



ADVETEC

Local waste solution, real world impact

The impact of new regulations on the cost of Energy from Waste

NERF 28th September 2023

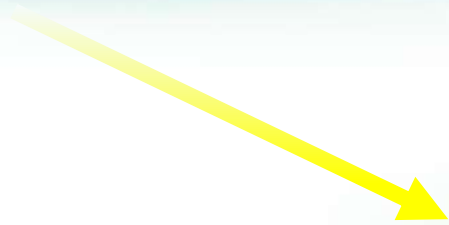
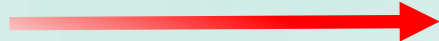
Dr Stephen Wise
Chief Strategic Development Officer

The question

- Who is aware of the incoming landfill bans?
- Who is aware of the change to the ETS scheme?
- Who knows what it all means?



What happens to waste



The changing waste landscape

Waste management costs have risen year-on-year for the last decade: a trend that will only **accelerate**.



Landfill gate charges & taxes (£)

↑
35%

Fuel prices (Red Diesel),

Energy prices,

HGV drivers and low-skilled labour (£)

↑
47%

Energy from Waste taxes (£)

↑
48%

Perceptions are **changing** too.

LANDFILL SITES ARE A MAJOR SOURCE OF POLLUTION!

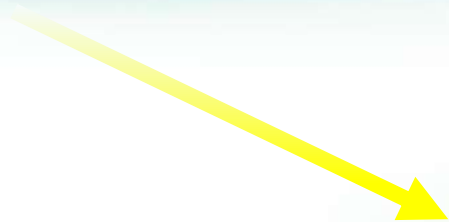
THE GREEN GENERATION: Recycling on the Up as Millennials Shun Landfill and EfW



But human behaviour is very **hard** to change.



Waste flows



The challenge

Residual Industrial and Commercial (I&C) waste is now being subjected to greater requirements

I&C waste has not been subject to the same level of scrutiny as household waste (MSW). Now greater requirements through regulations to better manage I&C waste and divert it from landfill.

Figures for I&C waste for UK, ROI, US and Italy as an example of the challenge.

Increasing push to use **waste as a resource**

General overview of trends

- Policy and legislation within Europe and UK moving to a **Circular Economy** model and away from linear model. US is starting to move forward towards this – state-specific.
- Global move towards **Net Zero Carbon** emissions from industrial processes now influencing waste and resource policy.
- **Emissions Trading Schemes** (e.g. EUETS, UKETS) create a 'tax' on carbon for industrial companies.
- **Landfill bans** for specific materials e.g. organic waste.

Country	Total I&C	To landfill	To EfW
UK	25mtpa	16.4mtpa	12.9mtpa
ROI	2.3mtpa	0.41mtpa	0.16mtpa
US	67.6mtpa	7.4mtpa	25.8mtpa
Italy	32.9mtpa	7.8mtpa	5.5mtpa

**note: for the US the figure is greater for landfill – less reliable reporting



Landfill bans

Ban on non-stabilised organic materials form being sent to landfill

Incoming regulations

- Ban on non-stabilized organic materials from being sent to landfill.
- ROI has already been introduced (AT4 test)
- Scotland introducing (AT4 test)
- England – just about to start a discussion!!

Impact of the regulations

- Drive an increase in the collection of good quality source-separated organic waste for AD/composting.
- Lead to the introduction of technology to stabilise waste prior to landfill – landfill will still be required in some locations / circumstances.
- Increase the quantity of waste via Energy from Waste.



Landfill bans

Ban on non-stabilised organic materials from being sent to landfill



Emissions Trading Scheme (ETS)

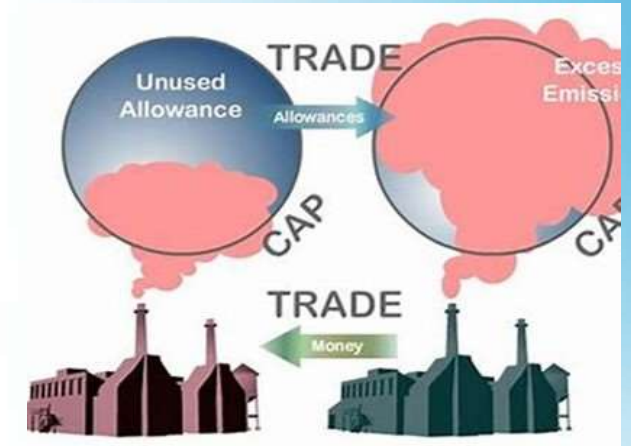
Carbon tax to include Energy from Waste plants

Incoming regulations

- From 2028 the UK ETS will include Energy from Waste plants.
- From 2028 the EU ETS will include Energy from Waste plants.
- Collection of baseline data commencing...
- Discussion on methodology – simple v's complex.

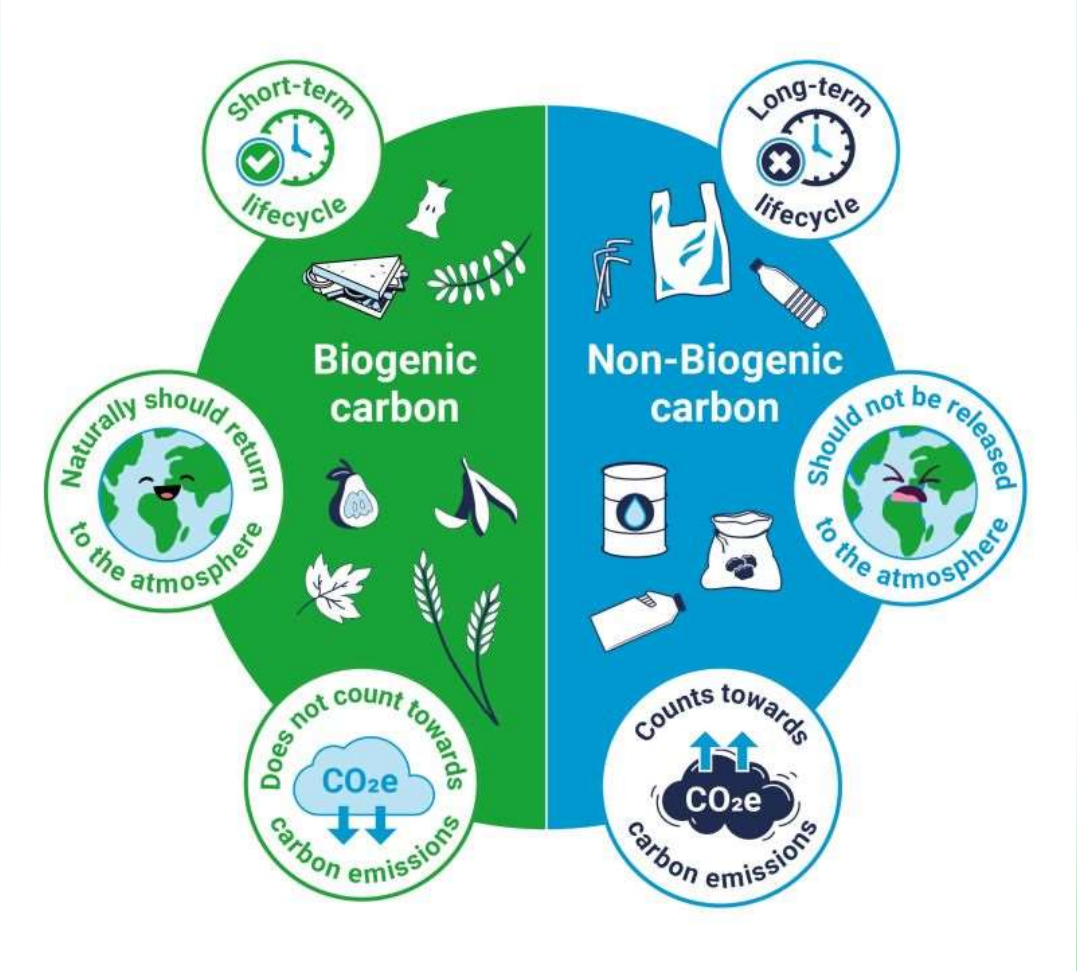
Impact of the regulations

- Increased carbon capture and storage.
- Reduced plastics to EfW – plastics sorting / plastics strategy.
- Increased cost of EfW – pass through costs.
- Development of alternative fuels high in biogenic carbon.



Emissions Trading Scheme (ETS)

Carbon tax to include Energy from Waste plants

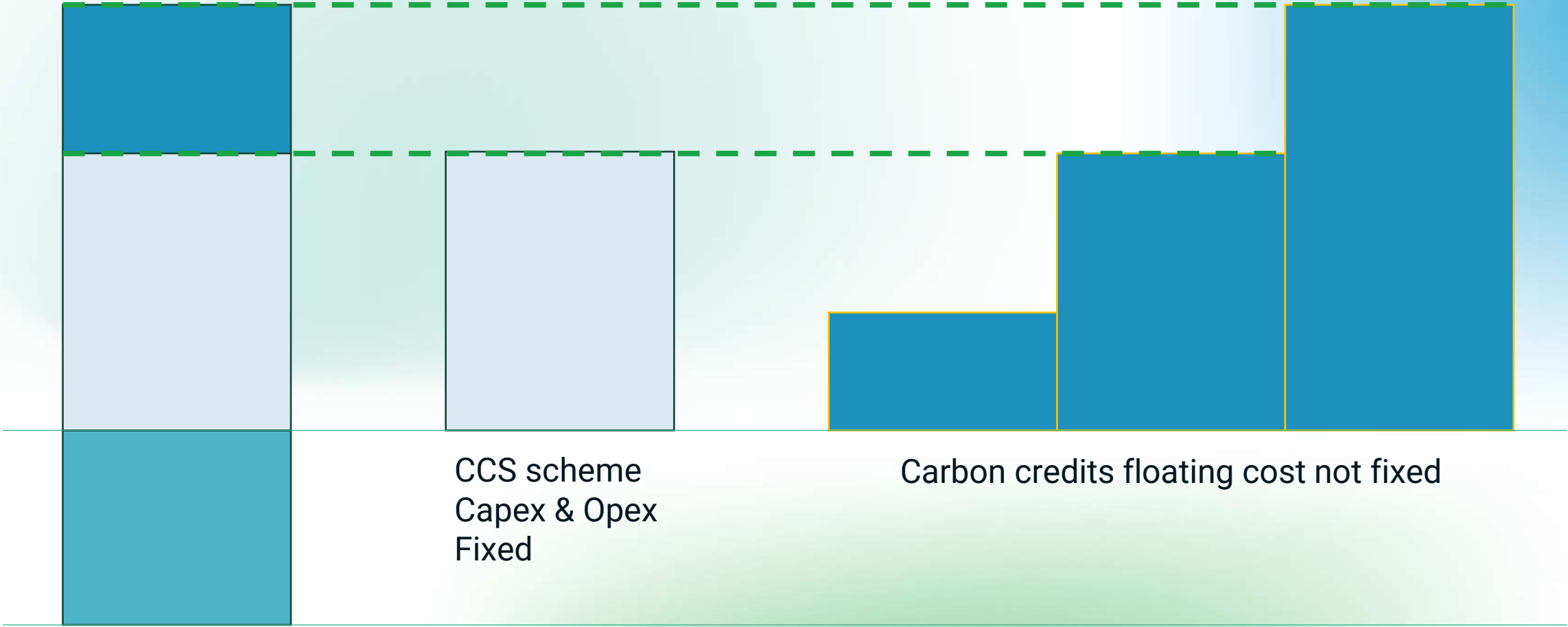


Bike to work – biogenic carbon
Car to work – fossil carbon



Emissions Trading Scheme (ETS)

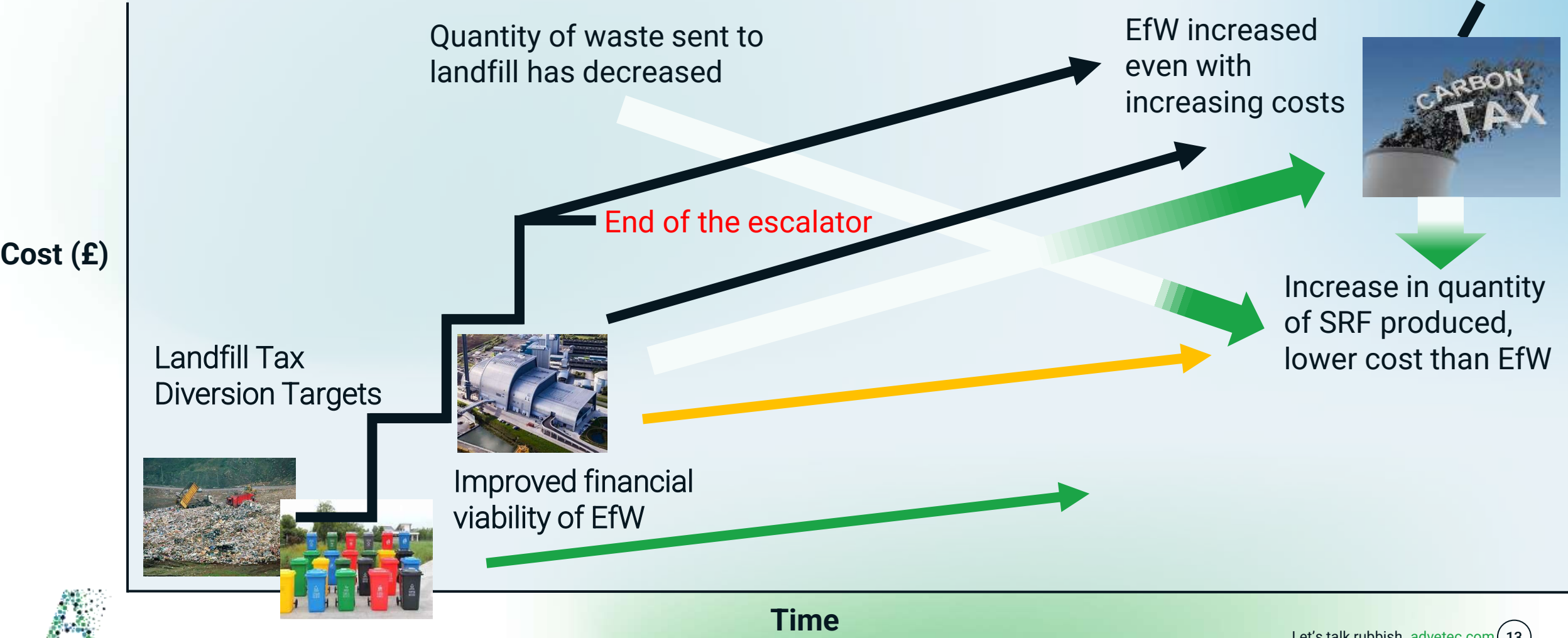
Carbon tax to include Energy from Waste plants



EfW current gatefee

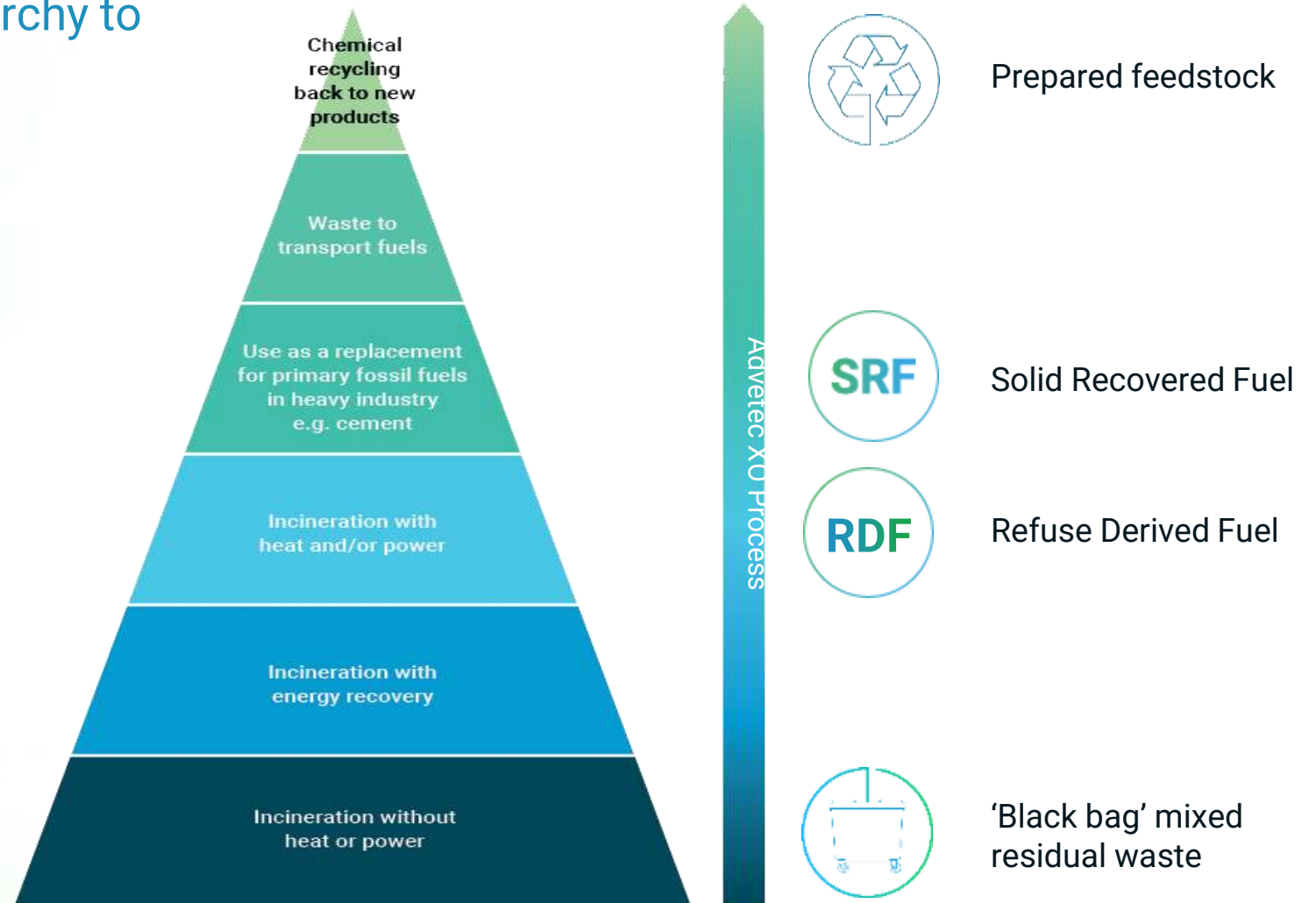
Cost of waste disposal

The increasing cost of EfW over time



The thermal hierarchy

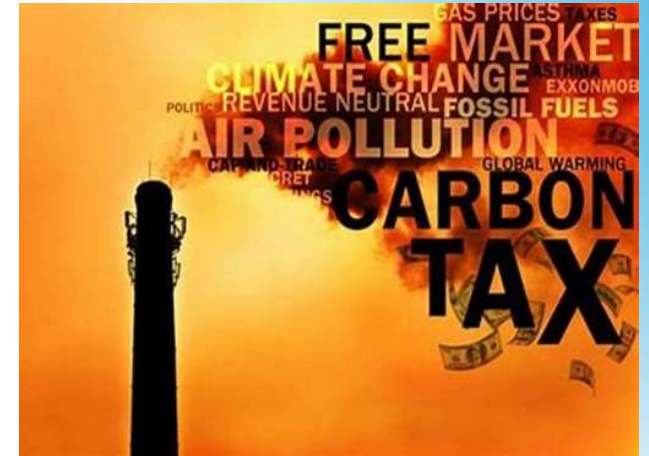
Moving waste up the thermal hierarchy to add value



Conclusion

What are the expected impacts on the sector

- Decreased organic waste to landfill.
- Introduction of alternative treatments prior to landfill.
- Increase in development of Carbon Capture Storage (and Use).
- Introduction of plastics strategy / removal of plastics.
- Development of alternative treatment technology (move up the thermal hierarchy).
- Manufactured fuels – Biogenic carbon content.
- Reduction in need for additional capacity.
- Increased cost of treatment (increased gatefee).



Questions...



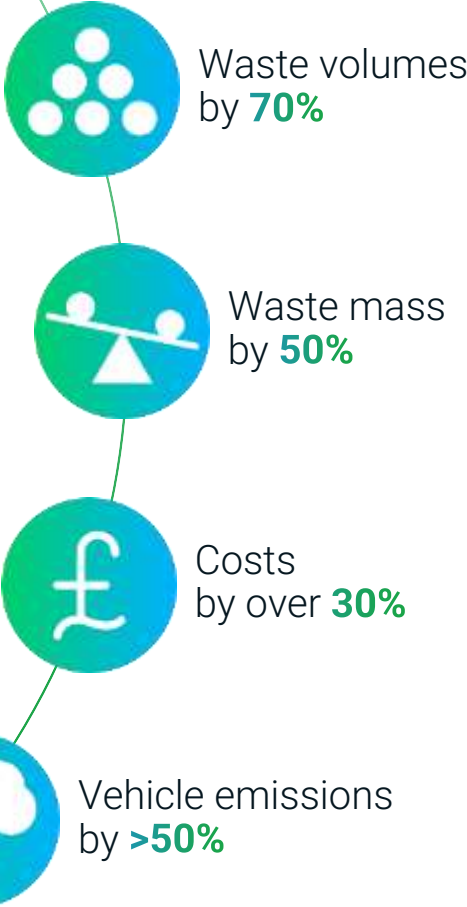
Tackling hidden waste

FACT: Organic matter **contaminates** waste.

This directly affects:



By removing the organic fraction, we reduce:



That's less waste to landfill, less waste for incineration, fewer diesel miles and less associated carbon.

Stable waste AT4 compliant



On-site modular solutions: bringing our tech to you

On-site modular solutions

Enabling the waste processing to start at the most **appropriate place** – leading to lower transport costs.



Clever BioTechnology

Because of the **Advetec blend** of Bacteria and Biostimulants, composting which can take 4-6 weeks, happens in 3 days.



Mixed waste, trade waste

The only **aerobic solution** to be fed mixed residual waste – allowing it to fit seamlessly into your supply chain.



Remote management

All managed remotely allowing real-time monitoring of the system to **maximise performance**.

