



Average Incremental Costs Analysis

Average incremental costs per tonne of total waste collected 2020 - 2032

Average incremental costs and the equivalent income stream

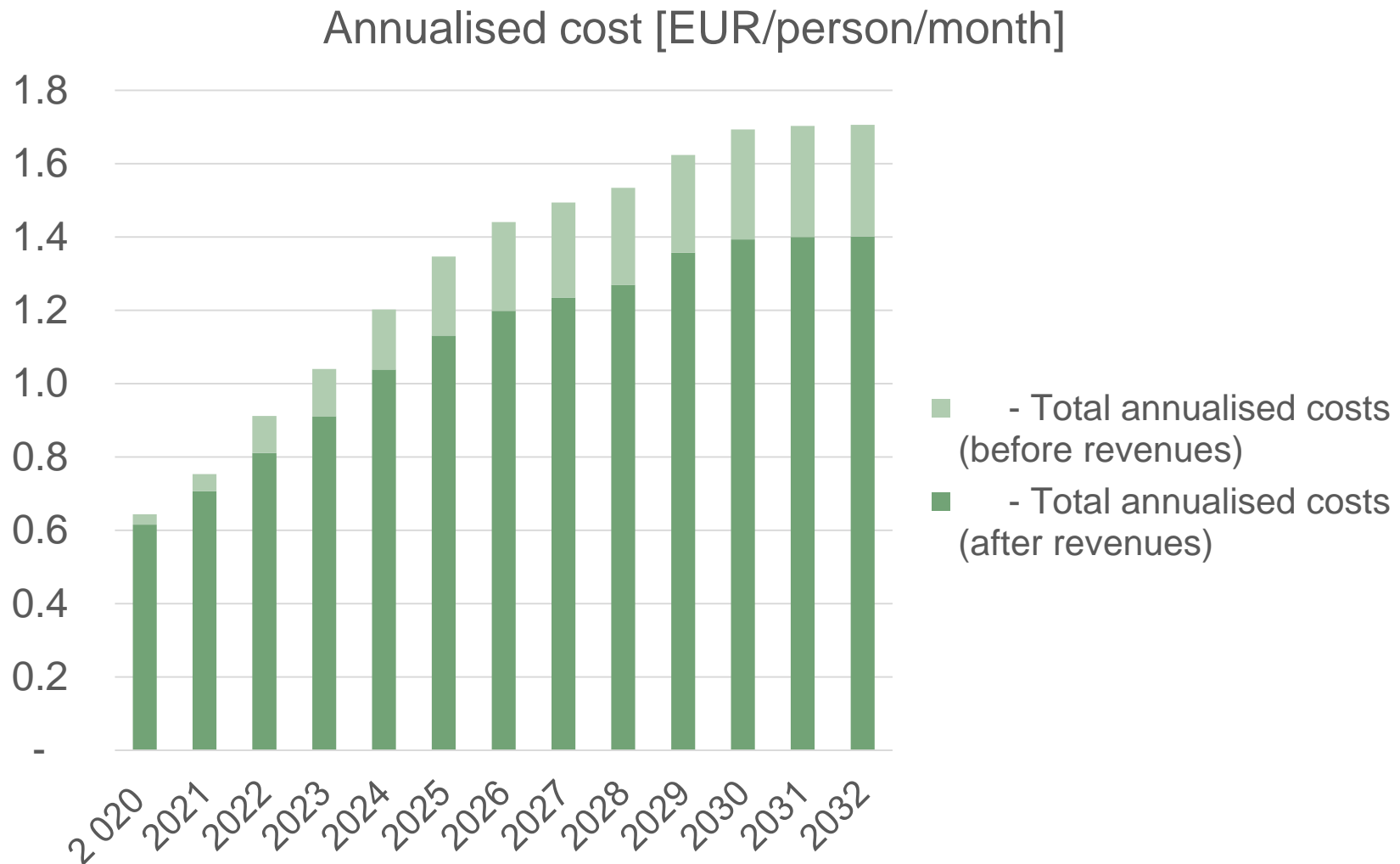
	AIC	PV
	€/tonne	€'000
- Total Net Cash Flows (before revenues)	52,72	6 345 257
- Total Net Cash Flows (after revenues)	44,91	5 405 015
- Investment expenditures (net of residual value)	16,20	1 950 029
- Operating expenditures	36,52	4 395 228
- Revenues	-7,81	-940 242

Discount factor used 5%

Average Incremental Costs Analysis

<i>Contributions by function to average incremental costs (€/tonne)</i>	
Total Net Cash Flows (before revenues)	52,72
- Mixed waste collection	23,68
- Separate waste collection	1,81
- Sorting plants for separately collected waste	2,60
- Sorting plants for mixed waste	2,12
- MBT plants	12,16
- Incineration plants	5,42
- Landfill plants	4,91

Implementation costs per person. Tariff implications



Conclusions and key measures proposed in the plan

- Investment requirements exceed 3 billion EUR (not taking into account the costs for the closure of existing landfills)
- Mobilization of significant amount of IFIs and international donors financing is required
- The role of the private sector will be crucial for the implementation. This will require: (i) political commitment to introduce full cost recovery policies for waste management services; (ii) ensuring fair and open competition with public sector operations; (iv) removal of unnecessary administrative barriers.
- Significant tariff increase is necessary taking into account the affordability threshold accepted as 1% of disposable household income.
- The limited resources available require determination and prioritization of investment needs.
- The development and implementation of regional waste management plans will be of primary importance

Conclusions and key measures proposed in the plan

- The first priority shall be given to the reducing the risks to public health and the environment from abandoned and/or unlicensed waste disposal sites
- Implementation of more advanced waste treatment options for waste recovery and diversion from landfilling will be done taking into account technical feasibility, the benefits for the environment and the economic viability of the individual projects
- Public financing shall not be designated to facilities not envisaged in regional waste management plans
- The extended producer responsibility schemes shall cover the full (or significant part) of the separate collection and sorting costs
- Implementation of differentiated environmental tax for non-compliant landfills can make their operation more expensive and generate the necessary funds for the remediation activities
- Increasing public awareness of, and involvement in, efforts to address the core waste management issues facing the country;