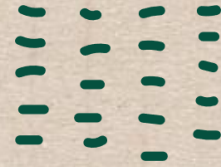




Waste management on Mallorca

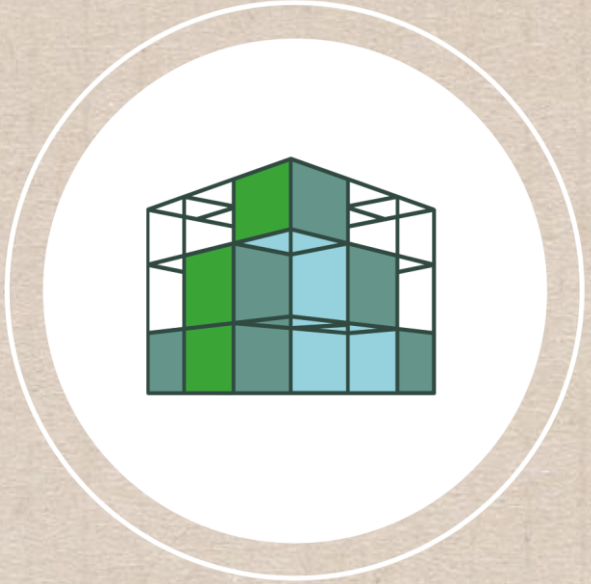


Speaker's name

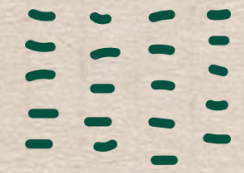
Department / Area / Speaker's email

TIRME, S.A.





**Waste management
on Mallorca**



The background to the creation of Mallorca's waste management service

1989 saw the introduction of...

1

The provision of **an integrated urban waste management service** on the island of Mallorca, a mandatory insular public service, by the Insular Government of Mallorca (Consell de Mallorca).

2

The amortization of investments, operating costs and industrial profits reverted by means of the **levy (tariff) per ton of urban waste** defrayed by the local authorities.

3

Integrated unit processing of Mallorca's urban waste by means of **incineration with energy recovery** which has evolved over time.

The background to the creation of Mallorca's waste management service

1989 saw the introduction of...

4

Various **transfer stations located at strategic points** around the island in order to optimise waste transportation.

5

Transportation between transfer stations and the treatment plant under the responsibility of the Insular Government of Mallorca (Consell de Mallorca).

6

The local authorities assume responsibility for **collecting household waste and transporting it** to the Insular Government's facilities.

We are Tirme, S.A.

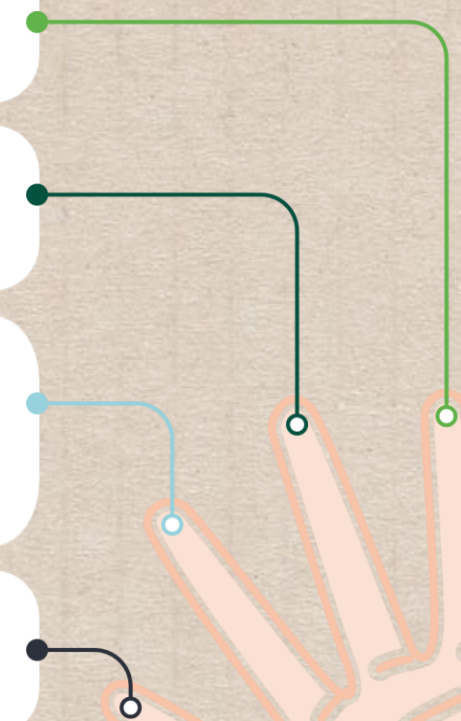
The background to our beginnings...

The Insular Government of Mallorca opted for an **indirect management model of this public service.**

Our **company holds the concession for the insular public service for the processing of urban and assimilable waste.**

We signed our **first concession agreement on 21st May 1992.** It was revised on 16th February 2001, 4th May 2007, 20th June 2013 and 30th January 2019.

The **administrative concession** is in effect **until 2041.**






What's included in the concession? Three phases:



-  **Design.**
-  **Construction.**
-  **Operations.**

The processing of:

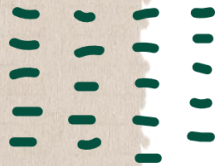
-  **Household waste** and assimilable to household waste.
-  **Sludge** from wastewater treatment plants.
-  **Non-hazardous waste** from the processing of CDW (Construction and Demolition Waste), BW (Bulky Waste) and ELT (End of Life Tyres).

The transportation of urban waste from the transfer stations to the processing plants.

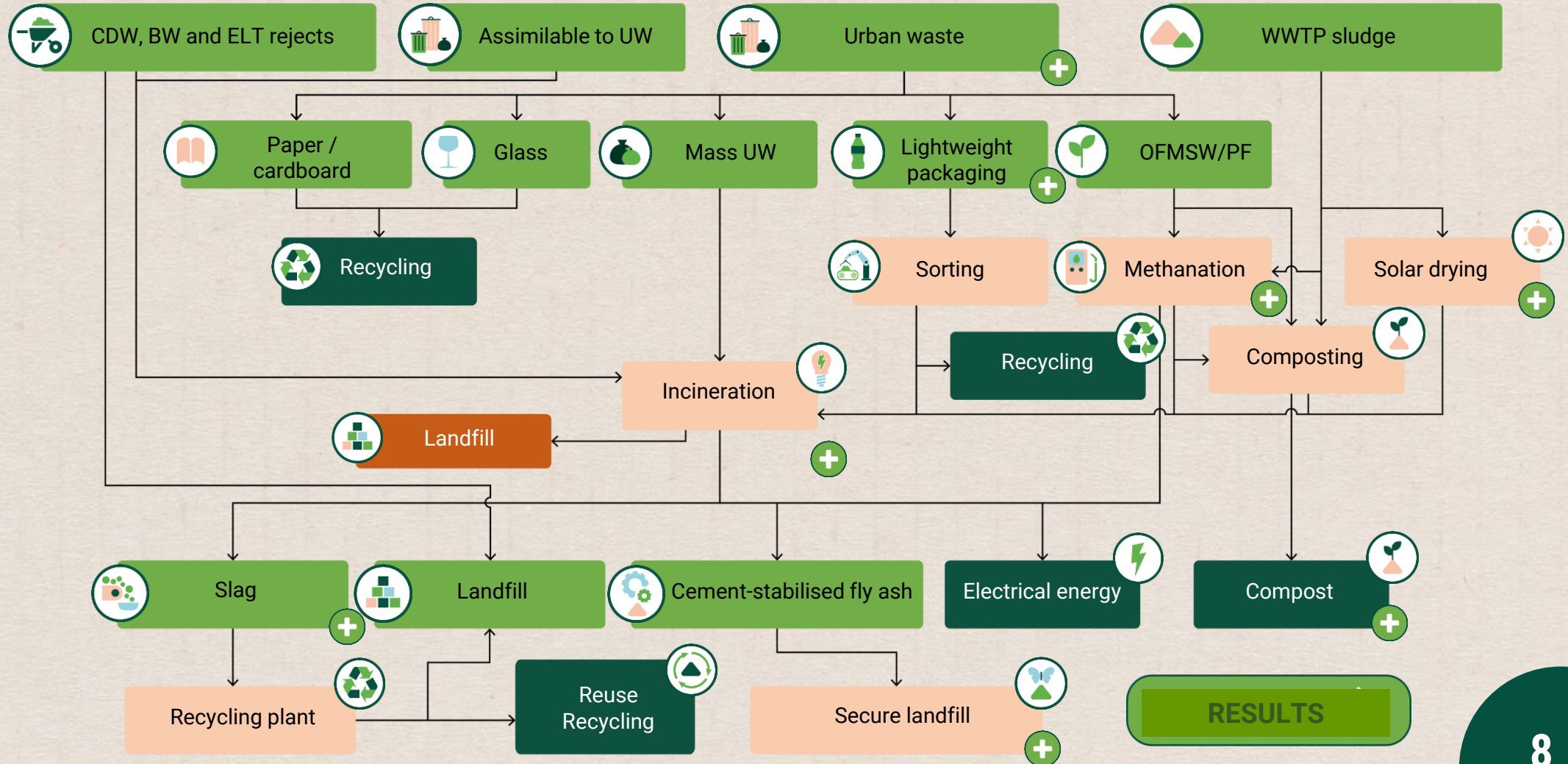
The **commercialisation of by-products generated** by waste management.

Mallorca's non-hazardous waste management model

We have moved from 100% non-hazardous waste to landfill to:



How have we achieved optimum waste management?



Our facilities on Mallorca

Son Reus Area

- Energy Recovery Plant (ERP)
- Secure Landfill
- Eco-aggregate Production Plant (EPP).

Can Canut

- Can Canut Offices

Alcúdia

- North Transfer Station

Can Canut Area

- Environmental Education and Information Centre
- Lightweight packaging sorting plant
- Methanation Plant
- Solar Drying Plant for Wastewater Treatment Sludge
- Compost Plant

Santa Margalida

- CDW reject landfill

Binissalem

- Centre Transfer Station

Manacor

- East Transfer Station

Felanitx

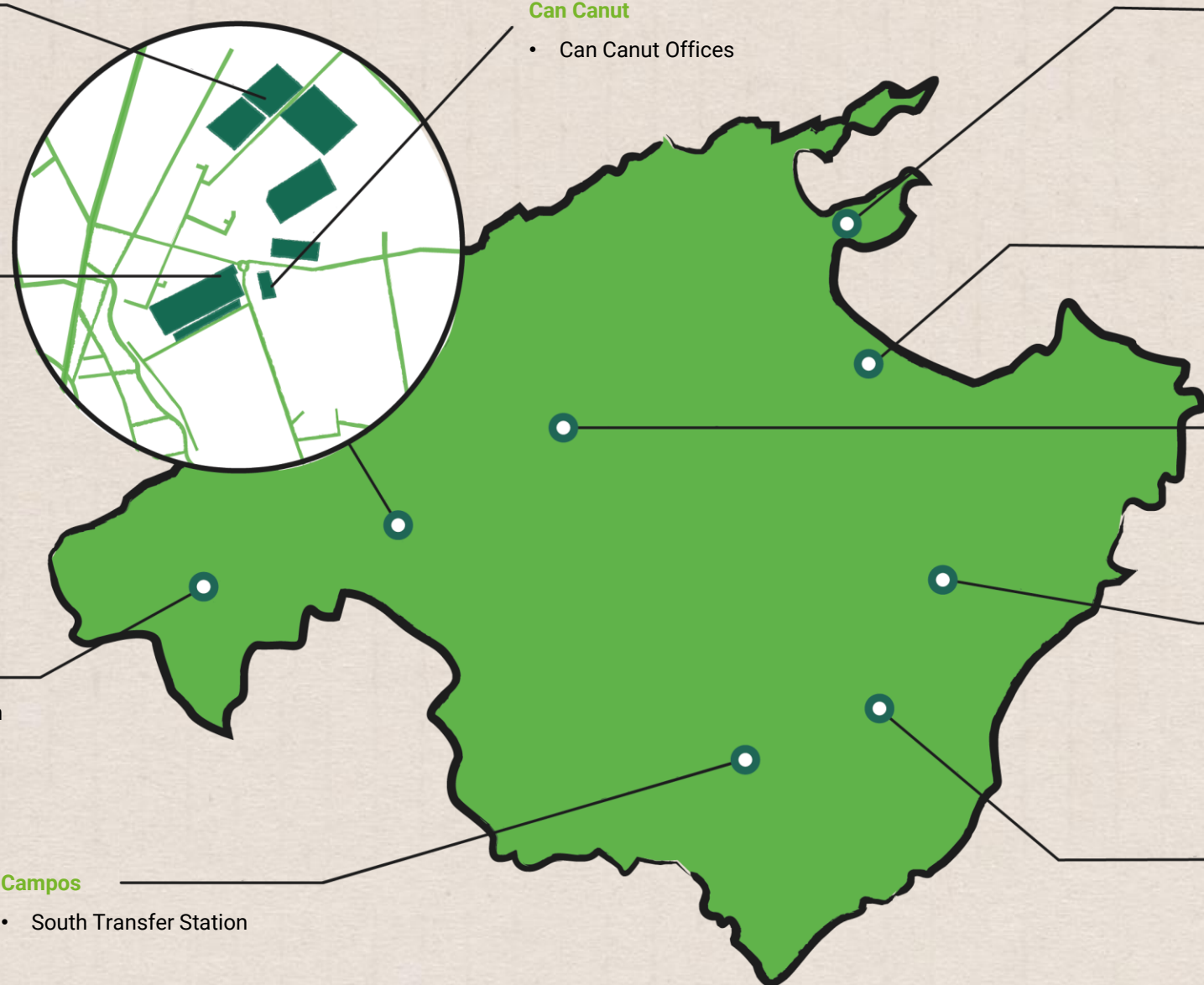
- Compost Plant

Calvià Area

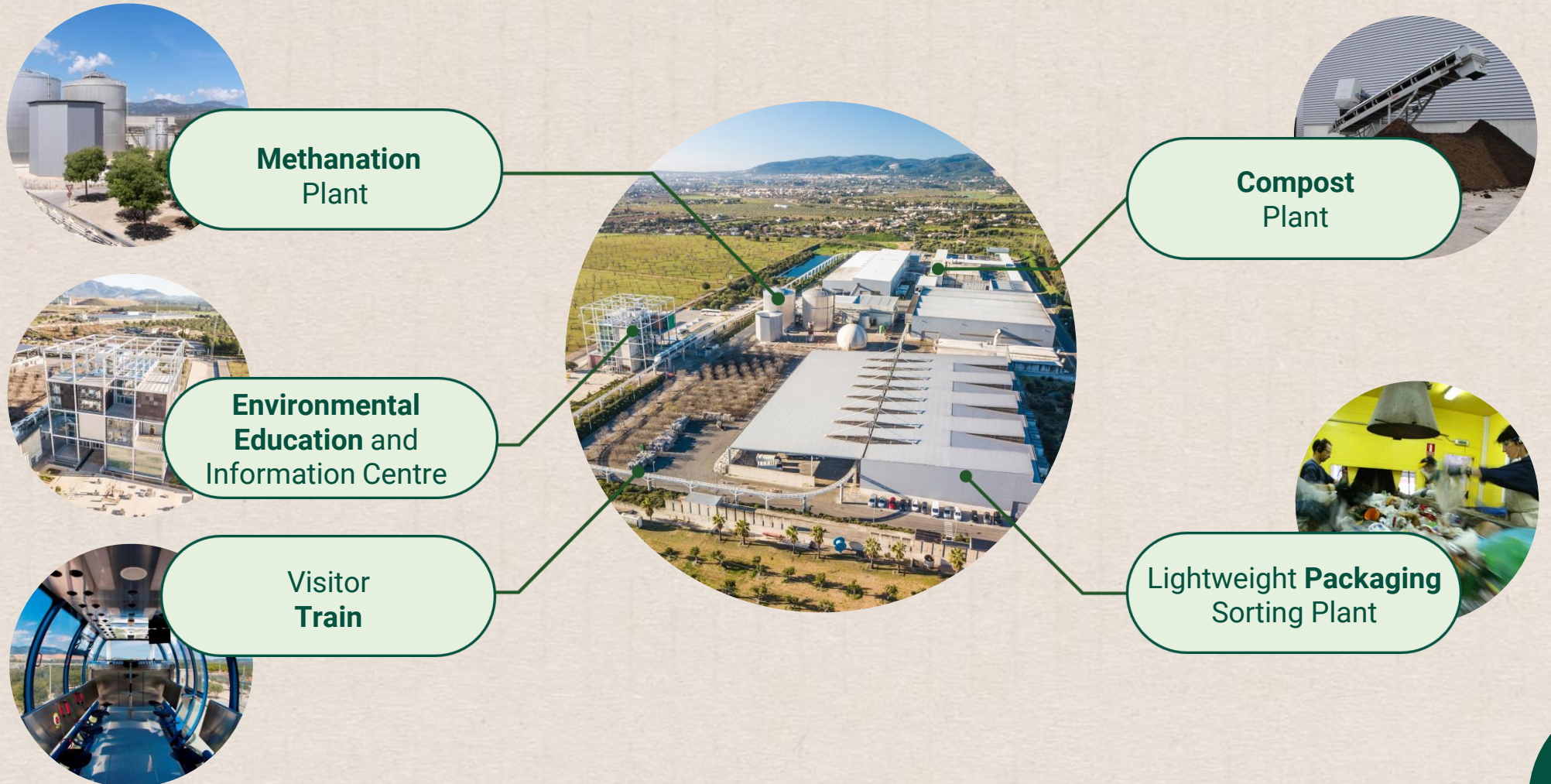
- West Transfer Station
- Compost Plant

Campos

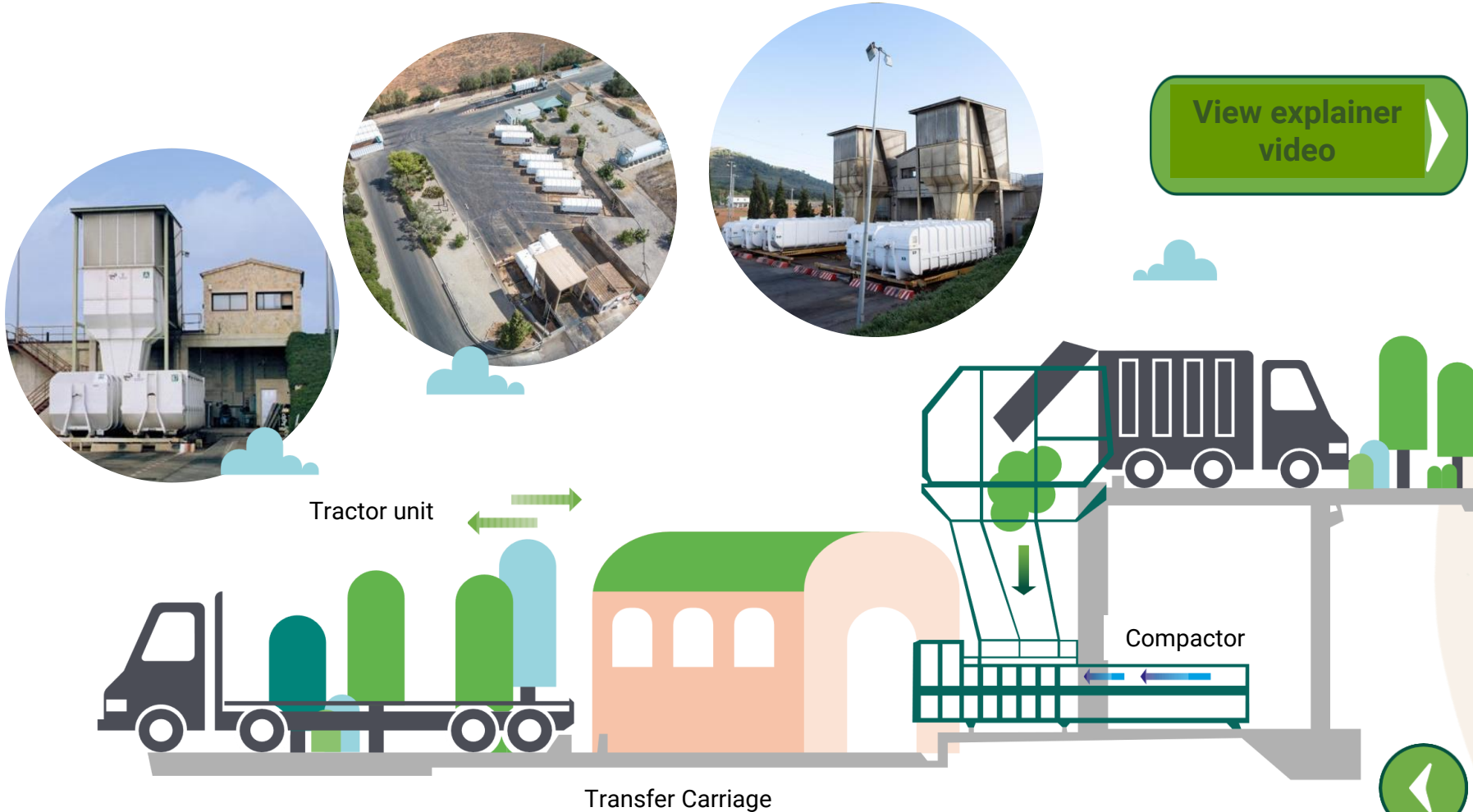
- South Transfer Station



What are our facilities like?



What are our facilities like?



What are our facilities like?



Our **packaging plant** receives all packaging waste, which is then sorted by material type for later recycling.



View explainer video



What are our facilities like?



The **methanation process** transforms organic waste (OFMSW and sludge) into biogas which we use to generate renewable energy.

View explainer video



What are our facilities like?



At our **compost plants**, we process organic waste (sludge, digestate and plant fraction) to produce compost which can then be used as a natural nutrient for crops.

View explainer video



What are our facilities like?



At our **solar drying plant**, wastewater treatment sludge is processed for later use in the production of energy.

View explainer video



What are our facilities like?

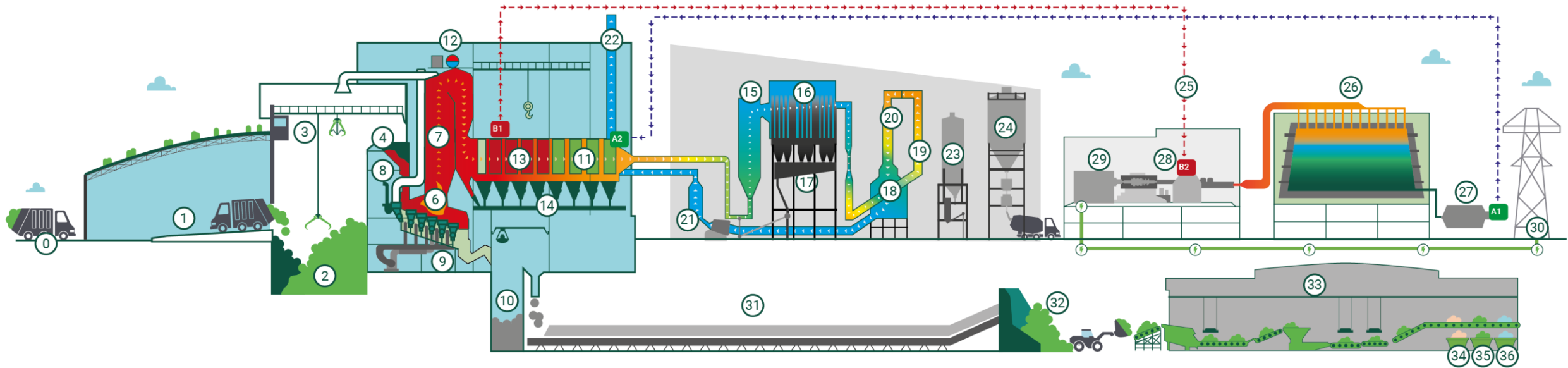


At Tirme's **energy recovery plant**, waste that cannot be recycled is incinerated to produce energy. 50% of this energy is renewable.

[View explainer video](#)



Tirme's waste management process



WASTE TREATMENT

RECEPTION

- 0 WEIGHBRIDGE
- 1 TIPPING PLATFORM
- 2 PIT
- 3 BRIDGE-CRANE

FURNACE-BOILER

- 4 FEED HOPPER
- 5 PRIMARY AIR
- 6 INCINERATION GRATE
- 7 AUXILIARY BURNERS
- 8 SECONDARY AIR
- 9 DESLAGUER
- 10 SLUDGE PIT
- 11 ECONOMISERS
- 12 EVAPORATORS AND DRUM
- 13 SUPERHEATERS
- 14 RAPPING SYSTEM & FLY ASH CONVEYOR

GAS TREATMENT

- 15 SEMIDRY REACTOR
- 16 BAG FILTER
- 17 RECIRCULATION
- 18 GAS > GAS EXCHANGER
- 19 GAS > STEAM EXCHANGER
- 20 SCR DeNOx
- 21 DRAUGHT FAN
- 22 CHIMNEY
- 23 REAGENT SILOS
- 24 CEMENTATION PLANT



WATER-STEAM CYCLE

- 25 SUPERHEATED STEAM
- 26 AIR CONDENSER
- 27 FEED WATER



BOTTOM ASHES TREATMENT

- 31 CONVEYOR BELTS
- 32 RECEPTION SILOS
- 33 SELECTION AND PROCESSING:
SIEVES, PRESS, GRINDER, FERROUS SEPARATORS,
FOUCAULT SEPARATORS



ENERGY GENERATION

- 28 STEAM TURBINE
- 29 GENERATOR
- 30 ELECTRICAL ENERGY TO GRID

- 34 ECO-AGGREGATES
- 35 FERROUS METALS
- 36 NON-FERROUS METALS

What are our facilities like?



At our **eco-aggregate production plant**, we process the slag from the ERP in order to recover the metal and mineral fractions.

[View explainer video](#)



What are our facilities like?

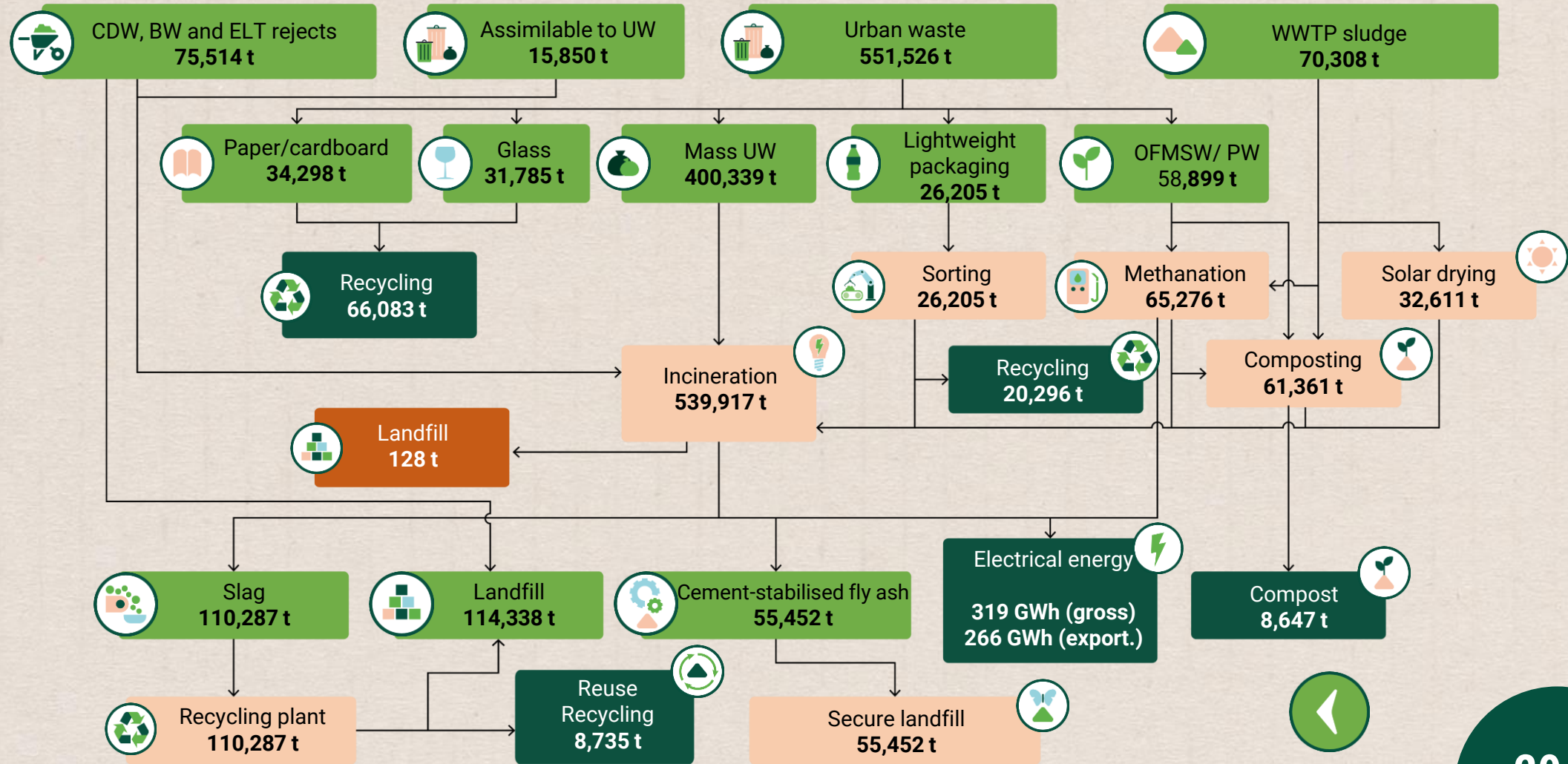


Our **secure landfill** receives the gas cleaning waste generated during the energy recovery process. This waste is previously stabilised by mixing it with cement and water.

[View explainer video](#)



2022 results



TIRME's contribution to society

We are committed to doing more than just improving the quality of life of Mallorca's residents and visitors: our goal is to contribute value to our society in the following areas:



ensuring the protection of our natural environment.



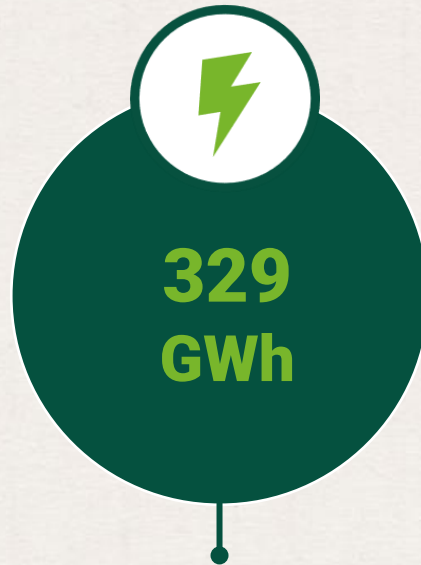
providing the best possible working conditions.



Contributing to its development and sharing our knowledge.

Our environmental contribution to society

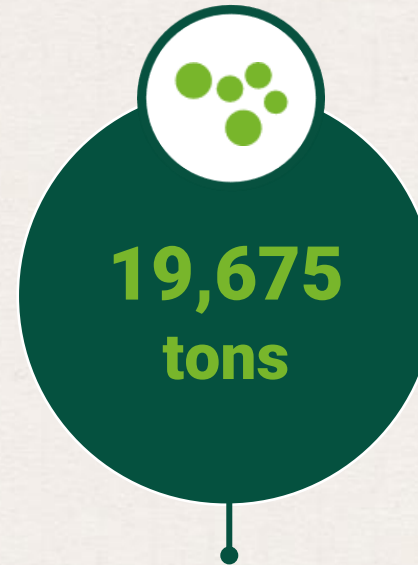
We contribute to local wealth through the circular economy



of **energy generated**, equivalent to the energy consumed by 80,000 households, 50% of which is renewable.



of **compost produced**, used as a natural fertilizer to replace chemical fertilizers.



of **eco-aggregates produced**, as a replacement for natural gravel.



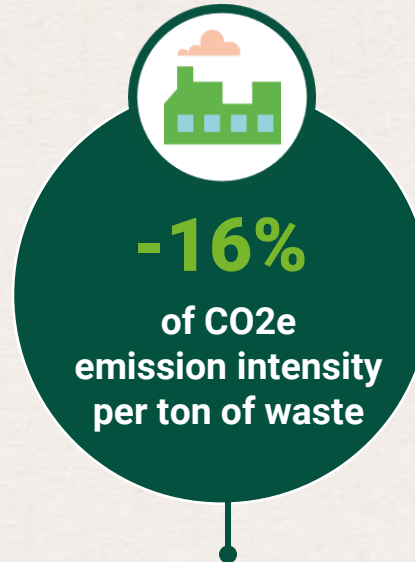
of **metal fraction recovered**, preventing the extraction of new metal from nature.

Our environmental contribution to society

We contribute to the fight against climate change



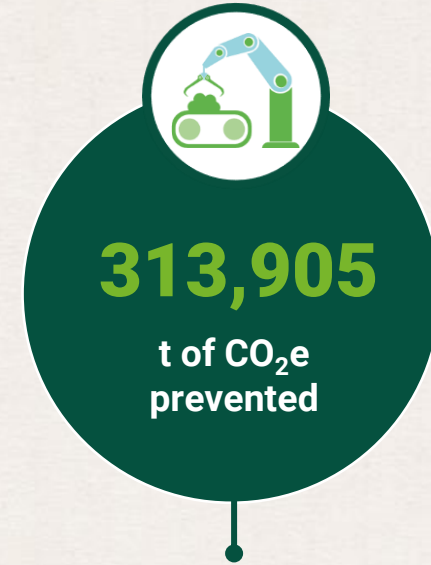
We have developed a more accurate and exhaustive **tool to calculate the carbon footprint.**



-16%

of CO₂e
emission intensity
per ton of waste

reduction achieved in
2022 in comparison
with 2017.



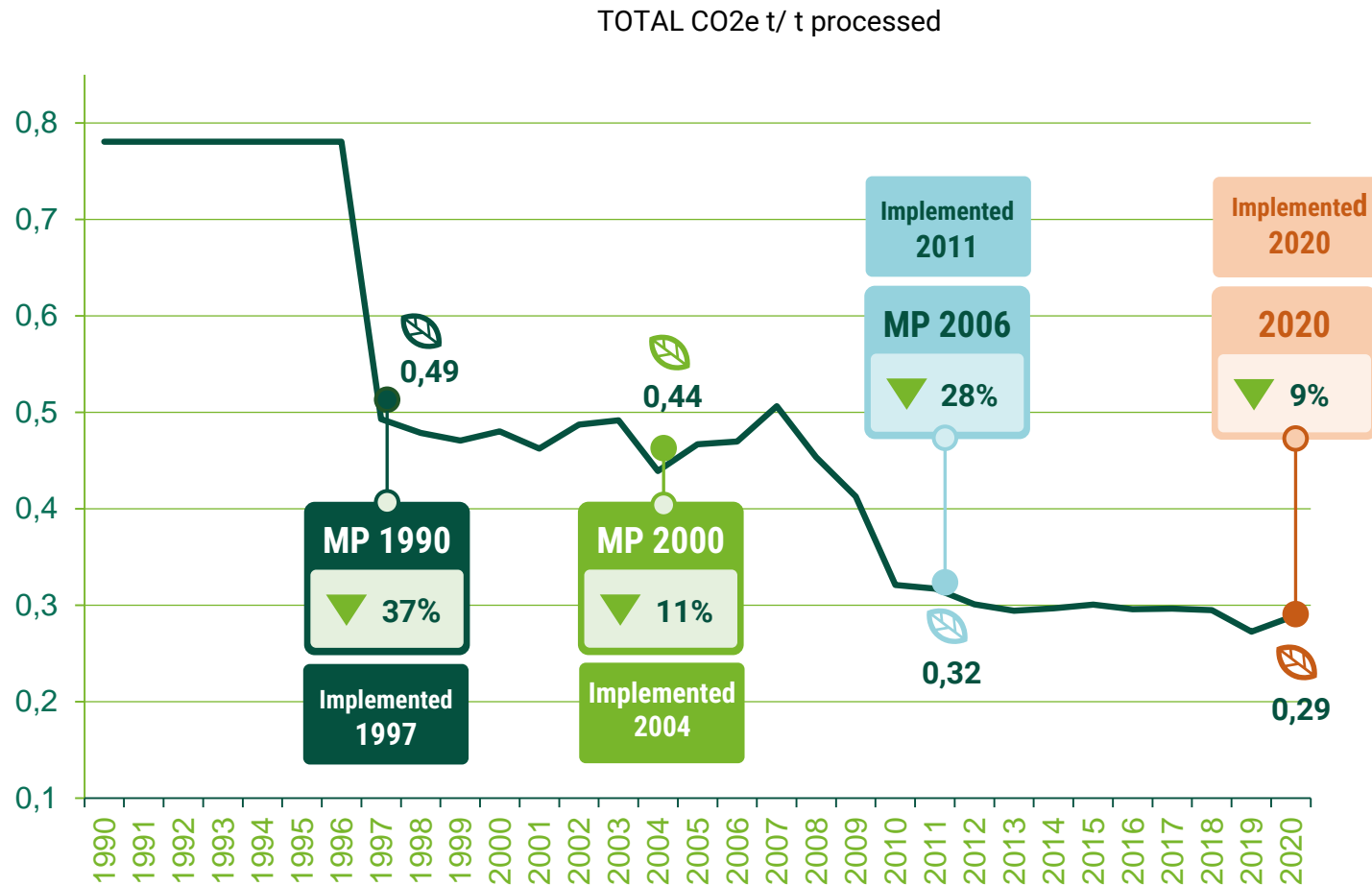
313,905

t of CO₂e
prevented

thanks to our waste
management and
recovery activity.



Evolution of the service's carbon footprint



OVERALL REDUCTION | ▼ **63%**

MP 1990
Facilities
 - Transfer Stations
 - ERP (L12)

MP 2000
Facilities
 - Methanation Phase I
 - Z1 and Peripheral Compost Plant
 - Packaging Plant

MP 2006
Facilities
 - ERP (L34)
 - Solar Drying Plant

2020
Facilities
 - Progress in Selective Collection
 - Methanation Phase II

Our environmental contribution to society

We reduce pollution and protect our island's biodiversity

- **We prevent soil and subsoil contamination** by carrying out regular inspections. To date, no incidents have been detected.
- **We have reduced atmospheric emissions** thanks to the gas and particle cleaning systems installed at our facilities. We also carrying out ongoing monitoring for control purposes.
- **We promote the protection of Mallorca's biodiversity** by collaborating with the development of conservation projects.



Our environmental contribution to society

We reduce pollution and protect our island's biodiversity

- **We measure noise levels** at our facilities in order to minimize their potential environmental and social impact. All our register comply fully with the limits in force.
- **We carry out annual odour monitoring actions** that enable us to ensure that there is no impact on the population. We also have the:
 - **NasApp**, our app enabling citizens to record any odour-related incidents.








Our environmental contribution to society

We are committed to innovation and digitalisation

Key initiatives in this area include the following:

[Finhava](#), our circular economy platform which is now a consolidated example of the successful implementation of the circular economy based on the creation of alliances with various sectors of the local economy.

Process digitalisation, including the following actions:

-  Bottom ashes monitoring.
-  Improvements to the digital supply chain.
-  Platform for document management and the digitalisation of auditing processes and risk management.
-  Supplier standardisation.
-  Scale automation.



Our environmental contribution to society

We are committed to innovation and digitalisation

R&D&I projects, highlights of which include:

- **INNORESIDU**, a new high efficiency system for organic waste recovery.
- **RESIVALORA**, new integrated waste management techniques to increase the circularity of the organization.
- **INCINOVA20**, advanced technology and high efficiency to optimize the energy use of waste.
- **ATRIC 4.0**, accelerating the recovery of combustion waste from the transition to sustainable, digital and circular industry 4.0.



Our labour contribution to our team

We generate green employment



We employ around

300

professionals



We have created

1,000

indirect jobs

Our labour contribution to our team

We generate green employment

We are committed to creating quality employment in a market niche that is directly related to environmental care: we have a team of highly skilled professionals, characterised by their **diverse and inclusive** nature and guaranteeing **equal opportunities** for all.

47
average **age**.

98%
have a **permanent contract**.

17.1 years
average **length of service**
in the company.

We hold the **Family Responsible Company Certificate** (EFR in its Spanish initials) in the B+ proactive category.

We promote workplace inclusion through our **Reconciliation and Equality Plan**.

We have **reduced the number of accidents by 50%** in comparison with 2017, and have achieved a **zero serious accident rate** in the last five years.

Our social contribution to the community

We contribute to achieving the 2030 Agenda goals

We are aligned with SDGs; our principal areas of contribution are as follows:



Our social contribution to the community

We are committed to environmental education as a means of raising awareness among the population







We use our facilities as centres for **raising awareness and educating citizens** in the importance of environment protection, focusing in particular on children. To date, around 200,000 people have visited our facilities.

Our social contribution to the community

We support our local community

We develop and participate in initiatives aimed at **contributing to the progress** of our community:

- 
 We provide **humanitarian action**, supporting groups in need.
- 
 We promote **sport as a means of social inclusion and health**.
- 
 We foment **inclusive employment**
- 
 We are committed to procuring products and services from **local suppliers** in line with our sustainability commitments.



To sum up

At Tirme...

- We process **waste for the island** and as a public service.
- We handle **urban and assimilable waste** , WWTP sludge and CDW and BW waste.
- We apply the **principle of hierarchical differentiation**.
- We integrate energy recovery as a complement to recycling in order to achieve **ZERO WASTE TO LANDFILL**.
- We have implemented a waste management model based on the **circular economy** and are positioned as a benchmark for Europe and the rest of the world.
- We apply values of **transparency and rigour** to our environmental monitoring.



To sum up

En Tirme...

- We apply the “**polluter pays**” principle.
- We apply the **best technology available** and stay ahead of future environmental regulations.
- We apply a model that permits a **reduced use of the territory and fewer greenhouse gas emissions**.
- We promote **communication and environmental education**, essential for collaboration with citizens.
- We encourage **visits to our facilities**, which provide a communication tool.





Thank you very much for your attention!

Speaker's name

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