

## Why waste incineration is not the future for Birmingham



A briefing by Birmingham Friends of the Earth

Jan. 2021

### Introduction

A petition with hundreds of names, collected by Birmingham Friends of the Earth, was presented to the full City Council Meeting on 1<sup>st</sup> December 2020. The petitioners called for the council to produce a **plan to end incineration** of council-collected waste and to replace it by recycling. We now explain in detail how a rapid transition can be achieved, and why “energy from waste” is the problem and is not going to become the solution.

Twenty five years of operating the incinerator at Tyseley has led to an extreme dependence on incineration. It burns 75% of the council collected waste, only 23% being recycled<sup>1</sup> As a result, Birmingham is right at the bottom of the local authority recycling league<sup>2</sup>. By contrast, the Wales average is 26% burned and 65% recycled<sup>3</sup>.

The plant became the property of the City Council in 2019 and approaching in 2024 is the end of the waste contract with Veolia plc, which operates it. We argue that the changes required for an end of incineration should begin in 2021, and **must not be put off until 2034**. There is a tremendous opportunity right now to rethink and redesign the waste system, both disposal and collection, so that the city no longer

- produces what **is not** needed
- fails to produce what **is** needed
- continues to make everyone pay for the wrong solution

### 1. Incineration produces what is **NOT** needed

#### 1.1 Carbon Dioxide

This greenhouse gas is an inevitable product of combustion, according to the formula  $C + O_2 = CO_2$ . The emission has a relationship to the waste burned, hence in 2019 342,761 tonnes of waste were reported, creating 308,485 tonnes of CO<sub>2</sub> emitted<sup>4</sup>. Burning also produces nitrogen dioxide, which is 300 times as potent a greenhouse gas as CO<sub>2</sub>, so 379 tonnes NO<sub>x</sub> in 2019 was equivalent to another 113,700 tonnes of CO<sub>2</sub>. The Tyseley plant is Birmingham’s largest source of CO<sub>2</sub> emissions, and it is owned and paid for by BCC and the council tax payers.

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<sup>1</sup> DEFRA *Local authority waste generated by local authority 2018/19* Table 1

<sup>2</sup> Let’s Recycle 2018/19 <https://www.letsrecycle.com/councils/league-tables/2018-19-overall-performance>

<sup>3</sup> Wales - *Annual management of waste by management methods 2019-20*

<sup>4</sup> *Annual Performance Report Tyseley Energy from Waste plant 2019* Veolia to Environment Agency

Since the plant was built in 1995, the level of CO<sub>2</sub> in the world's atmosphere has accelerated past the safe level of 350 parts per million, to reach 415 parts per million in 2020, which level scientists warn is destabilising the climate<sup>5</sup>. Indeed, 2020 was the 1<sup>st</sup> or 2<sup>nd</sup> warmest year ever recorded, globally<sup>6</sup>. The UK government has declared a Climate Emergency, and in 2020 it has set a target for 2030 of a 68% reduction in greenhouse gas emissions (compared to 1990)<sup>7</sup>. The UK Sixth Carbon Budget set by the Committee on Climate Change says that by 2035 UK electricity production should be zero carbon by 2035<sup>8</sup>. This is part of a challenging global climate budget set by the UN Paris Agreement due to be confirmed at 2021 Glasgow COP 26 meeting. Birmingham City Council passed a Climate Emergency Declaration in 2019, committing itself to finding a route to net zero emissions by 2030<sup>9</sup>.

It may be that waste is only 2% of Birmingham's total carbon dioxide emissions, but compared to any other council activity incineration of council collected waste is very carbon intensive. The Tyseley plant is the largest single source of CO<sub>2</sub> in the city, according to DEFRA figures, as in Fig 1 below<sup>10</sup>. We can see that the carbon reduction agenda and timescale has overtaken the life of the Tyseley plant.

**Figure 1 Top five sources of CO<sub>2</sub> in Birmingham**

Owner 2017	Address	Postcode	Tonnes CO <sub>2</sub> 2017
Veolia ES Birmingham Limited	Tyseley Energy From Waste Plant James Road, Birmingham	B11 2BA	310,366
Severn Trent Water Limited	Minworth Final ASP Effluent	B76 9BE	96,000
Smurfit Kappa UK Limited	Nechells Paper Mill Mount Street Nechells	B7 5RE	74,507
Jaguar Land Rover Limited	Land Rover Lode Lane, Solihull	B92 8NW	68,000
Minteq UK Limited	Specialty Minerals Lifford, Lifford Lane Kings Norton Birmingham	B30 3JW	13,461

<sup>5</sup> CO<sub>2</sub> in air <https://keelingcurve.ucsd.edu/>

<sup>6</sup> Warmest year <https://www.bbc.co.uk/news/science-environment-55576736#:~:text=New%20data%20from%20EU%20satellites,above%20the%20long%2Dterm%20average>

<sup>7</sup> UK target <https://www.gov.uk/government/news/uk-sets-ambitious-new-climate-target-ahead-of-un-summit>

<sup>8</sup> CCC 6<sup>th</sup> carbon budget <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

<sup>9</sup> BCC Climate [https://www.birmingham.gov.uk/info/20015/environment/2026/climate\\_emergency/3](https://www.birmingham.gov.uk/info/20015/environment/2026/climate_emergency/3)

<sup>10</sup> DEFRA Pollution Inventory 2017

<https://environment.data.gov.uk/portalstg/home/item.html?id=8019cb9fc1494d5c96391c77a5ba35f9>

Other plants in the city reported below a threshold of 10,000 tonnes CO2

Source; Pollution Inventory 2017, Environment Agency

A justification for incineration has been the greenhouse gas effect of the methane released by rotting material in landfill sites, assuming this is the alternative to incineration<sup>11</sup>. However, the comparison is no longer valid, since the Environment Bill 2019-21 will mandate local authorities to divert food waste into separate collection and treatment, with none to landfill by 2030<sup>12</sup>.

Up until now, there been no charge to "skyfill" waste, however a new UK Carbon Emissions Trading system is being introduced to make polluters pay in 2021 and although incinerators are not currently included this will be reviewed in 2025<sup>13</sup>. An incineration tax is being considered by the government to incentivise recycling and deter unnecessary incineration.<sup>14</sup> In an open letter to the Prime Minister in November 2020, Friends of the Earth, Greenpeace, UK Without Incineration Network and Extinction Rebellion's zero waste group, called for a law requiring the waste sector to decarbonise by 2035. A new government Resources and Waste Strategy in spring 2021 will address the failure to meet national recycling targets.

Practical technology to capture and store the CO2 does not currently exist: it will be much simpler to prevent the emissions by reducing the burn. The contention that burning waste should be part of a circular economy to decarbonise the Midlands, made by the Energy from Waste and the Circular Economy Policy Commission at the University of Birmingham is contradicted by the evidence in their own report that recycling or composting is the best way to keep carbon out of the air<sup>15</sup>. The University of Exeter has recently provided the evidence for Wiltshire County Council in opposing a new incinerator at Westbury on the grounds of its huge carbon dioxide footprint<sup>16</sup>, which could be the first of many such challenges.

## 1.2 Air pollution

The Tyseley plant reports to the Environment Agency that it emits fine particulates, like those from vehicle exhaust, along with irritants such as nitrogen oxides, hydrogen chloride, hydrogen fluoride, sulphur dioxide, lead, mercury, furans and dioxins<sup>17</sup>. Acid vapours actually eat the plant, so that it requires frequent repair. While it is compliant today, in its measured emissions to the air, the waste stream is changing rapidly and we can anticipate the plant, as built 1995, being caught between the changing composition of waste and rising

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<sup>11</sup> Answer 4357 to Question to the Cabinet member for street scene from Councillor Adam Parks 14.July 2020.

<sup>12</sup> Environment Bill 2020 <https://www.gov.uk/government/publications/environment-bill-2020>

<sup>13</sup> UK Carbon Emissions Trading scheme, government response to consultation [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/889037/Government\\_Response\\_to\\_Consultation\\_on\\_Future\\_of\\_UK\\_Carbon\\_Pricing.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889037/Government_Response_to_Consultation_on_Future_of_UK_Carbon_Pricing.pdf)

<sup>14</sup> UKWIN quotes <https://ukwin.org.uk/quotes/All>

<sup>15</sup> Energy from waste <https://www.birmingham.ac.uk/research/energy/policy/energy-waste-circular-economy.aspx>

<sup>16</sup> Westbury <https://www.wiltshiretimes.co.uk/news/19011950.objections-grow-northacre-renewable-energys-westbury-waste-incinerator/>

<sup>17</sup> Annual Performance Report Tyseley Energy from Waste plant 2019 Veolia to Environment Agency

environmental standards, leading to breaches in its permit from the Environment Agency.

Although the average amounts emitted to air sound small and dilute, they are continuous and they sink down to the ground. This is happening in a part of the city with the worst health statistics, according to the Birmingham Public Health Strategy 2019-2023<sup>18</sup>. COVID 19 has shown that people die younger when their lungs are already compromised from polluted city air<sup>19</sup>. In 2020, a successful legal claim has been upheld for a death from urban air pollution.

Birmingham City Council is the Public Health Authority and it is implementing a Clean Air Zone from 2021 as part of the Air Quality Action Plan, under which drivers will be charged by the council for their vehicle exhausts<sup>20</sup>. This will appear unjust if BCC plans to continue to pollute into the future, free of charge, by burning its waste on an industrial scale, when better alternatives exist.

### **1.3 Water**

The Tyseley plant burns water; in that food waste, garden waste, wet paper etc have a high water content, so a lot of energy is used in boiling off the water. The wet rubbish is not a fuel, which is why the plant has to consume fuel oil to make it burn (775,485 litres in 2019) and it also uses a great deal of mains water for its cooling (139,000 cubic metres)<sup>21</sup>.

### **1.4 Materials**

The plant relies on burning mixed waste, and therefore on a continued failure to separate and recycle. Everyone's council tax is paying for resources to be destroyed which could be recycled or composted. The value that went into making the materials and processing into products is lost in burning, while the companies which could use the materials are deprived of the business and the jobs that they might create.

If the recycling rate does rise in future, at some level the residual waste will be insufficient to justify operating the plant. We can anticipate the economics getting worse and worse. Commercial waste is not going to rescue the plant, because companies increasingly recycle their waste, or sell it to each other<sup>22</sup>, while the council has seen a big fall in the demand for its collection and disposal service. This is not a statutory service, unlike household waste collection and disposal, so the council does not have to compete in the commercial waste market.

Fig 2 below shows how incineration always competes out recycling. Birmingham is an extreme case.

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<sup>18</sup> Birmingham Public Health Strategy 2019-2023

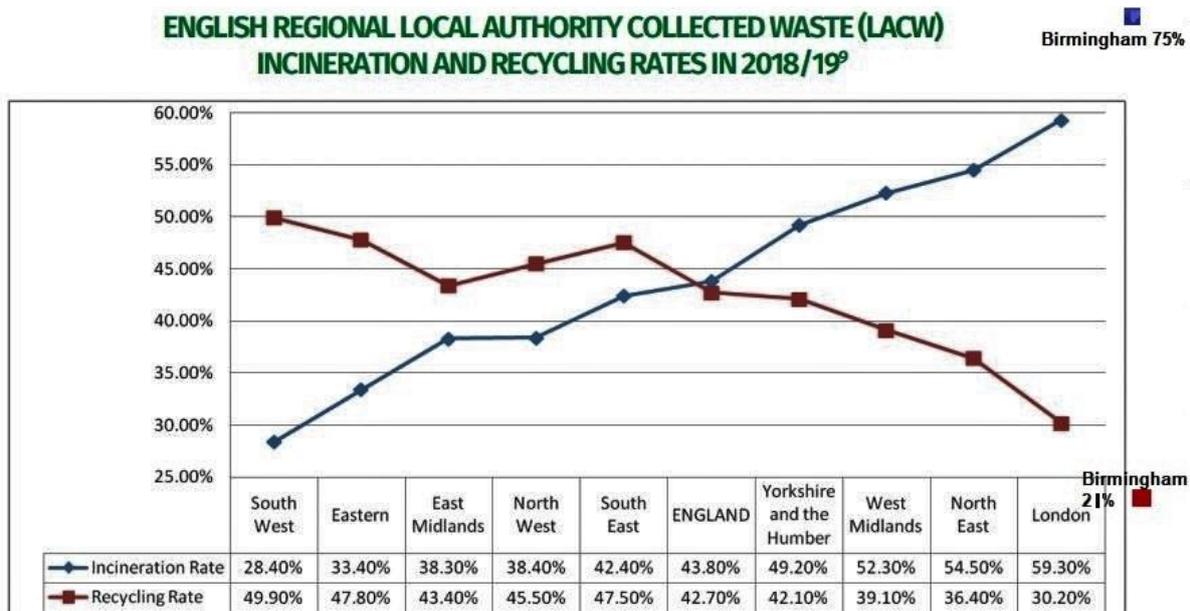
<sup>19</sup> COVID, pollution <https://www.ons.gov.uk/releases/airpollutionandcovid19mortalityrates>

<sup>20</sup> BFOE response to Air Quality Action Plan 2020 <http://www.birminghamfoe.org.uk/consultation-responses/>

<sup>21</sup> Annual Performance Report Tyseley Energy from Waste plant 2019 Veolia to Environment Agency

<sup>22</sup> BASIS <https://www.international-synergies.com/projects/what-is-the-basis-project/>

**Figure 2 Competition between incineration and recycling**



Source; UKWIN 2020 Moving Away from Incineration Towards a Circular Economy

**1.5 Ash**

The incinerator burns all the waste, including many incombustible elements. The worst pollutants are trapped in toxic fly ash in the stack, which is a hazardous waste that has to be landfilled. Of the waste tonnage, 21% became incinerator bottom ash in 2019 (72,127 tonnes)<sup>23</sup>. This ash cannot be recycled, i.e. made into new products, because nothing is made from ash. In reality, it is chemical waste, and since it is not inert, like sand, gravel or rubble, the ash is not safe as a substitute for them. Birmingham does not need more ash.

**1.6 Waste Heat**

This is the embodied energy that comes, overwhelmingly, from burning the plastic items, made from oil. Burning it is not a renewable or sustainable source of energy, rather single use plastic packaging is something that society is aiming to reduce and phase out, for example the voluntary Plastic Pact among major retailers in response to consumer demand<sup>24</sup>. The Environment Bill 2019-21 will introduce a tax on new plastic<sup>25</sup>.

More than 80% of the heat from combustion at Tyseley goes into the air, with only a fraction used to make the steam that drives turbines to generate electricity. Efficiency could be raised by using the waste heat to heat buildings or homes. That would require a new network of underground pipes to transport warm water but Tyseley is far from users of heat, its neighbours are other industrial plants.

<sup>23</sup> Annual Performance Report Tyseley Energy from Waste plant 2019 Veolia to Environment Agency

<sup>24</sup> Plastic Pact <https://www.wrap.org.uk/content/what-uk-plastics-pact>

<sup>25</sup> Environment Bill <https://www.gov.uk/government/publications/environment-bill-2020>

Past investigation found this to be uneconomic<sup>26</sup>. The experience of the Sutton Decentralised Energy Network, south London, has been that the economic margins are low on high upfront costs, requiring a 25 year contract to pay back costs; in practice delivering more expensive and less reliable heating than the alternatives<sup>27</sup>. District heating would contradict the right of the consumer to choose and switch, so be seen as a poor deal.

Copenhagen is very different from Birmingham, in that it already has a network of district heating pipes and a monopoly on heat supply. Here the system is in transition towards the integration of wind energy, via large heat pumps and electric boilers, to reduce the carbon footprint, with waste as a diminishing contribution<sup>28</sup>.

The UK government has made it clear in its new Energy White Paper 2020<sup>29</sup> that it will only be investing in low carbon sources for district heating. For buildings, it favours electric air source heat pumps, at the point of consumption; the building owners to qualify for Renewable Heat Incentive payments. Electricity will have the advantage in that it does not need a new network to deliver it, unlike waste heat.

### **1.7 High carbon electricity**

The Tyseley plant exports some electricity to the grid, but the output no longer qualifies for payments for renewable energy via the Non-Fossil Fuel Obligation scheme, since that ended in 2018. The actual carbon intensity of the electricity is close to that of a coal burning power station (calculated in Fig 3). Coal generation is due to end by 2024, leaving energy from waste as the most polluting power source.

The Energy White Paper 2020 has set a national aim of “overwhelmingly decarbonised” power in the 2030s and shown how electricity will in future come from wind, sun, hydro; the endless clean sources that require no fuel. Storage is being developed rapidly in the form of green hydrogen and large grid batteries. The carbon content of electricity is therefore going to fall rapidly towards zero by 2030, as fossil fuels are left behind.

Any comparison of incineration with a new gas fired power station is out of date, since they will no longer be built; zero carbon renewables being the cheapest option for generation in the Energy White Paper. By 2032, Tyseley electricity will be 8 times as carbon intensive as the grid (see Fig 3), so energy companies will not want to buy polluting electricity from an “energy from waste” plant. Council-owned energy companies to sell electricity directly to consumers have mostly failed, for example Portsmouth and Nottingham<sup>30</sup>.

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<sup>26</sup> Tyseley Energy from Waste Plant: Feasibility into the future possibilities for the use of waste heat. Urban Design, BCC June 2009

<sup>27</sup> <https://insidecroydon.com/2020/06/23/suttons-heating-network-inflicts-fuel-poverty-on-new-estate/>

<sup>28</sup> Copenhagen

<sup>29</sup> Energy White Paper 2020 <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

<sup>30</sup> Portsmouth <https://www.bbc.co.uk/news/uk-england-hampshire-54552541>

**Figure 3 Carbon intensity of electricity from Tyseley**

		Grams Carbon per Kwh
Coal power generation <sup>31</sup>		870
Modern Gas generation (CCGT) <sup>27</sup>		340
<b>Tyseley plant</b> calculation		
a. CO2 emitted in 2019	308,485 tonnes	
b. % fossil carbon	46%	
c. Fossil CO2 e	141,903 tonnes	
d. Elec exported 2019	173,207 Mwh	
Fossil Carbon intensity (c/d)		<b>819</b>
Wind, sun, hydro		0
Average for national grid in 2019 <sup>32</sup>		231
Target for national grid by 2032 <sup>33</sup>		100

The UK's binding fifth national carbon budget stipulates that emissions from power generation must not rise above 100g CO<sub>2</sub>/kWh by 2032.

### 1.8 Overcapacity of incinerators

A new incinerator would experience all of the above problems. There is an over capacity of incineration in Britain, according to the UK Without Incineration Network, who call for a moratorium on new plants being built<sup>34</sup>.

The Environment Bill 2019-21 before Parliament aims to move to a minimum 70% recycling rate of packaging waste by 2030, thus taking away from the bin most of what burns. People working from home in 2020 has led to a large fall in food being thrown away, according to survey by WRAP, which may become the new normal<sup>35</sup>.

In Birmingham, the past projections of increasing municipal waste have not been born out, rather the tonnage of waste collected has declined steadily (see Fig 5 below). Projection of the population of the city has been revised downwards by the Office of Population and Censuses<sup>36</sup> (and will fall further with post-Brexit

<sup>31</sup> BEIS Greenhouse gas reporting: conversion factors 2020.

<sup>32</sup> Grid carbon <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

<sup>33</sup> Energy White Paper 2020

<sup>34</sup> 'Moving Away from Incineration Towards a Circular Economy' (2020) UKWIN <https://ukwin.org.uk/policy/>

<sup>35</sup> Food wasted <https://www.wrap.org.uk/content/citizens-and-food-covid-19-lockdown>

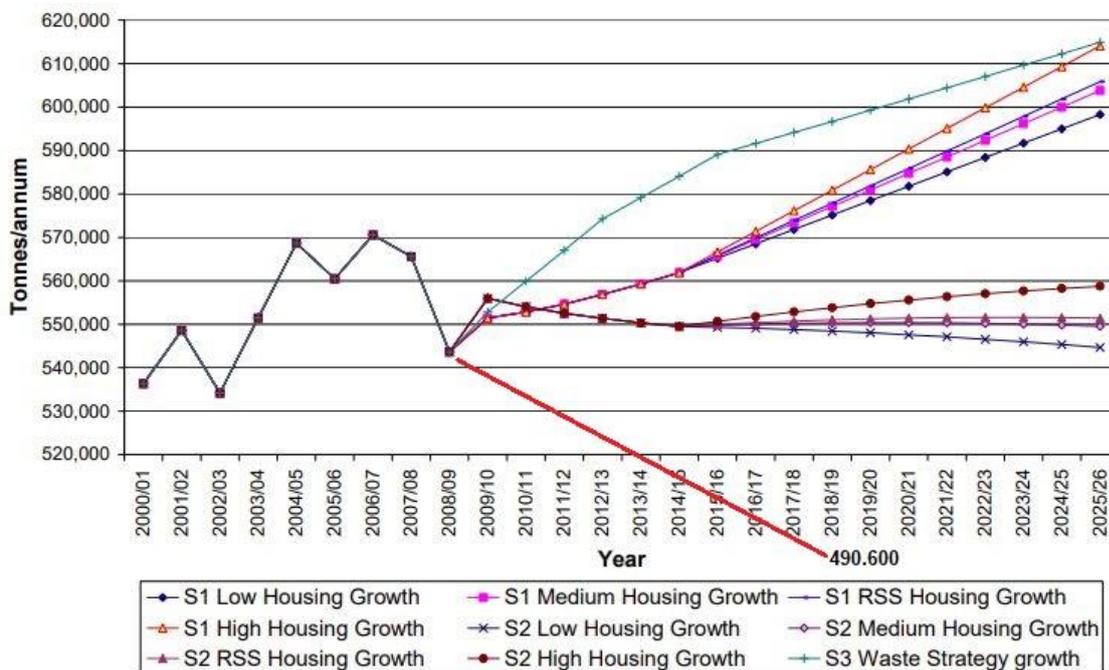
<sup>36</sup> Population <https://www.birminghammail.co.uk/news/midlands-news/what-happen-birminghams-population-next-16108013>

immigration control). 2020 has shown that about half of jobs can be accessed online from home, as can study courses, without needing to live in the city.

For many such reasons we do not believe that a case for a replacement incinerator at Tyseley can be made; it would depend on trends that have ended, as well as having an unacceptable environmental impact. A High Court ruling 2021 has found that decision makers must avoid any 'lock in' to high carbon solutions and that this can be a grounds for challenge in planning inquiries<sup>37</sup>. Probably a new plant if it were built would be a 'stranded asset', with the City Council taking the risks.

**Figure 4 Past overestimates of municipal waste arising**

**Figure 11 Municipal waste growth projection (2000-01 – 2025-26) all scenarios**



The projection of rising tonnage of municipal waste reproduced above from the 'Birmingham Waste Capacity Study 2010' was greatly over-estimated<sup>38</sup>. Actual tonnage collected in 2018/19 is shown in red (source; 'Local Authority Collected and Household Waste Statistics 2018-19')<sup>39</sup>. The amount of waste collected by Birmingham City Council has actually fallen by 1% per year since 2007. There seems to be a fatal flaw in the method of prediction. Note that more households do not equate to more people if household size gets smaller, which it has.

<sup>37</sup> Client Earth <https://www.clientearth.org/latest/latest-updates/news/court-upholds-gas-plant-approval-but-sets-important-climate-planning-precedent/>

<sup>38</sup> ENVIROS Consulting Ltd 2010 Birmingham Waste Capacity Study Fig 11 p27

<sup>39</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

## 1.9 Property blight

One reason for depressed property prices in East Birmingham must be the impact of having the incinerator as a neighbour, site, smell etc. Income is lost to the council every year through the low council tax banding of properties in the neighbourhood. The plant's closure would be a great boost to the area, in line with the council's East Birmingham Inclusive Growth Strategy<sup>40</sup>.

## 2. The Alternative – produce what **IS** needed

The imperative is to stop the burn; rather to lock up the carbon and prevent it getting into the air. Composting and re-use or recycling of waste can achieve such "sequestration" of carbon; hence we say that they are the technologies for the future and investment should be switched into them. High levels of recycling can be obtained by adopting best practice methods already proven elsewhere, therefore no new technologies are required. The value which is in the waste can be recovered.

### 2.1 Food waste

Up to 40% by weight of household refuse in Birmingham is food waste (Fig 3 below). Rotting food is what creates the smell from the Tyseley plant. Food waste contaminates everything else in the bin and prevents it from being used. A properly contained food waste system would reduce the plague of rats in Birmingham. Every household in Wales has a food waste collection, weekly or fortnightly, so the processes are well known. Residents of Sandwell were offered this service pre-COVID and we have called for a trial in Birmingham, co-operating in order to cost effectively 'piggyback' on a neighbouring authority's system.

If people have a separate bin and see what they waste, then they tend to buy less and eat more of it, according to the findings of WRAP<sup>41</sup>. However, about half of food waste is unavoidable, according to WRAP<sup>41</sup>. This can be digested, in Anaerobic Digestion plants (AD), at a range of scales, where gate fees are typically low. This happens at the Seven Trent plant at Coleshill, four miles from Birmingham, and the water industry is wishing to build more bio-gas plants<sup>42</sup>. Biogas can be used to power vehicles, provide heat or electricity, or be directly injected into the grid to replace fossil gas. The only other product from AD is a liquid fertilizer, to feed the soil.

Food waste collection was excluded in the past Options Appraisals for council waste. This needs to be reviewed urgently, since it affects the case for incineration.

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<sup>40</sup> E B'ham Inclusive Growth Strategy

[https://www.birmingham.gov.uk/info/20054/local\\_plan\\_documents/2048/east\\_birmingham\\_inclusive\\_growth\\_strategy](https://www.birmingham.gov.uk/info/20054/local_plan_documents/2048/east_birmingham_inclusive_growth_strategy)

<sup>41</sup> 'Household food and drink waste in the UK' (WRAP) <https://wrap.org.uk/content/household-food-and-drink-waste-uk-0>

<sup>42</sup> Food waste recycling <https://www.stgreenpower.co.uk/>

## 2.3 Organic waste

About half of the Tyseley plant's "feedstock" is food waste and garden waste; while if paper and natural textiles are included, then the biodegradable fraction is 62% or more (Fig 3). Households in Coventry put all of their organic waste into a bin, whose contents is taken to In-Vessel Composting<sup>43</sup>. Compost is a saleable product. It becomes part of the soil, completing the cycle of fertility, and that is urgent, because 40% of Britain's soils are depleted of organic carbon, according to Rothamsted Research<sup>44</sup>. Composting sequesters carbon in the soil, while burning starves the soil of nutrients. If Birmingham's future waste strategy benefits earthworms, then it will be sustainable.

**Figure 5 Composition of mixed waste burned at Tyseley**

<b>2019 Composition</b>	per cent	
Organic materials	36.8%	Biodegradable fraction 62%
Paper	8.7%	
Card & Cardboard	5.7%	
Plastic Film	4.9%	
Dense Plastic	13.7%	
Textiles	8.2%	
WEEE	2.5%	
HWW	0.1%	
Wood	0.3%	
Glass	3.1%	
Ferrous Metal	1.2%	
Non Ferrous Metal	0.7%	
Misc Non-Combustibles	0.5%	
Fines	0.7%	
Absorbent Hygiene Products	10.4%	
Misc Combustibles	2.6%	
Total residual incinerated	100.0%	

Source; Annual Performance Report 2019 Tyseley Energy from Waste Veolia to EA

## 2.4 Reuse and Recycling

The collection system produces the waste stream or streams. It is therefore time to reallocate bin space. Once the contamination of the wet waste is diverted, what remains will be dry, and mostly usable items. Paper and card, metals, textiles, plastic could be baled and sold. Solihull Council collects bags of clothing from households. The council could be selling much of its waste to companies that want to use it. One model is to form a council owned company having the sole mission

<sup>43</sup> Coventry <https://www.coventry.gov.uk/brownbin>

<sup>44</sup> Depleted soils <https://www.rothamsted.ac.uk/news/survey-shows-nearly-40-arable-soils-%E2%80%98degraded%E2%80%99>

of collecting and recycling waste in the district, as we find at Newport, South Wales and recently in North Somerset<sup>45</sup>.

The town and district of Stroud increased its recycling rate by 15.7 % in a single year to 61 %, by introducing a separated collection of household waste<sup>46</sup>. Another example, the city of Glasgow is trialling an offer to households of a 2-weekly green waste bin and a recycling bin, with just a 3-weekly collection of a grey bag for any residual items<sup>47</sup>.

The Environment Bill 2020 will introduce a national Deposit Return Scheme<sup>48</sup>, to be introduced by retailers by 2023, which will pay a reward for every can and bottle returned to them, creating waste streams that can be recycled and causing much street litter to disappear. This means that the blue household recycling bins in Birmingham and the crews that collect them can be re-purposed.

Any new collection vehicles which the council purchases should be divided ones, able to collect multiple waste streams, including food waste, in a single pass down the street. The time saved could allow the crew to do a further sort at the kerbside and we see that authorities with the highest recycling rates, such as Pembrokeshire and Anglesey operate in that fashion; both of them having achieved a 70% recycling rate. Birmingham's Waste Strategy 2106 envisaged 70% as a goal, but a new collection system should move there within the next five years, given the Climate Emergency. This means a switch from investing in disposal, i.e. the incinerator, to investing in the collection system that would make it redundant. If recycling is collected in mixed form, then it can be mechanically sorted by a Materials Recycling Facility, and these come in a variety of sizes and prices: such an investment was proposed in the draft Birmingham Waste Strategy 2016.

### **Figure 6 Recyclability of household waste**

"Of total residual waste from household sources in England in 2017, an estimated

- 53% could be categorised as readily recyclable,
- 27% as potentially recyclable,
- 12% as potentially substitutable and
- 8% as difficult to either recycle or substitute."

Source; Defra's August 2020 'Resources and Waste Strategy Monitoring Report', quoted in UKWIN 2020 'Moving Away from Incineration Towards a Circular Economy'.

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<sup>45</sup> Newport Waste Savers <http://wastesavers.co.uk> North Somerset Recycling Company <https://www.n-somerset.gov.uk/news/recycling-waste-services-return-council-operation>

<sup>46</sup> Stroud <https://www.stroud.gov.uk/news-archive/government-asks-council-for-advice-on-chart-topping-recycling-rates>

<sup>47</sup> Glasgow <https://resource.co/article/new-collection-service-aims-boost-recycling-glasgow>

<sup>48</sup> Environment Bill 2019-21 <https://services.parliament.uk/bills/2019-21/environment.html>

NB. The high proportion of Birmingham waste which is burned (Fig 1) suggests that a much higher per cent of residual waste could/should be recycled than the average for England quoted above. This needs to be modelled !!

The Bulky Waste service currently has the wrong kind of incentives. Collections cost £33 for up to ten items, which is to say "ten for the price of one". If people just dump large items, then the council's fly-tipping squad removes it for nothing. We believe it all to be incinerated, although a scheme by Community Service Volunteers some years ago found 60% of items were saleable. The Re-users at the Sutton Coldfield HRC shows best practice for re-use<sup>49</sup>. Usable items should be taken to the Household Recycling Centres, rather than the incinerator. The council has always refused to pay anything for items diverted by community groups, but that should be reviewed. Charities could be key partners in getting value from waste and in building co-operation from the public.

## 2.5 Phase out rubbish

The financial savings from ending weekly rubbish collection could pay for a more effective separation and sort. The city council owns its incinerator and it could take the operation in-house, as Coventry has done, so as to be able to run it down. There will remain some residue (which may not burn), however nothing is improved by incinerating it. Plastic waste, if it cannot be recycled is of low weight and could be compacted, then stored or buried, to keep the fossil carbon out of the air. For nappies, there is already a specialist clinical incinerator at Tyseley. Friends of the Earth does not support "zero to landfill", since some landfill is going to be preferable to more skyfill. Once in the sky, it is impossible to recover!

Projections of increasing waste must be treated with suspicion, since they have been spectacularly wrong in the past.

## 3. People power

The transformation of the waste system, "a new deal on waste", will need explaining and justifying to residents, who will have to want to participate. Instead of throwing everything away and the council to pick up and dispose of it, there will be a joint responsibility to get each kind of waste to the right place. This happens in the most advanced authorities, so Birmingham people will react in the same way if they understand what is being asked of them and why. The survey for Birmingham's Future Waste Strategy 2016 found a majority were asking for change<sup>50</sup>.

Reward to recycle, in the form of nectar points was trialled some years ago, which was successful, and needs to be re-examined. Brumcan used Recycling for Charity as an incentive. Curitiba in Brazil set up a credit system for recycling which gave t public transport tickets, while in Birmingham credit could be given to peoples' Swift cards, so encouraging more sustainable transport.

Communication about waste and recycling is something that other local authorities spend much more on, and The Independent Waste Review found that Birmingham

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<sup>49</sup> Re-users <https://jericho.essentialmarketer.dev/reusers/>

<sup>50</sup> Future Waste Strategy Survey 2016 Over 850 residents completed the online survey.

is especially poor at it<sup>51</sup>. The cost would be re-paid from the gate fees saved at “disposal”.

If people are to help deliver the results, then they should be involved in the design of the new collection system, so that innovations are known to be acceptable before they are finalised and implemented. A citizens’ panel is one way to do this.

People participating includes the workforce, of course, whose jobs can be made more meaningful, giving back a mission to what was once known as the Salvage Department, rather than just feeding an incinerator.

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<sup>51</sup> Independent Waste Review

[https://www.birmingham.gov.uk/news/article/529/independent\\_review\\_into\\_council\\_waste\\_collections\\_is\\_published](https://www.birmingham.gov.uk/news/article/529/independent_review_into_council_waste_collections_is_published)