



European Union  
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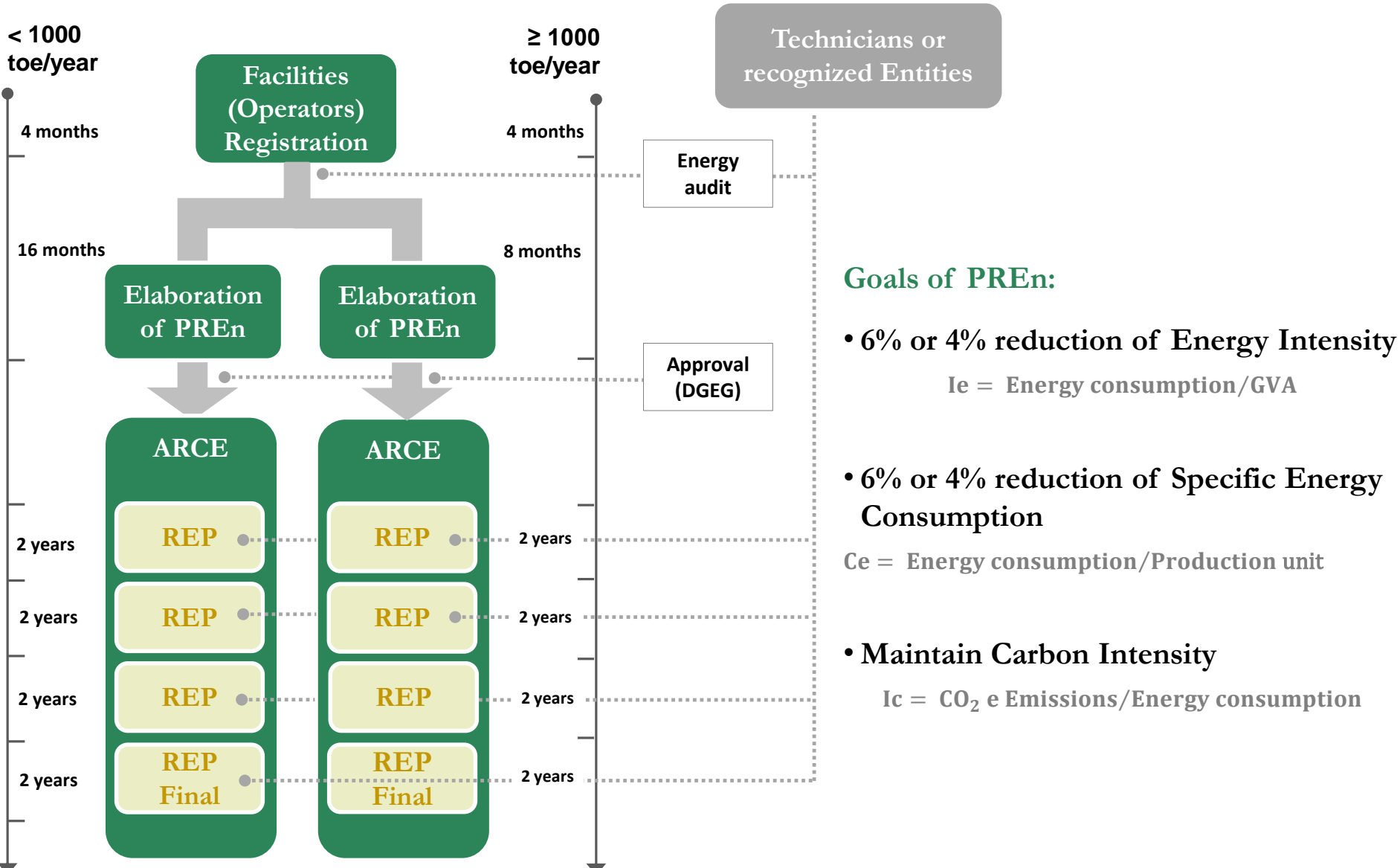
# SGCIE - Management System of the Intensive Energy Consumption

**João Paulo Calau**

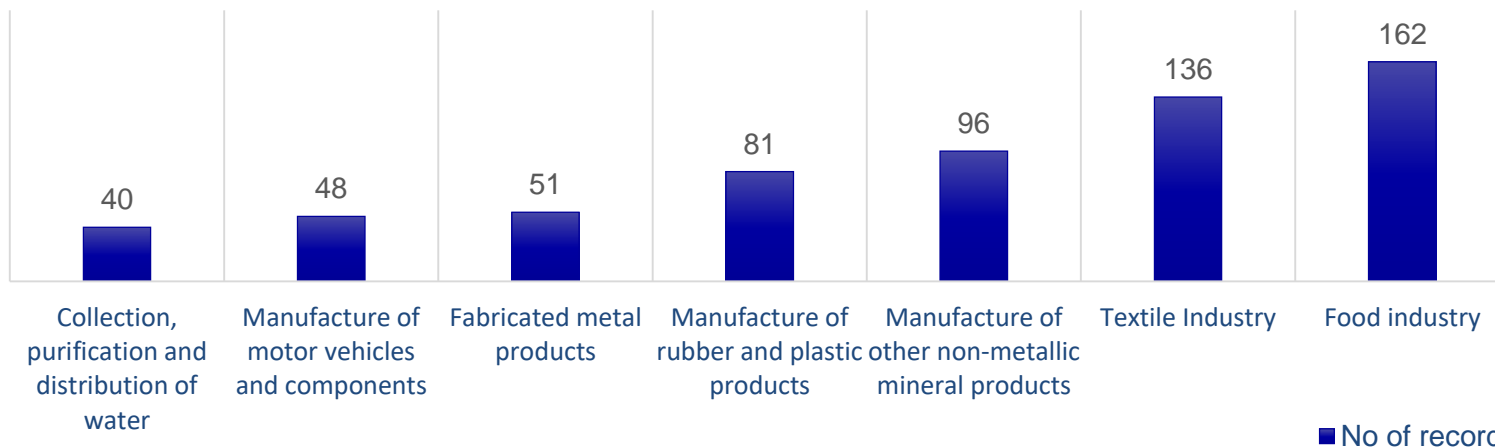
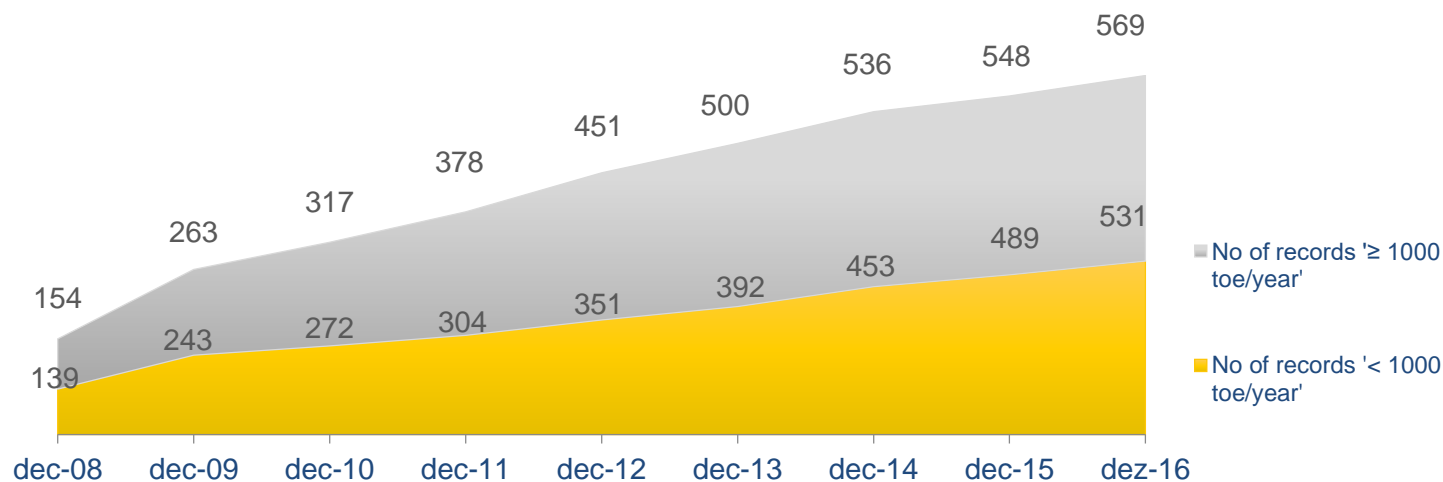
ADENE's Industry Department Director

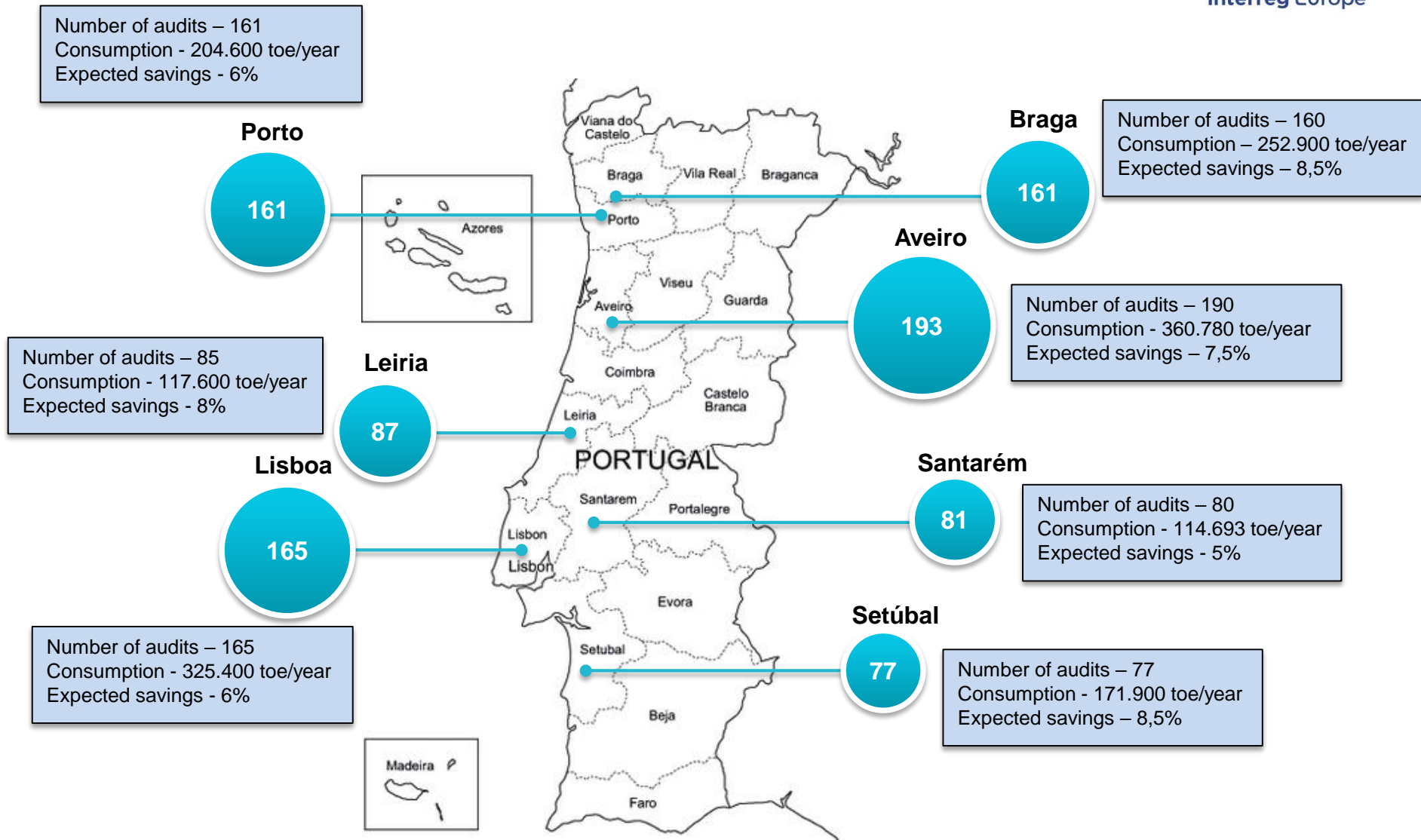
[Paulo.calau@adene.pt](mailto:Paulo.calau@adene.pt)

14 February, 2017 | Reset Workshop Leixões

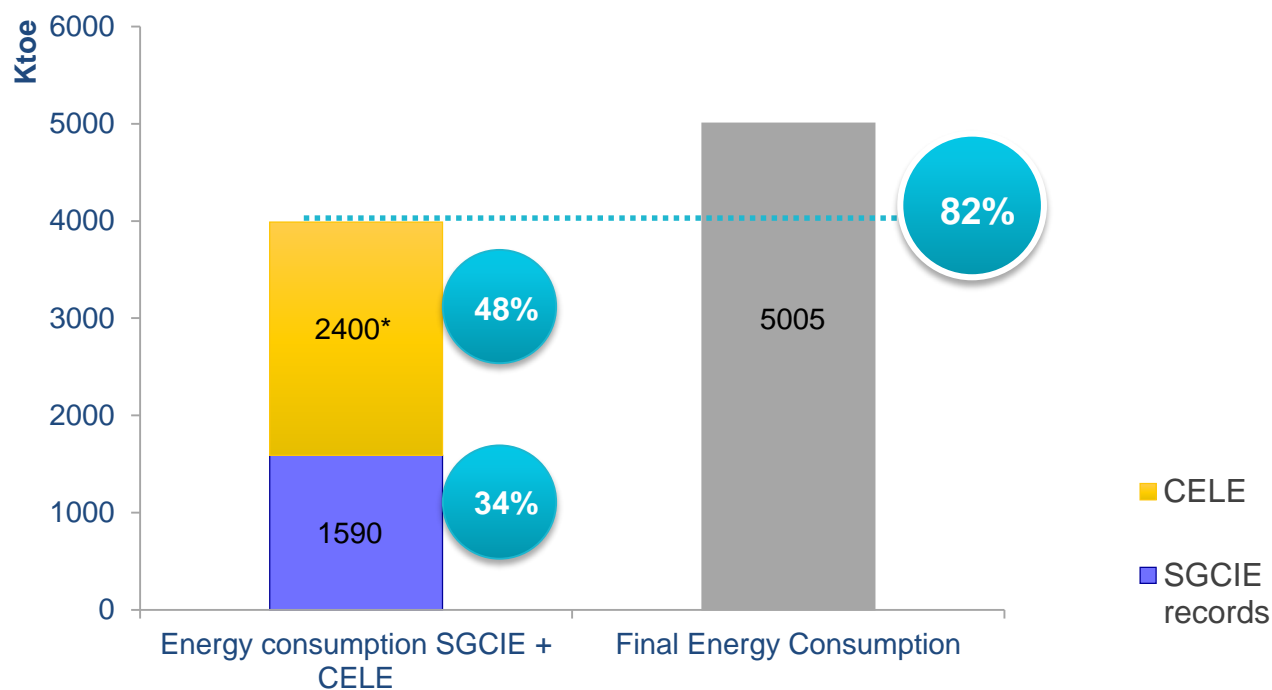


- Currently, there are 1100 operators registered on SGCIE, mostly from industrial activities



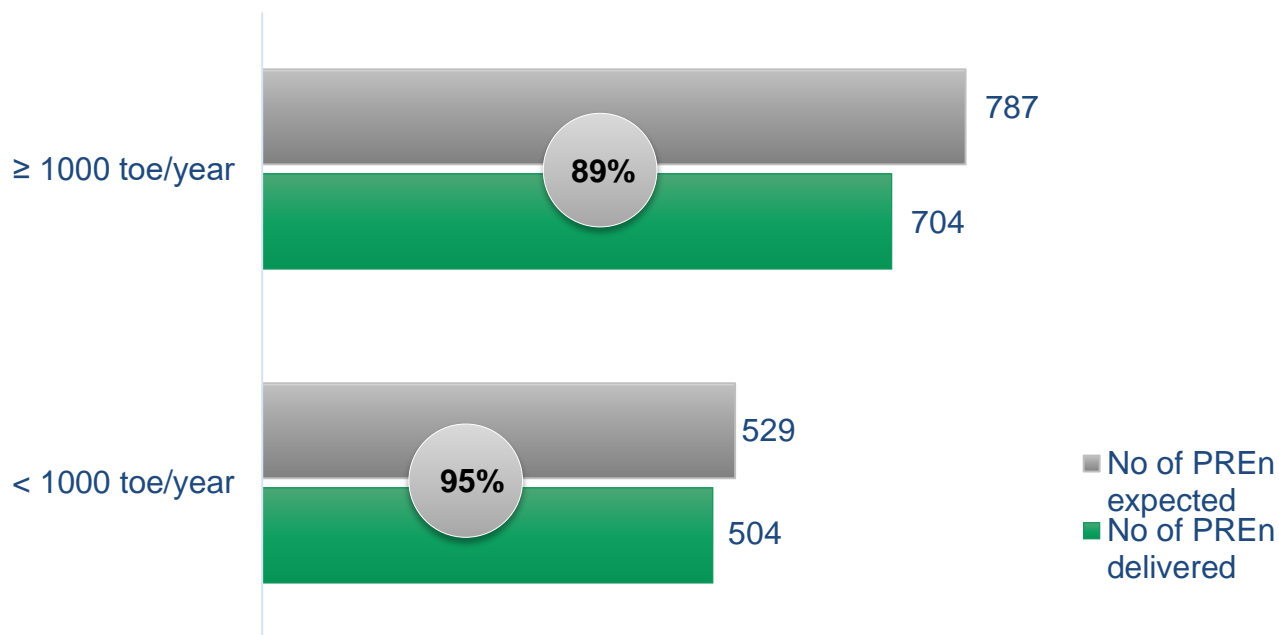


- Existing records on SGCIE totalize 1700 ktoe and represent 34% of final energy consumption in the sectors of Agriculture and Fisheries, Extractive Industry, Manufacturing Industry and Public Works and Construction (Oil non-energy)

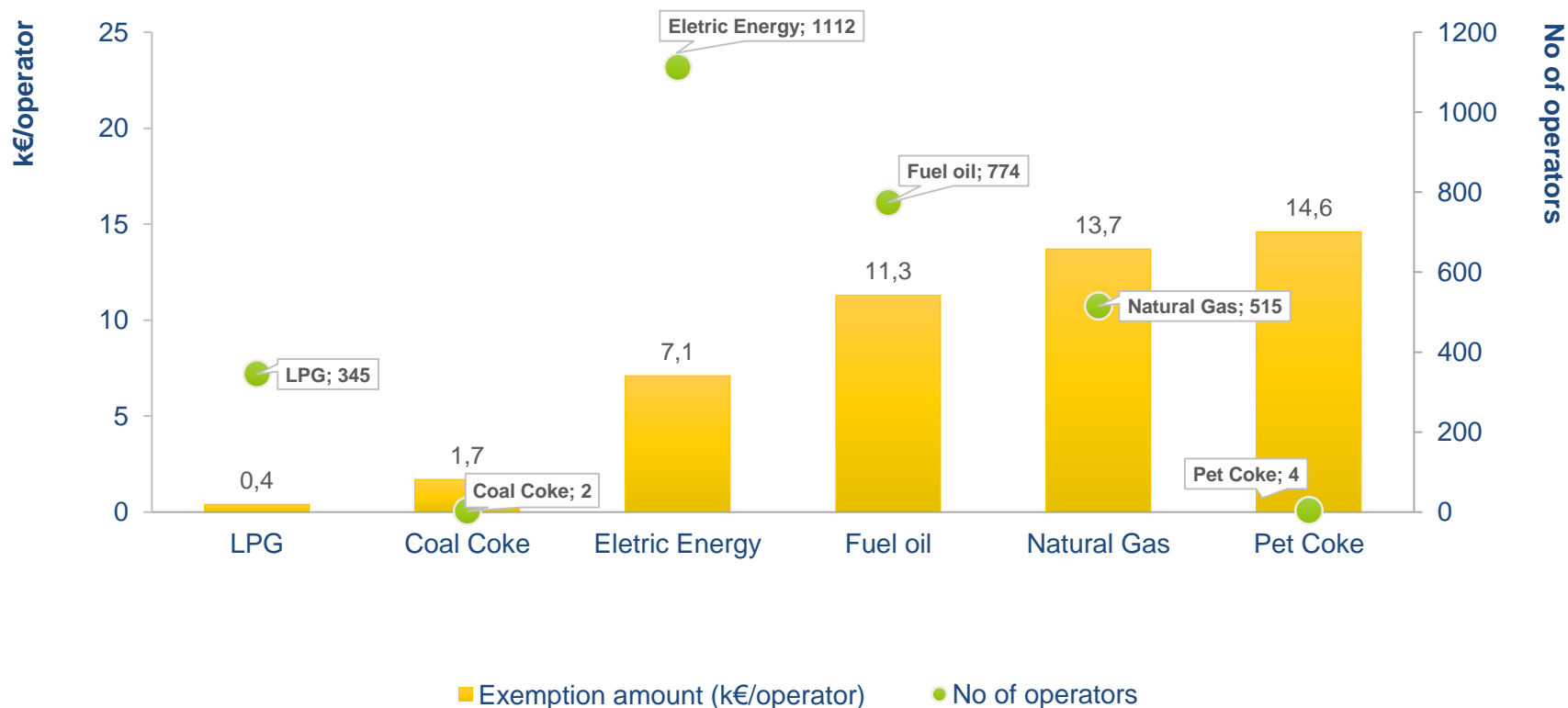


\* Estimated value

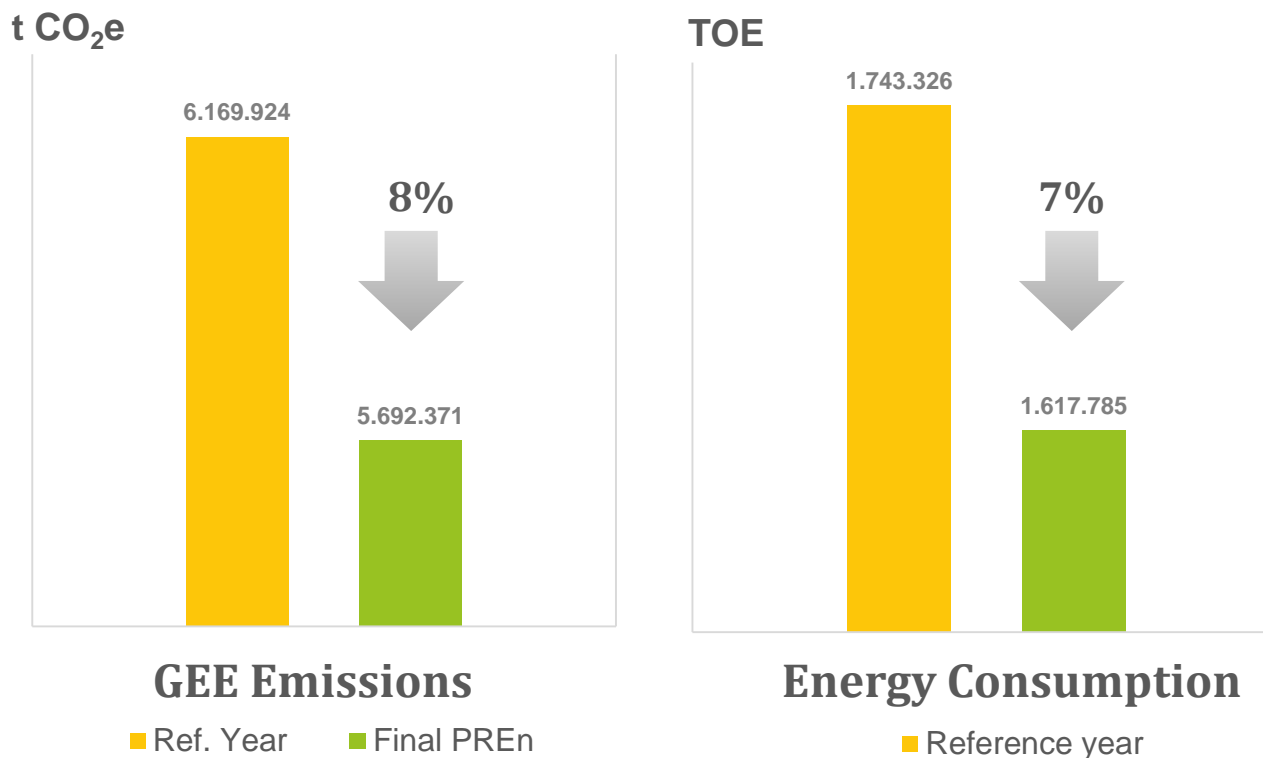
- Records of 1208 PREn (1316 expected until Dec.2016) – including new cycles
- Execution rate: average 92%



- ISP (tax on petroleum and energy products) exemption including natural gas and electricity since 2013



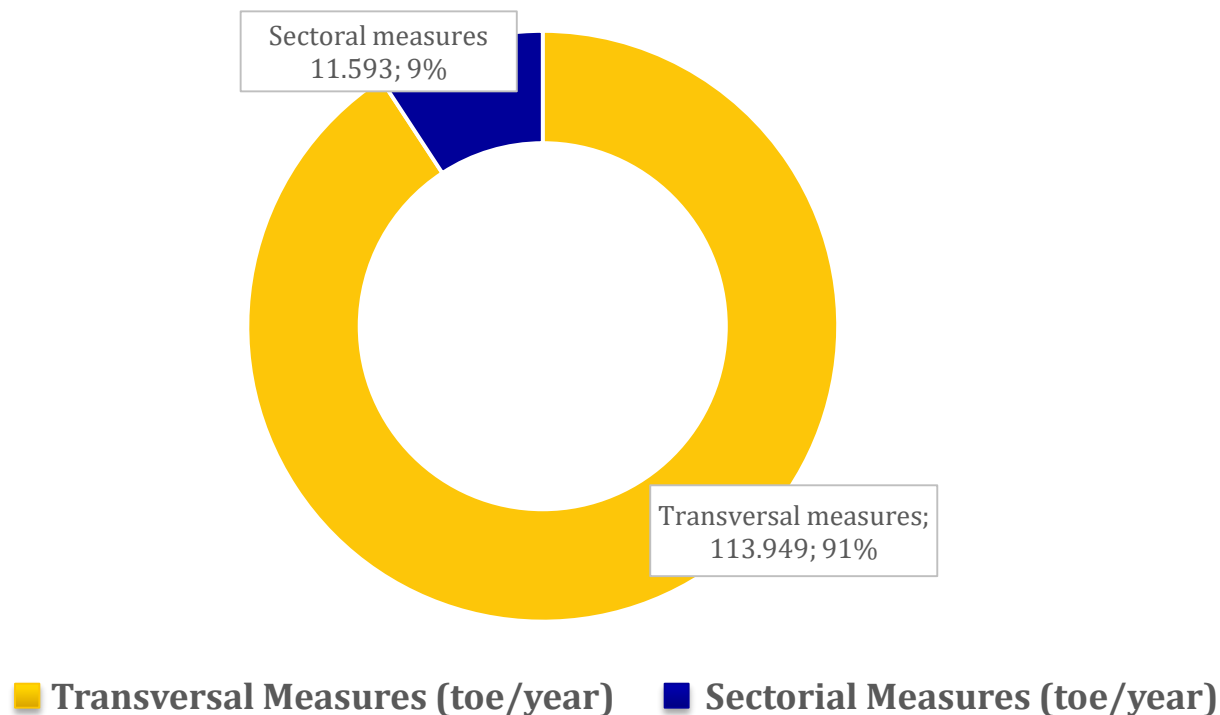
- Approved Energy Consumption Rationalization Plans (1112 – including new cycle) will reduce energy consumption by 125.542 toe and GEE emissions by 477.553 t CO<sub>2</sub>e



Note: Electricity consumption refers to final energy (1 kWh = 86x10<sup>-6</sup> toe)









- Global energy reduction potential: 125.542 toe/year – including new cycle



Note: Electricity consumption refers to final energy (1 kWh =  $86 \times 10^{-6}$  toe)

## ■ Transversal Measures - Global

	Global reduction potential (toe/year)	Payback (years)	Reduction cost per toe (€/toe)	GEE reduction (t CO2e)	Reduction potential per operator (toe/year)
Human resources training and education	2.097	,31	226	8.290	12,41
Industrial cooling	2.278	4,32	4.309	12.289	17,66
Efficient Lightning	8.153	3,36	3.773	44.551	10,51
Process integration 	5.273	,92	374	14.851	239,70
Thermal insulation 	9.757	1,22	532	27.045	24,33
Maintaining intensive energy-using equipment	1.787	2,69	1.822	6.806	12,77
Monitoring and control	9.251	1,62	1.186	37.812	22,67
Engines optimization	5.269	2,28	2.273	28.601	14,40
Others 	17.173	3,94	2.502	56.791	41,78
Heat recovery 	26.260	2,02	780	69.047	85,82
Pumping systems	2.561	2,08	2.135	13.996	14,72
Combustion systems 	12.596	2,14	1.488	50.750	40,63
Compression systems	7.241	2,17	2.240	39.254	11,60
Ventilation systems	2.803	1,44	1.433	14.766	13,04
Transport	564	3,54	4.127	1.694	18,81
Waste water treatment 	886	1,29	627	2.628	80,52
<b>Total</b>	<b>113.949</b>	<b>2,43</b>	<b>1.625</b>	<b>429.170</b>	<b>-</b>

Note: Electricity consumption refers to final energy (1 kWh = 86x10<sup>-6</sup> toe)

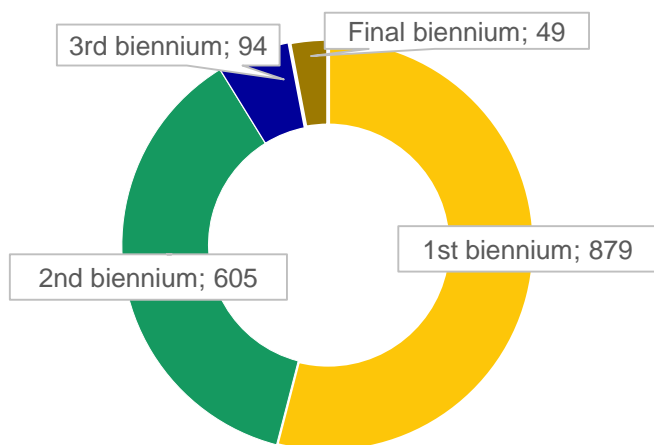
## ■ Transversal Measures - Textile

	Global reduction potential (toe/year)	Payback (years)	Reduction cost per toe (€/toe)	GEE reduction (t CO2e)	Reduction potential per operator (toe/year)
Human resources training and education	158	,01	6	507	26,28
Industrial cooling	45	4,22	5.448	246	22,54
Efficient Lightning	1.228	2,46	2.574	6.713	13,35
Thermal insulation ★	2.157	,64	305	6.029	27,30
Maintaining intensive energy-using equipment	309	,31	183	969	19,32
Monitoring and control	773	1,21	613	2.452	25,76
Engines optimization	596	1,56	1.667	3.258	15,69
Others	1.769	3,58	2.524	8.044	40,20
Heat recovery ★	6.177	1,78	807	16.762	99,63
Pumping systems	83	1,59	1.557	452	4,36
Combustion systems ★	965	1,77	2.139	6.655	28,38
Compression systems	532	1,23	1.230	2.906	7,60
Ventilation systems	176	1,04	897	955	11,74
Waste water treatment ★	324	,26	127	870	80,90
<b>Total</b>	<b>15.292</b>	<b>1,85</b>	<b>1.183</b>	<b>56.819</b>	<b>-</b>

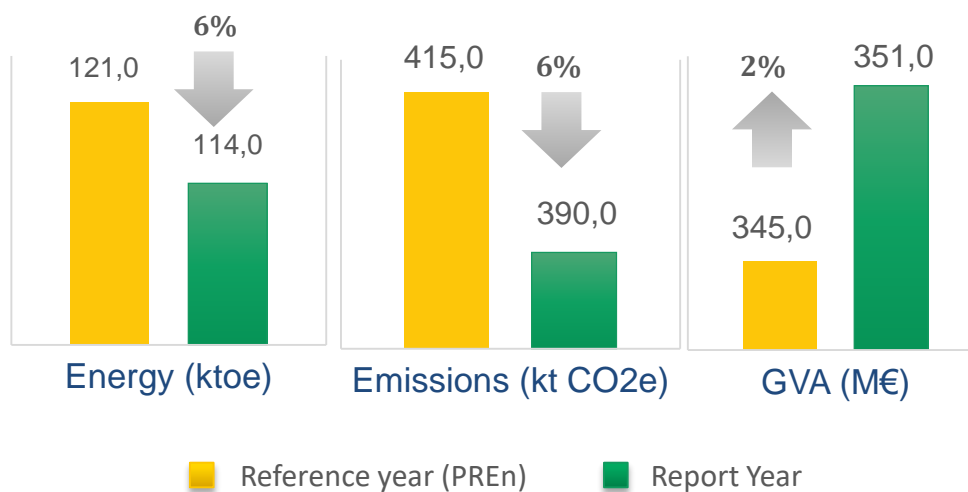
Note: Electricity consumption refers to final energy (1 kWh = 86x10<sup>-6</sup> toe)

- 1627 Reports delivered – 49 regarding final biennium

### Reports delivery



### Results



Note: Electric consumption refers to final energy (1 kWh = 86x10<sup>-6</sup> toe)

## BIG DATA SGCI



**CONSUMO DE ENERGIA**  
MONITORIZAÇÃO



**AUDITORIA E MEDIDAS**  
INVESTIMENTO, ECONOMIAS



**INFORMAÇÃO TÉCNICA**  
EQUIPAMENTOS, PERFORMANCE



**CARACTERIZAÇÃO DO SETOR**  
BENCHMARKING, BI



**ESTATÍSTICA REGIONAL**  
MUNICIPIOS, INE, AGÊNCIAS DE ENERGIA



**ESTATÍSTICA NACIONAL**  
INE, PORDATA, EUROSTAT, PNAEE





# RESET

Interreg Europe



European Union  
European Regional  
Development Fund

## Thank you!

Questions welcome



*Project smedia*