

“The case of Parma introducing Pay-as-you-throw while controlling the economic balance of waste collection”

Gabriele Folli, former Deputy Mayor for Environment (2012-2017)
Municipality of Parma (Italy)



SAVE THE DATE!
Thu, 30 April - 3pm

Improving the collection of paper and packaging waste:
what impact on costs?

Twan Van Leeuwe, PNO Consultants
The costs of PPW waste collection system; a **cross-analysis on 5 European cities**, PNO

Gabriele Folli
The case of Parma: introducing **Pay-As-You-Throw** while controlling the **economic balance** of waste collection

Michele Giavini, ARS Ambiente
A presentation by the **Life-RETHINKWASTE** project focusing on PAYT and KAYT (Know-As-You-Throw)

Paper & Packaging Waste
WEBINAR

 **COLLECTORS**
WASTE COLLECTION SYSTEMS ASSESSED
AND GOOD PRACTICES IDENTIFIED
www.collectors2020.eu

Parma – City general figures

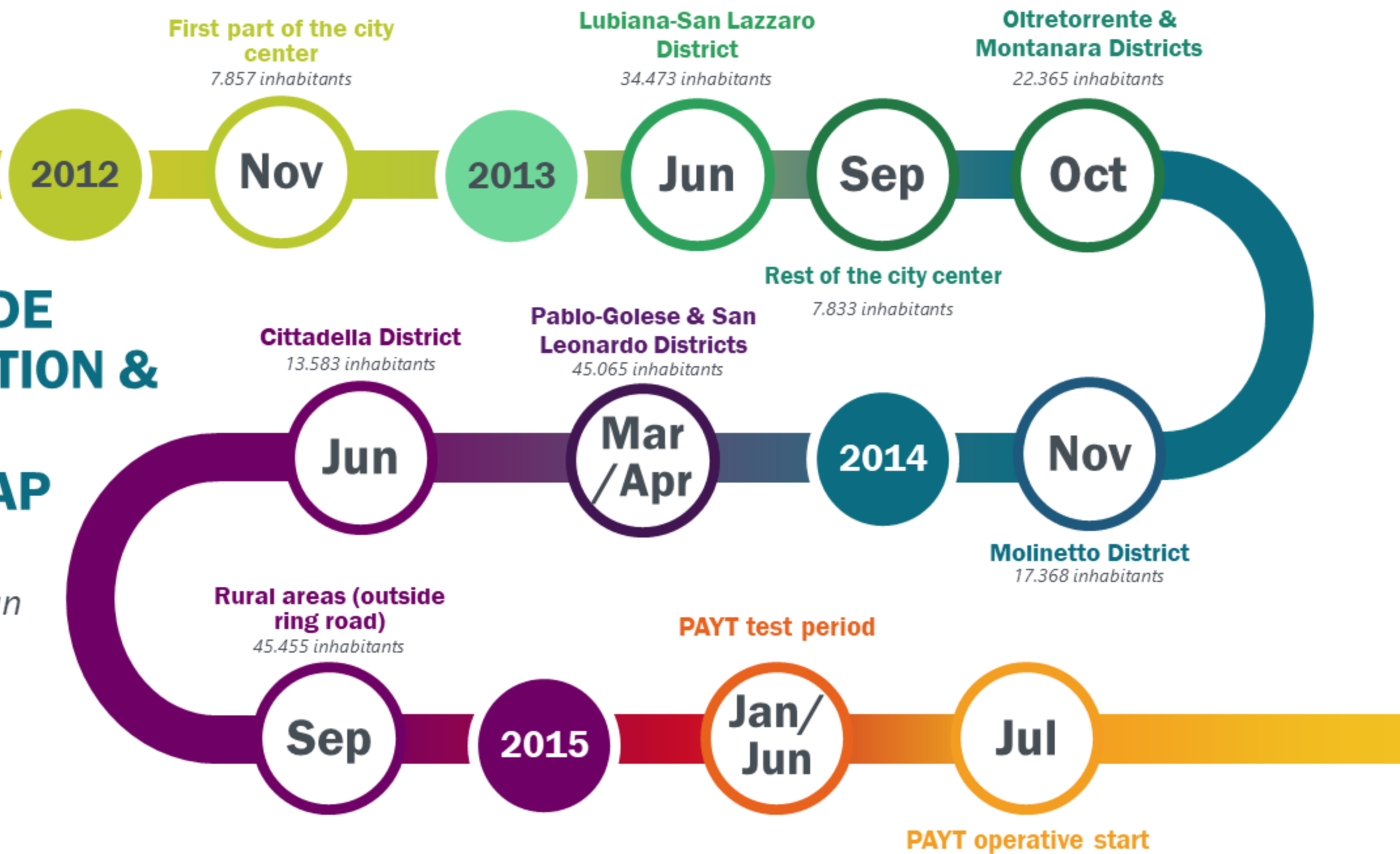
- 200.000 inhabitants in 260 km² (769 inh/km²)
 - 13% in the historical center (10.000 inh/km²)
 - 65% in urban area (4.407 inh/km²)
 - 22% in rural area (178 inh/km²)
- 96.141 families, 12.337 business activities
- 15% of the population of different native language
- Important presence of University students coming from outside (66% on a total of 26.000 students)



PARMA KERBSIDE COLLECTION & PAYT ROADMAP

2012-2015

2 ½ Years Plan



2017 KPI: 81% separate collection rate - 106 kg/ inh/year of residual waste - 103 kg/ inh/year of bio-waste

Collection frequency (for households)

■ Residual waste

- 1 a week
(2 in the city centre)



■ Paper & cardboard

- 1 a week



■ Bio-waste

- 2 a week
(3 in the city centre)



■ Glass & Garden waste

- With road containers



■ Plastics, metals and tetra-pack

- 1 a week



- Delivery between 19,30 and 21
- Collection starting from 21
- Calendar designed to concentrate in 2 days of the week all the collection streams

Collection frequency (for households)

	Rifiuto residuo indifferenziato	LUNEDÌ esporre dalle ore 19.30 alle ore 21.00
	Plastica, barattolame e poliaccoppiati o cartoni per liquidi (tipo Tetra Pak)	GIOVEDÌ esporre dalle ore 19.30 alle ore 21.00
	Organico	LUNEDÌ e GIOVEDÌ esporre dalle ore 19.30 alle ore 21.00
	Carta	GIOVEDÌ esporre dalle ore 19.30 alle ore 21.00
	Vetro	STRADALE

Great performances

- Total waste generated by households and business activities is 530 kgs/inh/year (vs an average of other capital cities in the region of 700 kgs/inh/year)

80%
separate collection
rate in march 2017

Main streams of collection

Kg/inhabitant/year	2012	2013	2014	2015	2016	2017	Diff. 2017 vs 2012
Paper/Carton	68,61	69,09	73,70	73,67	74,36	72,60	+5,8%
Plastic/Metals + Glass *	64,54	66,78	79,97	87,32	89,88	93,98	+45,6%
Organic waste	52,67	62,69	90,50	99,11	103,00	102,52	+94,6%
Vegetal waste	55,55	59,50	62,22	82,92	77,00	72,29	+30,1%
Residual waste	248,62	220,87	143,52	117,43	108,00	105,92	-57,4%

* In 2012 we started to change method of collection of plastic, metals and glass that formerly were collected in one single flow

Parma vs other capital cities in the region



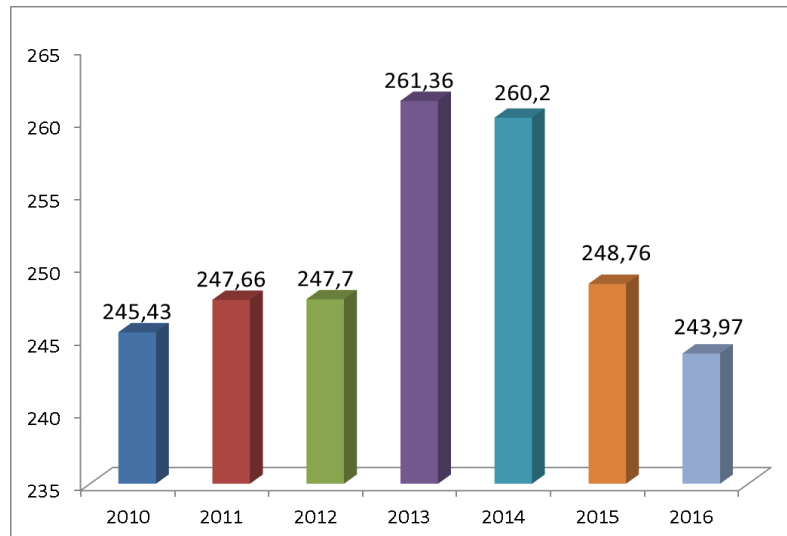
Capital cities in Emilia Romagna	Inhabitants	% separate collection	Residual waste (kg/inh/yr)	Bio-waste (kg/inh/yr)	Total urban waste (kg/inh/yr)
Parma	194.934	81%	105,92	102,52	552,11
Reggio Emilia	172.139	67%	221,00	52,41	660,11
Cesena	97.234	64%	250,56	80,50	691,96
Ferrara	132.921	63%	250,94	54,78	683,45
Modena	185.268	62%	259,43	35,55	691,46
Rimini	150.007	64%	260,62	129,39	733,76
Forli	118.263	62%	272,20	49,24	716,82
Bologna	389.261	48%	296,01	54,90	571,82
Piacenza	103.262	57%	317,10	45,30	745,67
Ravenna	159.522	56%	337,98	37,30	771,90

■ Parma is the only city in the region that has introduced kerbside collection and pay-a-you-throw system

* Source: ARPA report 2017

Comparing the waste bill between capital cities in Emilia-Romagna

- Considering the bill for 1 apartment of 100 sqm with 3 people residents
- Parma the second lower waste bill in the region

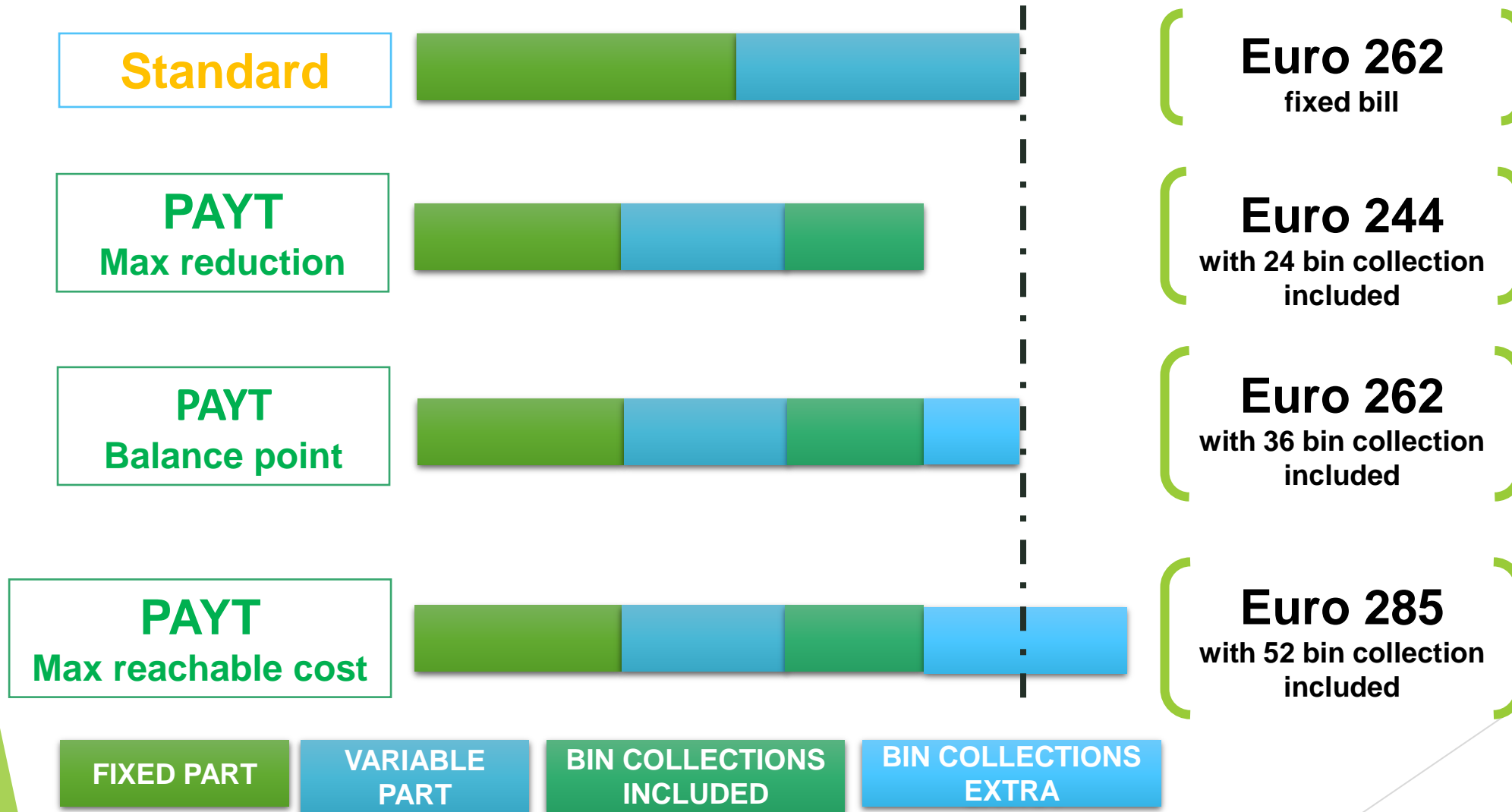


Waste bill evolution during PAYT application in Parma

CITY	TARI 2017	TARI 2016	Diff % 2017/2016
Ravenna	€ 242	€ 239	1,30%
Parma *	€ 244	€ 244	0,00%
Cesena	€ 276	€ 263	4,90%
Piacenza	€ 276	€ 276	0,00%
Rimini	€ 279	€ 277	0,70%
Forlì	€ 284	€ 279	1,80%
Bologna	€ 286	€ 286	0,00%
Modena	€ 293	€ 288	1,70%
Reggio E.	€ 303	€ 295	2,70%
Ferrara	€ 325	€ 325	0,00%

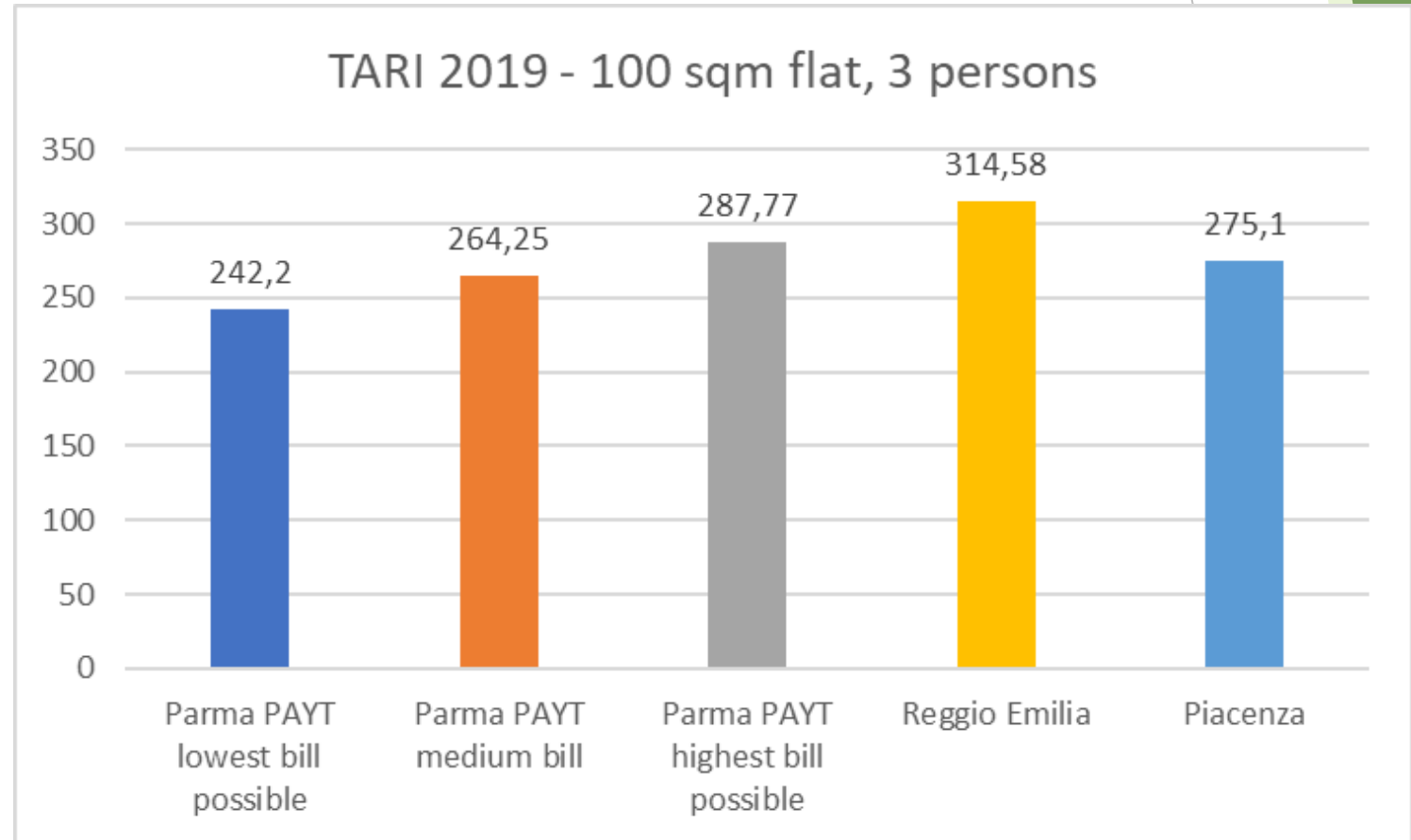
Comparing standard waste bill vs PAYT

Ex. flat of 3 persons 100 sqm on the base 2016



Waste Bill 2019 – Comparison between 3 cities having same Waste Management Company but with different collection schemes

- Almost 80% of the waste bills issued in 2016 benefit of the lowest bill (households within 24 residual waste bin collection per year)

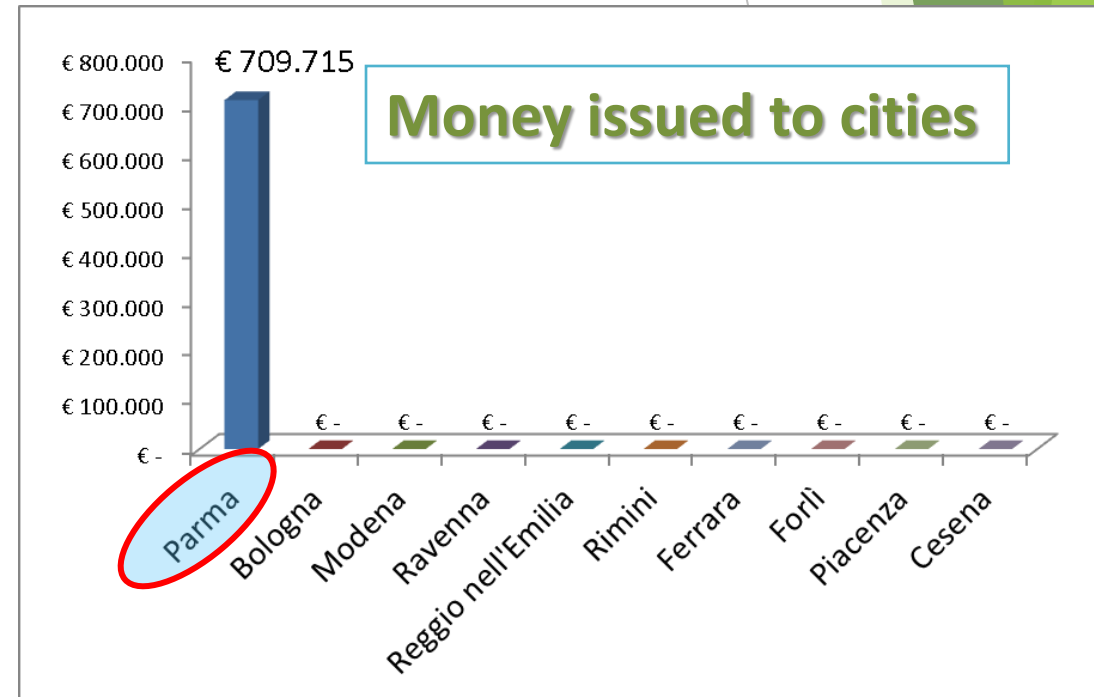
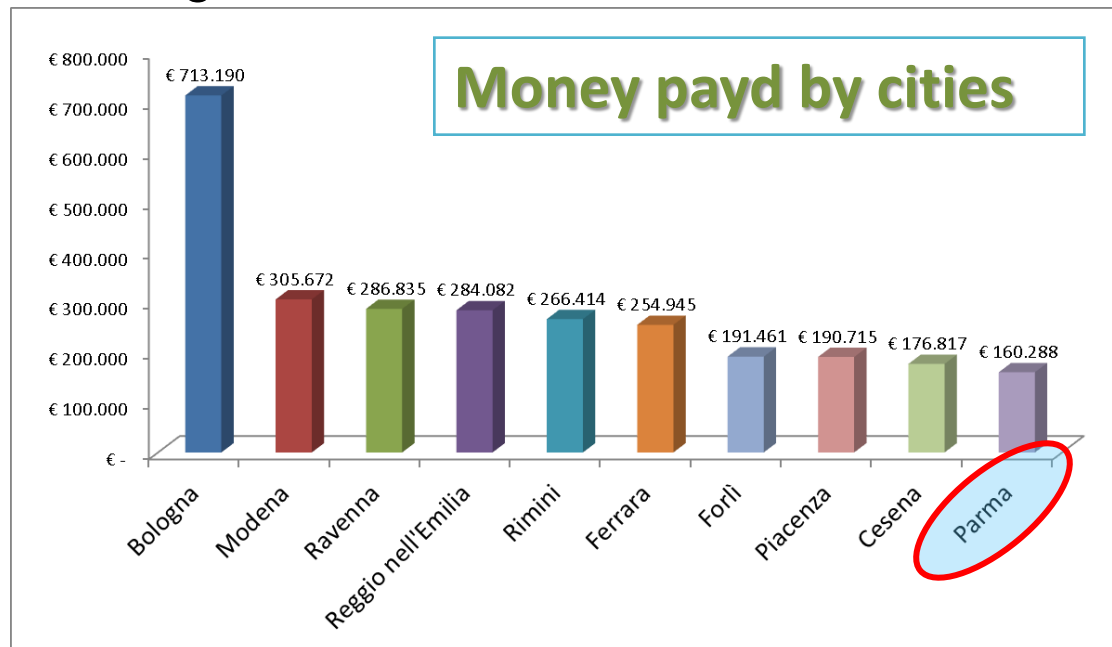


- Same waste management company (Iren) and similar dimensions and urban features
- Only Parma had PAYT and kerbside collection on the whole area

Source: <https://www.irenambiente.it/calcola-la-tari>

New regional law to support virtuous behaviours and put cities in competition

- New regional law issued in 2015
- Every city pay a **tax for each kg** of residual waste produced
- This money goes **to form a fund** that is revolved to cities that each year reach residual waste reduction goals



More value to recycled materials by separating 1 flow in 2 separate streams

Waste type	Before 2012	Incomes (Euro/ton)
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Glass, plastics and metals (collected together in 1 stream)



17

Waste type	After 2012	Incomes (Euro/ton)
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Plastics and metals



106

Glass



33

More incomes after separating streams



+800.000 Euro
Incomes from the EPR Conai
consortium (+340%)

- In 2012 plastic, glass and metal packaging were collected in one single stream
- Quality was poor and the income in Euro/ton was less than 17 Euro/ton
- We divided the collection in 2 separated streams:
 - Plastic/metal
 - Glass
- Quality and incomes were improved:
 - 33 Euro/ton for glass
 - 106 Euro/ton for plastic/metal

		2012		2014		2015	
Euro/ton		Q.ty (ton)	Total incomes (Euro)	Q.ty (ton)	Total incomes (Euro)	Q.ty (ton)	Total incomes (Euro)
16,91	VPB glass, plastics, metals	12.563	212.488	4.759	80.486	-	-
32,76	GLASS	-	-	5.953	195.021	8.808	288.547
105,71	PB plastics, metals	-	-	4.614	487.785	6.912	730.669
			212.488		763.291		1.019.216

13

Overall economical effects

	2013	2014	Delta
Residual waste collection and transport	5.300.099	6.868.191	1.568.092
Residual waste treatment and incineration	9.050.214	5.563.844	- 3.486.370
Recyclable materials collection	14.063.648	15.049.744	986.096
Recyclable materials treatment and transport	1.957.782	2.752.128	794.346
Incomes from recyclable materials (Conai)	- 805.295	- 1.340.000	- 534.705
Street cleaning and other services	5.908.646	6.127.451	218.805
Total	35.475.094	35.021.358	- 453.736

-3,5 millions € Incineration costs

Thanks for your attention

Gabriele Folli

former Deputy Mayor for Environment
(2012-2017) Comune di Parma

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