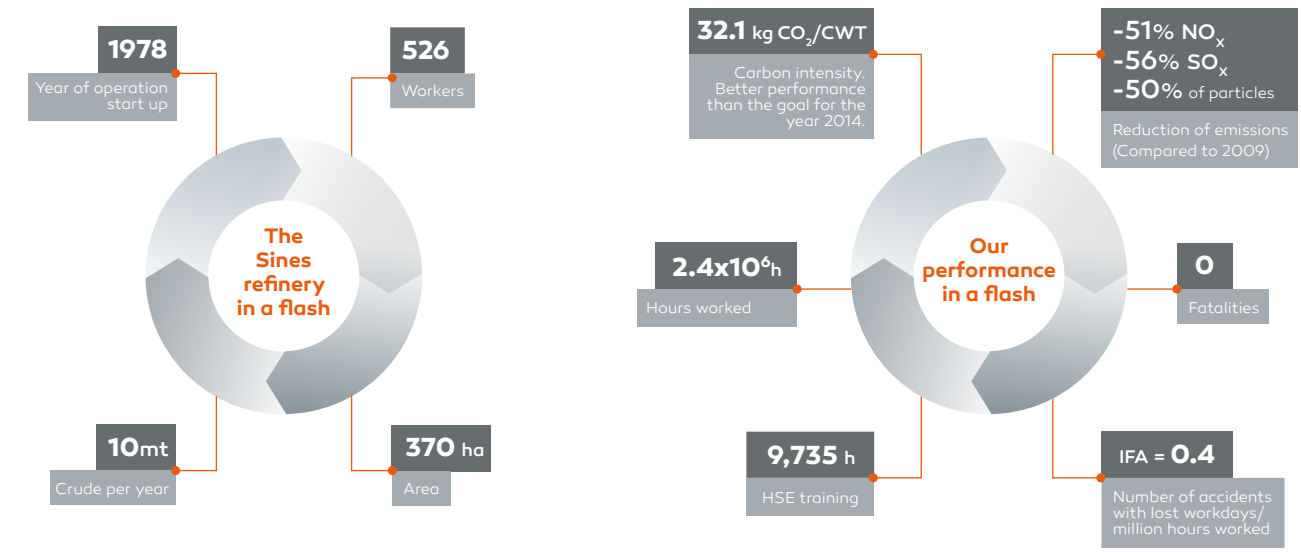


# The Sines refinery in a flash



# Targets and goals 2016

- We have adopted the following goals:
- Zero personal, property lost and environmental accidents\*
  - Consolidation of the trend towards reduced consumption of resources and emissions by activity level.
  - Reduction on containment losses, maintaining zero accidents causing environmental damage.
- \* (with significant impact – classes 3 and 4)

**“Our objective is sustainable development, by promoting a balance between operational efficiency and environmental impact and the impact of the use of the products by the end consumer”**

Martinho Correia, Refining Operational Director

WATER CONSUMPTION PER FEEDSTOCK PROCESSED (m <sup>3</sup> /t)		WASTEWATER PER FEEDSTOCK PROCESSED (m <sup>3</sup> /t)		NO <sub>x</sub> EMISSIONS PER FEEDSTOCK PROCESSED (g/t)		EII	
0.67	0.55	0.35	0.31	93	85.4	87.5	94.2
Goal 2015	Result 2015	Goal 2015	Result 2015	Goal 2015	Result 2015	Goal 2015	Result 2015
Goal 2016: 0.62		Goal 2016: 0.34		Goal 2016: 92		Goal 2016: 93.4	

SO <sub>x</sub> EMISSIONS PER FEEDSTOCK PROCESSED (g/t)		PARTICLE EMISSIONS PER FEEDSTOCK PROCESSED (g/t)		kg CO <sub>2</sub> /CWT		SIMULATED EXERCISES (NO.)	
500	474	18	14	32.0	32.1	5	7
Goal 2015	Result 2015	Goal 2015	Result 2015	Goal 2015	Result 2015	Goal 2015	Result 2015
Goal 2016: 520		Goal 2016: 17		Goal 2016: 31.9		Goal 2016: 5	

PREVENTIVE ENVIRONMENTAL AND SAFETY OBSERVATIONS (HOURS)		ACCIDENT RATE (NO. OF LOST WORKDAY INJURIES PER MILLION HOURS WORKED)	
1,020	1,231	0.0	0.4
Goal 2015	Result 2015	Goal 2015	Resultado 2015
Goal 2016: 1,020		Goal 2016: 0.0	

All the data published herein was independently verified by PricewaterCoopers which has issued a declaration of conformity that is available on the Galp website.

energy creates energy



Safety, Health and Environment Performance 2015

# Sines Refinery



# Refinery Management Message



**Martinho Correia**  
Refining Operational Director  
Sines Refinery Director

Dear colleagues,

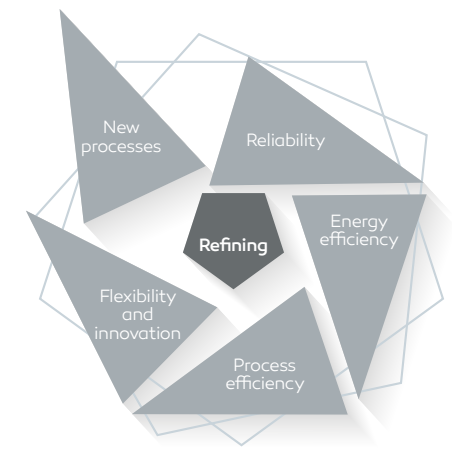
This is the Environment, Quality and Safety databook for the Galp Sines refinery, which reflects greater integration and optimisation of the national refining system.

2015 is a milestone for the agility, availability and efficiency of the Galp Energia refining system. We succeeded in quickly adapting and responding to market dynamics as we kept our facilities at high levels of operational availability, thereby ranking us among the best refiners in Western Europe. The year also witnessed the physical implementation of several measures to create value and improve the energy efficiency of refineries.

In an extremely dynamic external environment and within a sector that has become more competitive than ever, the refining strategy was carefully adjusted in order to respond to new challenges and solidify our positioning. Our strategy is based on two major pillars: eco-efficiency and evolutionary modularity.

The first, a recent concept, aims at sustainable development and promotes balance between operational efficiency throughout the value chain, environmental impact and consequences from the use of products by the end user.

Evolutionary modularity improves our refining system, adjusting it to new market trends and always implementing the ideas with the highest results/allocated resources rate.



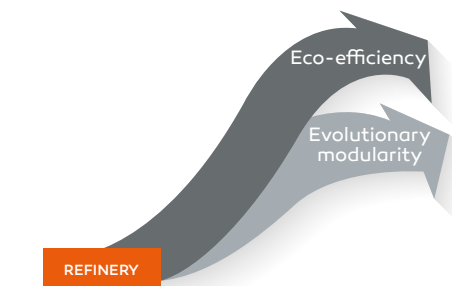
Regarding environmental and safety indicators, 2015 undoubtedly demonstrated an excellent positioning.

The ongoing focus on the commitment and awareness of our employees concerning safety matters ensured that the lost workdays frequency index represented best practices in European refining. Additionally, the Sines Refinery achieved the impressive milestone of 6 million hours worked involving no lost workday accidents.

We successfully committed in 2015 to measures and technologies that allowed us to minimise the environmental impact of our operations, with direct consequences on the improvement of quality of industrial effluent directly affecting surrounding communities.

The years ahead point to a refining system that is more and more environmentally friendly and protective of natural resources, while promoting the growth of communities in which we operate, always within the context of investment in sustainable activity.

Looking towards the future is our way of approaching our day-to-day work.





# Our activities

In 2015 the activity of the Sines Refinery was characterized by the speed, availability and efficiency of its facilities.

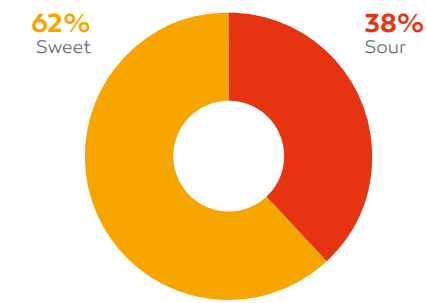
The high operational availability of the installation meant that we are close to being one of the best refineries in Western Europe.

In terms of Environment and Safety indicators, 2015 was an excellent year for the facility, with a total of 6 million hours transpiring without any lost workdays accidents.

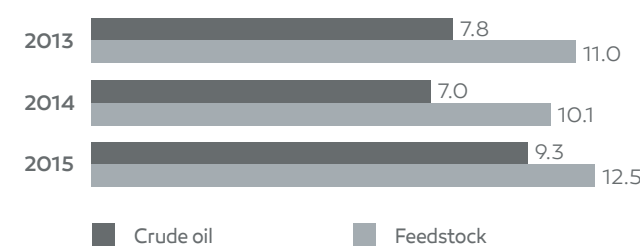
Work carried out in the areas of Safety, Environment, Availability, Energy Efficiency, Combating Waste and Cost Control, creating value for the organization and enabling rapid responses to market demands, will continue to guide us along the path to success.

## Raw materials

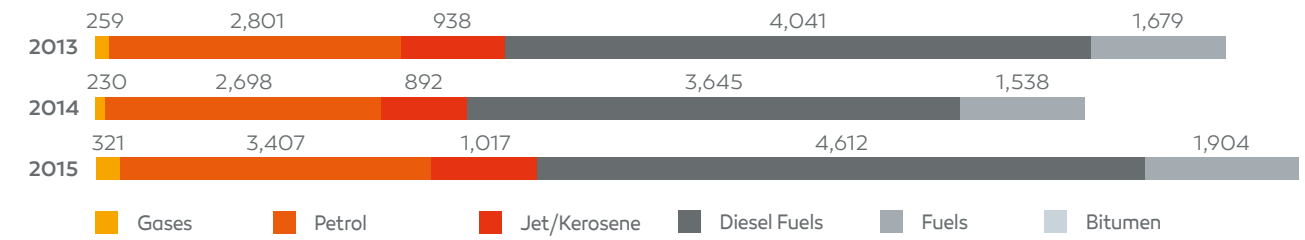
PROPORTION OF CRUDE OIL PROCESSED IN 2015



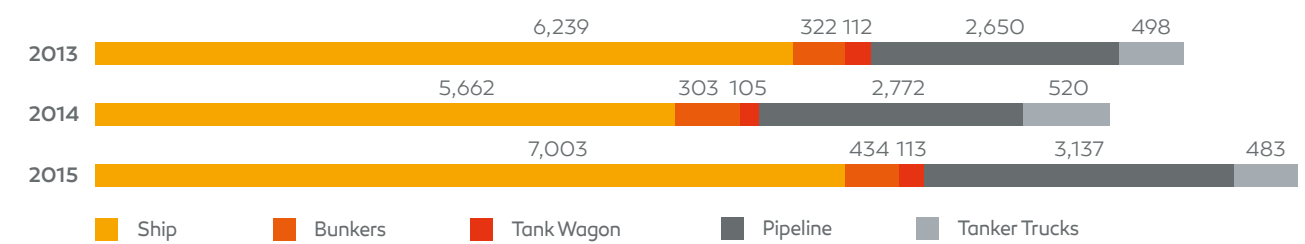
FEEDSTOCK AND CRUDE PROCESSED (10<sup>6</sup> t)



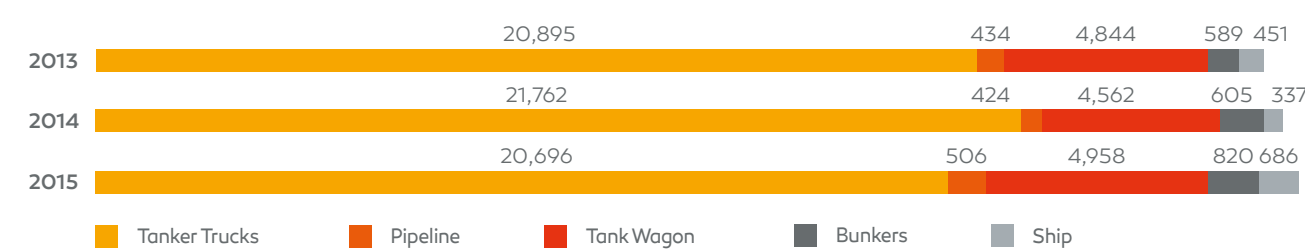
FINISHED PRODUCTS (10<sup>3</sup> t)



PRODUCTS DISPATCHED BY SHIPMENT (10<sup>3</sup> t)

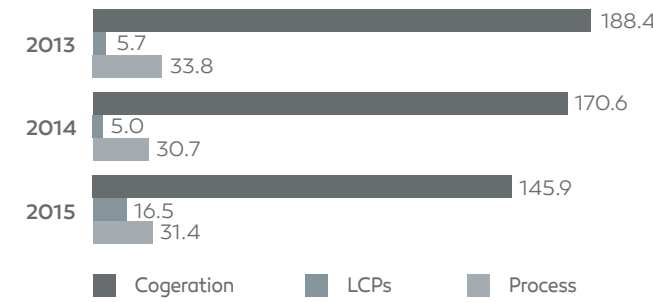


NUMBER OF DISPATCHES BY SHIPMENT

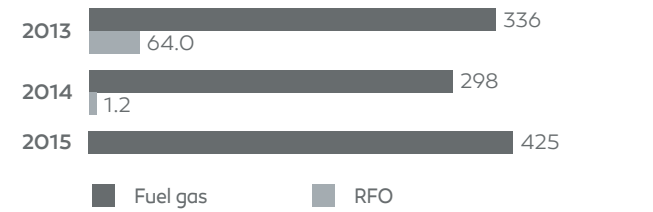


## Consumption of resources

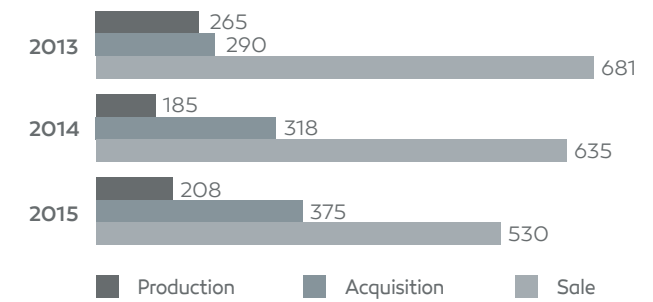
CONSUMPTION OF NATURAL GAS (10<sup>3</sup> t)



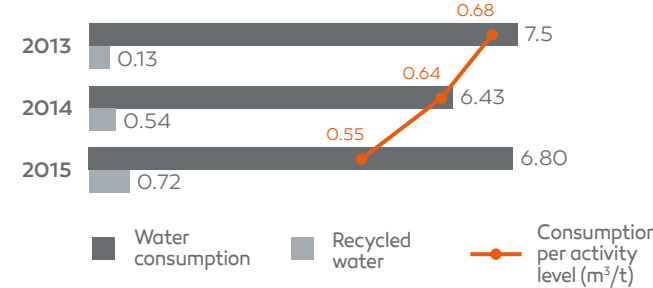
CONSUMPTION OF FUEL GAS VS CONSUMPTION OF THE RFO (10<sup>3</sup> t)



ELECTRICAL ENERGY (GWh)

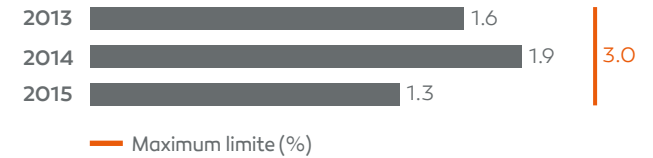


CONSUMPTION OF WATER AND RECYCLED WATER (10<sup>6</sup> m<sup>3</sup>)



## Impact management

SULPHUR CONTENT IN RFO



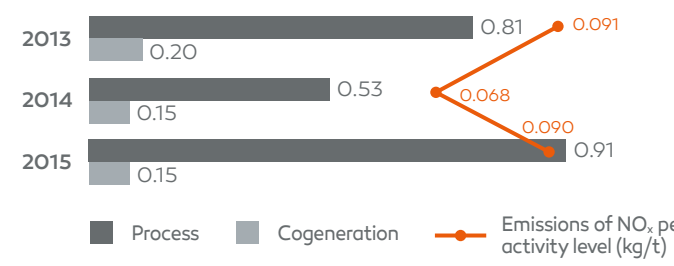
RECOVERED SULPHUR (10<sup>3</sup> t)



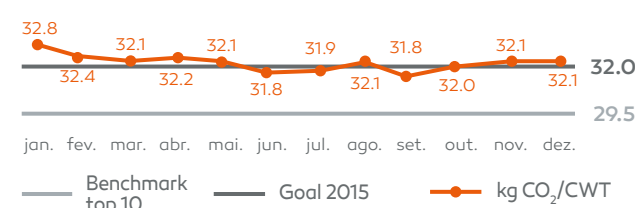
EMISSIONS OF SO<sub>2</sub> (10<sup>3</sup> t)



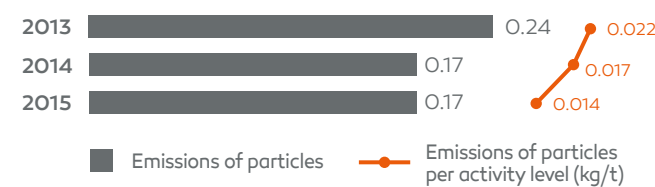
EMISSIONS OF NO<sub>x</sub> (10<sup>3</sup> t)



kg CO<sub>2</sub>/CWT

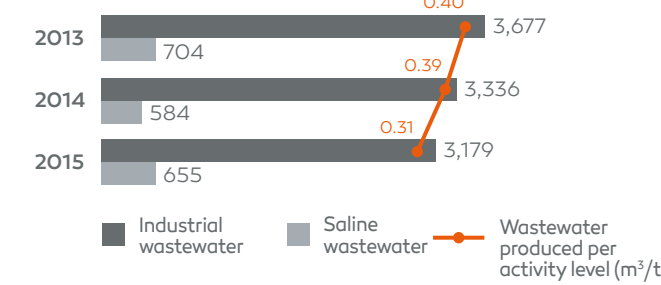


EMISSIONS OF PARTICLES (10<sup>3</sup> t)

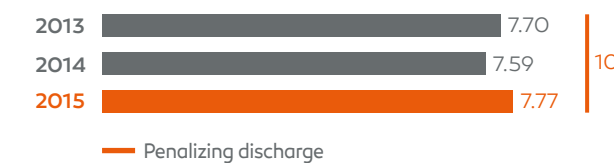


## Production of wastewater

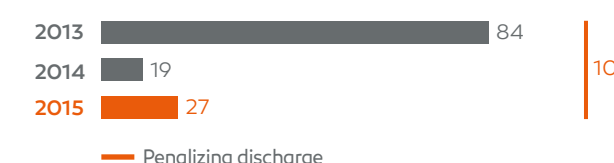
WASTEWATER PRODUCED (10<sup>3</sup> m<sup>3</sup>)



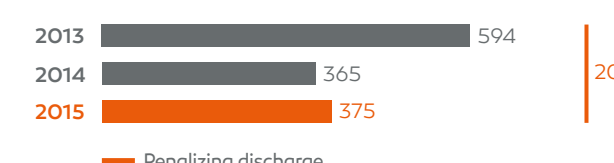
pH OF THE INDUSTRIAL EFFLUENT DISCHARGED INTO THE WWTP OF RIBEIRA DE MOINHOS



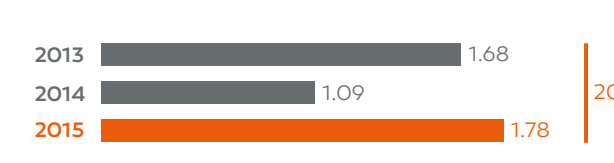
OILS AND FAT OF THE INDUSTRIAL EFFLUENT DISCHARGED INTO THE WWTP OF RIBEIRA DE MOINHOS (mg/l)



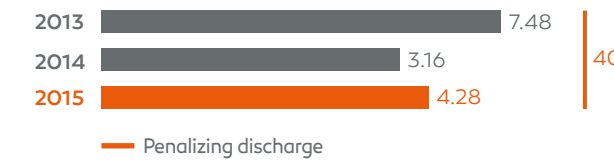
COD OF THE INDUSTRIAL EFFLUENT DISCHARGED INTO THE WWTP OF RIBEIRA DE MOINHOS (mg/l)



SULPHIDES OF THE EFFLUENT DISCHARGED INTO THE WWTP OF RIBEIRA DE MOINHOS (mg/l)

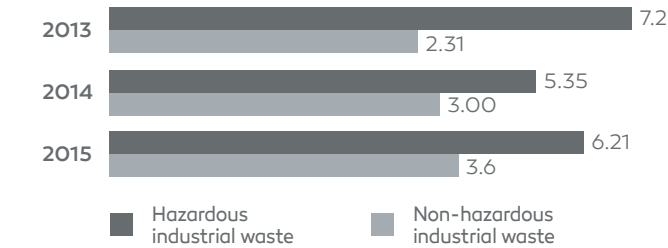


PHENOLS OF THE EFFLUENT DISCHARGED INTO THE WWTP OF RIBEIRA DE MOINHOS (mg/l)

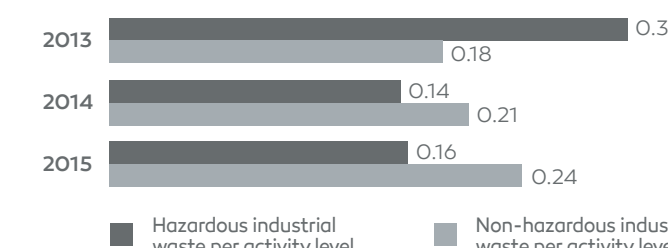


## Waste production

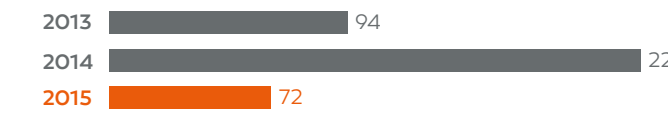
INDUSTRIAL WASTE PRODUCED (10<sup>3</sup> t)



INDUSTRIAL WASTE PRODUCED PER ACTIVITY LEVEL (kg/t)



WASTE EQUIVALENT TO URBAN SOLID WASTE PRODUCED (t)

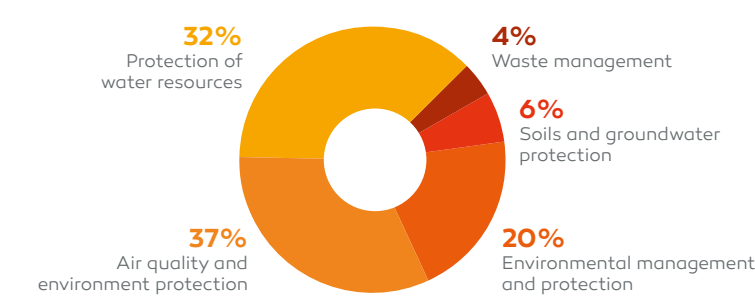


WASTE SENT TO RECYCLING OPERATIONS (t)



## Costs and investments in the environment

COSTS AND INVESTMENTS IN THE ENVIRONMENT - 9.0 M€



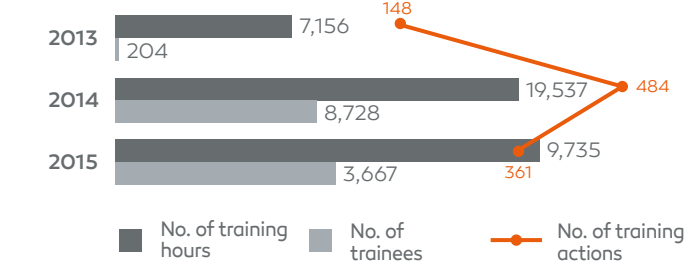
# Safety: from prevention to monitoring

## SGSPAG

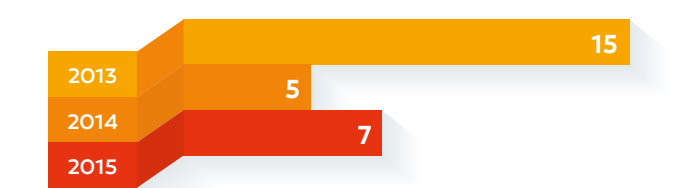
The safe operation of an establishment involving major hazard levels, such as the Sines refinery, depends upon overall management and the clear definition of responsibilities and procedures, with allocation of the required resources and technological solutions as established in the Safety Management and Serious Accident Prevention System.

The Sines refinery has received recognition from the relevant authorities, confirming that the facility's operations are based on principles that limit impacts on humans and the environment.

TRAINING IN HSE



NUMBER OF TRAINING AND SIMULATION EXERCISES

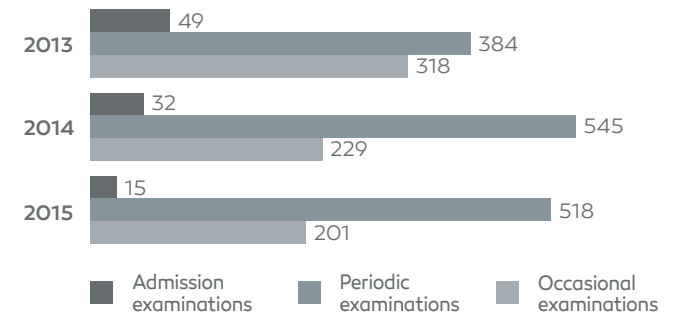


HOURS OF PREVENTIVE ENVIRONMENTAL AND SAFETY OBSERVATIONS



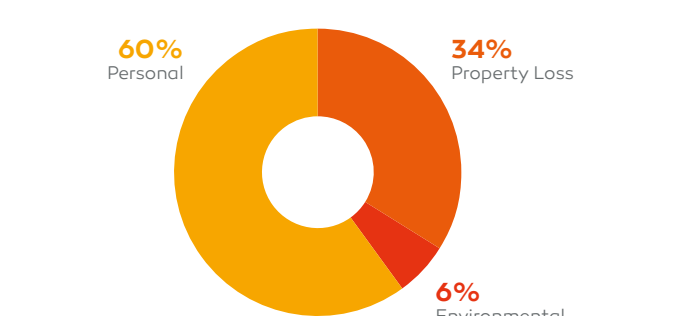
## Medical examinations

NUMBER OF MEDICAL EXAMINATIONS PERFORMED

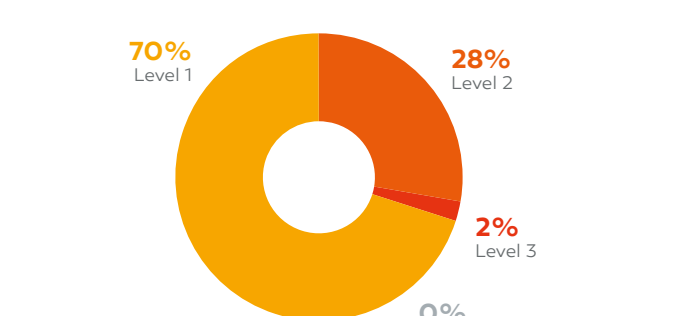


## Accidents

ACCIDENTS PER TYPE



TOTAL ACCIDENTS BY LEVEL



NUMBER OF LOST WORKDAYS ACCIDENTS AND ACCIDENT RATE (GALP+CONTRACTORS)

