

2. Socio-Economic Impact and Need for the Proposal

Introduction

- 2.1 The purpose of this Chapter is to provide an updated assessment on need for the proposal given the issues directly raised by both the TLT Solicitors correspondence dated 30 April 2020 and objection no. 5215 submitted by Colin Buick of no-arc21 and other associated issues.
- 2.2 It is suggested by third parties that the issue of ‘need’ has not been considered beyond 2020 and the SIB analysis relied upon in their report ‘*Analysis of Residual Waste Infrastructure Requirements 2020*’ that was considered by both the Planning Appeals Commission (PAC) and DfI Strategic Planning Division is now outdated.
- 2.3 It is understood at the time of writing this ES Addendum that DfI Strategic Planning Division has sought an updated opinion from DAERA Environmental Policy Division in relation to the need for the proposal. DAERA’s most recent update in December 2018, clearly identified the ‘need’ for the project to enable Northern Ireland to meet Circular Economy targets. This recent request was made in February 2020 but this response remains outstanding. To ensure currency of the environmental information the applicant has therefore commissioned its own ‘need’ assessment.
- 2.4 This Chapter is accompanied at Appendix 2.1 by an assessment undertaken by Tolvik Consulting that considers the current and projected tonnages towards 2035 of residual waste available in Northern Ireland for thermal treatment at the proposed arc21 Energy from Waste (EfW) facility. This assessment should be read in full, however, the findings are summarised in this Chapter. Tolvik’s assessment reaffirms the need for the proposed facility when Circular Economy targets are taken into account. Furthermore, it identifies a remaining residual waste ‘capacity gap’ of 124,000 tonnes in 2035.
- 2.5 A report produced by Grant Thornton in June 2020 is enclosed at Appendix 2.2 providing a strategic overview of the need for the proposal in the context of the current economic climate, while addressing current and future waste policy direction at a European level to the priorities of the Northern Ireland Executive at a local level.
- 2.6 A further Tolvik report is provided at Appendix 2.3 that provides a review of Local Authority Residual Waste procurements across the UK, comparing the arc21 project’s procurement path and preferred technology selection to other, similar local council partnerships across the UK.

Executive Summary

- 2.7 This Chapter updates the need for the proposed development of strategic waste treatment infrastructure at Hightown Quarry. The evidence supporting the need for this Local Authority sponsored project has been clearly set out. It includes:
 - arc21’s Waste Management Plan (WMP), endorsed by its constituent Councils, identified the requirement for the proposed infrastructure based on long term needs, beyond 2020 targets. The objectives of the arc21 WMP are entirely consistent with the direction of travel regarding environmental policy and climate change mitigation;

- Environmental policy in the form of the Circular Economy Package (CEP) is now law. By 2035 NI Councils will have to ensure that less than 10% of their waste is sent to landfill, in 2018/19, 28% was sent to landfill. By 2035 a 65% recycling rate applies, in 2018/19 the recycling rate was 49.5%. A step change is required to meet these targets. Integrated recycling and energy recovery infrastructure as proposed will directly support the achievement of these targets;
- The UK Government Committee on Climate Change (CCC) recommended that the NI Executive ban biodegradable waste to landfill by 2025. Should the Executive decide to adopt this climate mitigation policy it would bring NI in line with Scotland and Wales and would create an even more urgent need for indigenous EfW infrastructure as an alternative to landfill;
- As identified by DAERA'S latest review, existing landfill capacity in NI is running out. The continuation of landfill as a waste management method or policy option when other less harmful alternatives can be provided risks exacerbating climate change and irreversibly damaging our shared planet;
- Continuing to rely on the export of waste, at a cost of £16m per year, to meet environmental obligations is a high risk approach as gate fees and taxes in many European EfWs rise while capacity is being prioritised for local needs. The approach is not commensurate with the CEP and revised Waste Framework Directive principles of self-sufficiency and proximity as well as being counterintuitive as an indigenous renewable energy source is transported large distances to add to the energy security of others while reducing NI's. Furthermore, there are significant GHG emissions associated with the transport of waste by land and sea to destinations such as Sweden and Denmark;
- The Tolvik Consulting NI Waste Market Review modelled projections for residual waste taking into account the impact of COVID-19, BREXIT and assumes that 65% recycling is achieved in 2035. Their analysis concludes that in 2035 there will be a 'capacity gap' of 124,000 tonnes. This would suggest, that including existing thermal treatment facilities in NI there will be sufficient waste to ensure the arc21 EfW is not oversized; and
- arc21 are one of only three Local Authorities or partnerships in the UK generating a significant amount of waste that are yet to procure a long term residual waste solution. In the absence of the proposed solution, NI will miss the opportunity to realise £240m of private investment towards public services, contribute towards renewable energy and climate mitigation targets, enhance NI's security of energy supply and provide a reliable waste management solution.

Waste Management Policy Context

- 2.8 Prior to the grant of planning permission in September 2017 for the proposed arc21 facility, a hearing was conducted by the PAC in October 2016 with the PAC providing its independent report and recommendation to the Department in March 2017. The Commission recommended that planning permission be granted subject to conditions.

2.9 As part of the hearing and subsequent PAC report, the waste management policy considerations at that time were set out in detail at paragraphs 31-62. This included reference and consideration to the following:

- Planning Policy Statement 11 'Planning and Waste Management' (PPS11), specifically Policy WM2;
- DoE Environmental Policy Division Waste Prevention Programme – Road to Zero Waste (2014) (WPP);
- Delivering Resource Efficiency – Northern Ireland Waste Management Strategy (2013) (WMS);
- arc21 Waste Management Plan (2015) (WMP);
- SIB Analysis of Residual Waste Treatment Capacity 2020 (2015);
- The Mills Report (2013); and
- EU Commission's Circular Economy Package (2015) (CEP).

2.10 The planning policy context for the proposal is unchanged insofar as Policy WM2 of PPS11 remains the prevailing planning policy that makes clear that any assessment of need is limited to whether it is established through the WMS and the relevant WMP:

'Proposals for the development of a waste collection or treatment facility will be permitted where:

- a. There is a need for the facility as established through the WMS and the relevant WMP, except in the cases of a waste water treatment works where the need must be demonstrated to the Department's satisfaction...'*

2.11 The Commissioner clearly stated at para 36 of their report that:

'It is important to recognise that the subject Section 26 process is not a forum for questioning or amending the content of either the WMS or the arc21 WMP'.

2.12 It remains the case as presented by the applicant to the PAC at that time that the arc21 WMP determined its capacity requirements for the proposal based on a longer term view of residual waste requirements beyond the 2020 target. The arc21 waste tonnage predictions for the residual waste treatment project were also conservative to allow for waste minimisation and additional recycling. The arc21 approach endorsed by its constituent Councils was to anticipate the direction of travel of policy so as to future-proof the proposed infrastructure, the waste hierarchy being a guiding principle.

2.13 Notwithstanding, it is acknowledged that the policy context for waste management and climate change has evolved in the intervening period which merits further consideration below.

arc21 WMP

2.14 The current arc21 WMP, has been prepared by the arc21 region in fulfilment of its Councils' obligations under Article 23 of the Waste and Contaminated Land (Northern Ireland) Order 1997.

The Plan provides a framework for waste management provision and a regional network of facilities for all controlled wastes within the arc21 region. It establishes the overall need for waste management capacity and details the proposed arrangements to deal with the wastes produced in a sustainable manner. The development and delivery of the residual waste treatment project at Hightown Quarry is a key component of the WMP.

- 2.15 Whilst the WMP refers to a number of date driven targets (contained within the WMS and EU Waste Policy and Legislation, namely the Landfill Directive 93/31/EC limiting the quantity of biodegradable waste going to landfill to 35% of 1995 levels by 2020), it is acknowledged that:

'Energy from Waste, incorporating state of the art environmental protection will form part of the solution for the long term management of residual waste, and will not distract effort from increasing recycling and composting'. (Emphasis added)

- 2.16 In this regard, arc21's WMP confirms their preferred option for achieving this objective by way of a circa. 240,000tpa Mechanical Biological Treatment (MBT) facility and a circa. 210,000tpa EfW facility at a site capable of accommodating an integrated residual waste treatment facility embracing both technologies at Hightown Quarry.
- 2.17 The WMP is endorsed by DAERA and arc21's constituent Councils who are democratically mandated to act on behalf of their residents.
- 2.18 The arc21 WMP therefore remains current and the assessment of need is established through this WMP. Furthermore, the objectives of the arc21 WMP are entirely consistent with the direction of travel regarding environmental policy and climate change mitigation.
- 2.19 As well as the arc21 WMP due consideration should be given to the following waste management, climate change policies, plans, consultations and NI Executive agreements when considering the need for this project:

- Waste Management Plan for Northern Ireland (WMPNI);
- The Circular Economy Package (CEP) 2018;
- The UK Committee of Climate Change (CCC) – Reducing emissions in NI;
- New Decade, New Approach Agreement;
- Future Recycling and Separate Collection of Waste of a Household Nature in NI; and
- No Time to Waste- Resources Recovery and the Road to Net Zero.

Waste Management Plan (NI)

- 2.20 DAERA's Waste Management Plan for Northern Ireland (WMPNI) was published in 2019. It makes clear that it is not the intention of this document to introduce any new policies or to change the landscape of how waste is managed in NI. Instead, its core aim is to bring current waste management policies under the umbrella of one national plan.

- 2.21 This WMPNI updates the previous waste management plan for Northern Ireland, which was a collection of a series of documents including the WMS and arc21 WMP.
- 2.22 Current waste policies in Northern Ireland remain as are set out in the WMS, Delivering Resource Efficiency. However, the WMPNI confirms it is DAERA's intention to revise this strategy as the focus moves from waste management to a low carbon, circular economy.

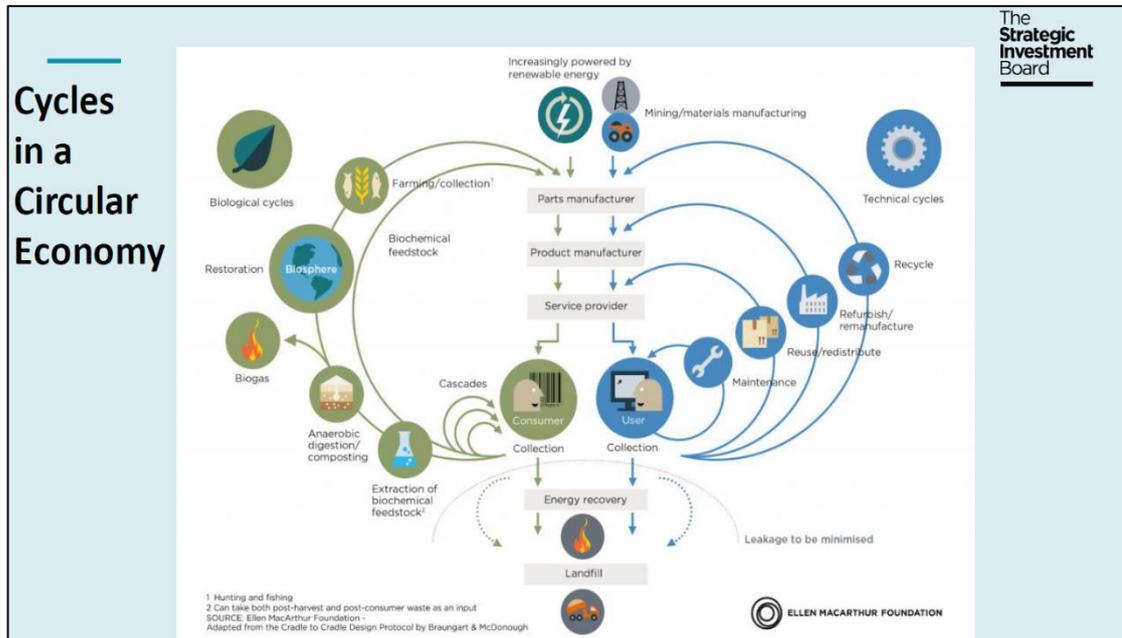
EU Circular Economy Package 2018

- 2.23 The EU's CEP¹ published in 2018 has been adopted into UK law including NI as of July 2020.
- 2.24 Its aim is to move towards a more Circular Economy which will see us keeping resources in use as long as possible, extracting maximum value from them, minimising waste and promoting resource efficiency.
- 2.25 The CEP sets out a number of ambitious recycling and landfill targets that will have to be delivered as part of any new WMS or WMP brought forward:
- With regard to landfill, Councils will be expected to ensure that all waste suitable for recycling or recovery shall not be sent to landfill by 2030, except for waste for which landfill is the best outcome.
 - Councils will have to ensure that by 2035, less than 10% of the municipal waste generated is sent to landfill.
 - Revised targets for the reuse and recycling of municipal waste to at least 55% of municipal waste by 2025, 60% by 2030 and 65% by 2035.
- 2.26 As outlined in the Tolvik Report (Appendix 2.1), NI Councils continue to send large volumes of waste to landfill. In 2018, 294kt or 28% of local authority collected waste was sent to landfill. In the same year the recycling rate was 49.2%. A step change will be required in managing municipal waste if the CEP targets are to be achieved.
- 2.27 That step change will require robust, strategic waste infrastructure in NI which will negate the requirement for NI to continue exporting waste. An approach which is not commensurate with the Circular Economy principles of self-sufficiency and proximity as well as being counter intuitive considering an indigenous renewable energy resource is being transported large distances to supply energy to other European households and businesses.
- 2.28 Figure 2.1 overleaf by the Ellen MacArthur Foundation (as used in a presentation to the Joint NILGA Network Meeting on 04 Sept 2020 "*Councils, the Circular Economy and a Green Recovery*") captures the essence of the Circular Economy and the flow of materials, nutrients, components and products in an economy. This systemic approach is designed to benefit society, business and the environment.
- 2.29 The arc21 project through mechanical recyclate extraction, biological treatment, energy recovery and residue recycling and recovery will play a fundamental role in the transition to a Circular

¹ <https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement>

Economy. The proposed development can play a further key role in the ‘Green Recovery’ as an anchor for other Circular Economy developments such as district heating, hydrogen generation and distribution.

Figure 2.1 Cycles in a Circular Economy



New Decade New Approach Agreement

2.30 With the return of the Northern Ireland Executive, *New Decade New Approach*² was published in January 2020 which set out the priorities for the Programme for Government (PfG) for 2020 and beyond.

2.31 The parties recognise the need for a co-ordinated and strategic approach to the challenge of climate change within the PfG. The actions and interventions include:

- A new Energy Strategy that will set ambitious targets and actions for a fair and just transition to a zero carbon society;
- A new Economic Strategy that will support clean and inclusive growth and create jobs as part of a Green New Deal;
- The creation of a new plan that will eliminate plastic pollution; and
- The support of an alternative scheme to RHI that will cut carbon emissions associated with heat energy.

2.32 As detailed in the Grant Thornton report (Appendix 2.2) the proposed development can play a key role as an anchor for other decarbonisation developments such as district heating, energy

²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/856998/2020-01-08_a_new_decade_a_new_approach.pdf

storage or hydrogen generation and distribution as well as being a key enabler of economic growth not reliant on NI government funding.

UK Committee on Climate Change – Reducing Emissions in Northern Ireland

- 2.33 The UK CCC who are responsible for providing independent advice to government on building a low-carbon economy and preparing for climate change, in February 2019, presented a series of recommendations³ to its commissioning DAERA which included policy options for decarbonising waste in NI.
- 2.34 The CCC identified five biodegradable waste streams that should be banned from landfill in NI by 2025, ahead of the CEP mandated date of 2035. This was further reinforced in their recommendation report⁴ to the UK Parliament in June 2020 that all regions of the UK including Northern Ireland legislate this year to implement this recommendation.
- 2.35 With an earlier banning of biodegradable waste streams to landfill, the CCC state that this would allow businesses and local authorities sufficient time to prepare for the necessary collection and treatment infrastructure to develop. The report further notes that the role of EfW plants to treat diverted waste should be assessed, with specific reference to the proposed development as follows:
- 'The arc21 judicial review, in which planning permission for a £240 million waste incinerator was overturned by the High Court, may negatively impact Northern Ireland's ability to deal with waste diverted from landfill in the near term (pg 115).'*
- 2.36 Whilst it is widely known when methane escapes from landfill it is 28 times more potent a greenhouse gas than carbon dioxide over a 100-year period what is less well appreciated, and why the UK Parliament's CCC are keen to see in Northern Ireland biodegradable waste diverted from landfill as soon as practicable (i.e. by 2025), is that methane is **84 times more potent over a 20-year period**⁵. This nearer term horizon is a crucial timescale for mitigating climate change and for NI and the UK and EU meeting their 2030 and 2050 targets. Continuation of landfill as a waste management method or policy option when other less harmful alternatives can be provided risks exacerbating climate change and irreversibly damaging our shared planet.

Future Recycling and Separate Collection of Waste of a Household Nature in Northern Ireland

- 2.37 Recently DAERA sought views on the future recycling and separation of waste⁶ which will be an important element of a future Circular Economy for Northern Ireland.
- 2.38 The document acknowledges that while significant progress has been made in relation to recycling from 5% in 2000 to achieving the 50% household recycling rate by 2020 as envisaged in the current WMP, there is more to do. Not only to meet upcoming regulatory requirements under the CEP (65% target) but to make the most of opportunities to maximise the economic

³ <https://www.theccc.org.uk/publication/reducing-emissions-in-northern-ireland/>

⁴ <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/>

⁵ <https://earthobservatory.nasa.gov/features/MethaneMatters>

⁶ <https://www.daera-ni.gov.uk/consultations/discussion-future-recycling-and-separate-collection-waste-household-nature-northern-ireland>

potential of recycling, to make a contribution to meeting future climate change commitments as set out in the *New Decade, New Approach Agreement* (January 2020) and help the UK reach net zero carbon emissions by 2050.

- 2.39 The discussion document refers to the Department's latest review of landfill capacities (based on 2018 figures) which show that at current rates of fill the overall remaining non-hazardous landfill capacity is likely to run out within nine years. Without a substantial reduction in the amount of waste ending up in landfill, action will be required to alleviate significant land pressures, potentially leading to extra demand for increasingly limited pressure on available landfill, escalation of gate fees and additional likelihood of illegal dumping.
- 2.40 The discussion document places the challenging nature of the 10% landfill cap by 2035 into the current context whereby the landfill rate for household waste in Northern Ireland reached its lowest rate of 28.4% in 2018/19, a drop of 3.6% on the 2017/18 rate.
- 2.41 It further recognises that there is potential to reduce the amount of waste going to landfill by way of support for increased provision of recycling and residual waste treatment infrastructure or the development and use of EfW facilities in NI. The proposed project supports this position as increased recycling will be achieved through the MBT facility, energy recovery in the EfW and the potential to further recycle and recover residues and metals from the ash remaining after the thermal treatment process.

WRAP – Municipal Recycling Potential in Northern Ireland

- 2.42 A recent WRAP study entitled *Municipal Recycling Potential in Northern Ireland* (June 2020)⁷ that is to be read alongside the above discussion document has looked at the feasibility of Northern Ireland reaching the 65% recycling targets for the new definition of municipal waste that will now include business waste of a household nature.
- 2.43 The market analysis undertaken by Tolvik at Appendix 2.1 is consistent with the recent WRAP analysis insofar as it assumes the 65% CEP recycling target can be met through a mix of recycling rates across different waste streams and sources.
- 2.44 The Tolvik analysis has taken a more conservative view on the amount of Commercial and Industrial (C&I) waste arisings available for thermal treatment in NI (less than those estimated in the WRAP analysis), allowing for the impact of COVID-19 for example, yet their analysis concludes in 2035 that there will be a residual waste capacity gap remaining in NI of 124,000 tonnes. This is after 65% recycling is achieved and includes the Full Circle Generation gasification facility thermally treating 160,000 tonnes/year of Refuse Derived Fuel (RDF).

No Time to Waste – Resources, Recovery and the Road to Net-Zero

- 2.45 A further relevant report entitled *No Time to Waste – Resources, Recovery and the Road to Net-Zero* published in July 2020 by Policy Connect⁸, a UK government cross-party 'think tank' aspires

⁷<https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/Municipal%20Recycling%20Potential%20in%20NI%202020%20%28WRAP%20Report%29.PDF>

⁸ <https://www.policyconnect.org.uk/research/no-time-waste-resources-recovery-road-net-zero>

to provide practical recommendations for government to productively incorporate residual waste management into the UK's move to net-zero and a circular economy.

- 2.46 The UK report concluded that the landfilling and exporting of non-recyclable waste from UK homes and businesses should be de-prioritised in favour of EfW and recognises that the UK is *"disproportionally lagging behind"* much of Europe in harnessing the benefits of EfW. The report concludes that EfW has an important role to play in the necessary transition ahead: both as the lowest carbon solution for managing residual waste, but also by providing low carbon heat and electricity and supporting other sectors' decarbonisation efforts. It states that waste management must be a key consideration as the UK's focus shifts to net-zero carbon by 2050 and to addressing the long-term impacts of COVID-19.
- 2.47 This inquiry also explored claims that EfW inhibits recycling rates. Their report found no evidence to support this. Conversely, it was found that countries with higher reliance on EfW than landfill, often provide evidence that EfW goes hand in hand with the best recycling performances. By looking across Europe, the countries with the highest and above average recycling rates are those with more EfW and less landfill. For example, in 2018 Germany achieved a 67% recycling rate, 31% thermal treatment (EfW) and 2% landfill.
- 2.48 Such is the case with the proposed development, the report acknowledges that there is also opportunity for EfW to contribute to recycling and waste sorting infrastructure. EfW plants that can be co-located alongside recycling or waste sorting facilities are able to directly export the power generated to the energy intensive recycling processes in tandem with improving EfW efficiency.

Summary

- 2.49 In summary, the planning policy position remains unchanged since the previous grant of planning permission insofar as there is a need for the proposal as established by way of the WMS and WMP. With the introduction of new Circular Economy recycling targets of 65% by 2035, landfill targets that by 2030 all waste suitable for recycling or recovery shall not be sent to landfill, by 2035 that less than 10% of the municipal waste generated is sent to landfill and the UK Parliament CCC recommendation of a biodegradable landfill ban by 2025, the direction of travel is clear.
- 2.50 Any forthcoming updates to either the WMS or WMP will not depart from the identified need for infrastructure to deal with our residual waste. To the contrary, with diminishing landfill capacity, landfill bans and restrictions and the potential to contribute towards recycling and decarbonisation efforts, the arc21 residual waste treatment project remains a critical requirement to achieve a sustainable future and meet ambitious targets.

Residual Waste Market Assessment

- 2.51 As outlined in the Tolvik Report (Appendix 2.1), in Northern Ireland we produce approximately 1 million tonnes of Local Authority collected waste every year and of that approximately 50% or 500kt is currently recycled. That leaves the remaining 50% or 500kt to be managed.

- 2.52 This 500kt excludes residual waste generated beyond Local Authority collected waste, for example C&I waste where such waste is similar in composition to waste from households. This classification is consistent with the CEP, WRAP's June 2020 study for DAERA and the Tolvik report. Taking this into account, it is estimated in 2018 that approximately 185kt of this waste was generated therefore the total municipal waste in NI to be managed was 642kt.
- 2.53 Of the Local Authority collected household waste, approximately 294kt (c. 28%) was disposed of at landfill in 2018 – this figure significantly increases when accounting for a C&I estimate. From export data available for NIEA, it is also confirmed that approximately 130kt was exported from NI to EfW facilities in Europe including the Republic of Ireland (RoI).
- 2.54 Tolvik's analysis assessed what capacity gap would exist in 2035 and assumes the CEP target of 65% recycling is met. Their analysis concludes that assuming the proposed EfW facility is constructed with a thermal capacity of 210ktpa, it is estimated in 2035 that there will be a residual waste capacity gap remaining in NI of 124kt. These projections have been modelled to reflect the impact of the projected trends in the number of households, the estimated short and longer term impacts of COVID-19 and projected recycling rates.
- 2.55 This would suggest that, including existing thermal treatment facilities, there will be sufficient residual waste in NI to ensure that the arc21 EfW facility will not be oversized.
- 2.56 In Tolvik's analysis the common metric used is the net tonnage for thermal treatment. The arc21 proposed development includes facilities for pre-treatment of residual municipal solid waste to recover recyclates. It also includes post-treatment facilities.
- 2.57 Importantly, the data available or estimated may not fully reflect the actual volume of residual waste generated by NI as illegal landfilling continues. In June 2020 the DAERA Minister confirmed in response to an assembly question that there are currently 81 open cases of alleged waste offending throughout NI being investigated by NIEA. Of the 81 open enforcements at the time of writing NIEA are in a position to provide tonnage data on 28 of these sites. The total tonnage contained in these sites is estimated to be 163,065, considering this is less than 50% of the illegal sites this is certain to increase.
- 2.58 Illegality in the waste sector places a significant environmental and economic cost on NI. As previously stated, in the PAC commissioner's report consideration was given to the findings and recommendations in the Mills Report (2013). The report's recommendation in relation to strategic waste infrastructure remains yet to be fulfilled:
- 'Limit the number of waste authorisations to the number necessary to meet Northern Ireland's projected waste needs and create the necessary new strategic waste infrastructure which can be more easily regulated and monitored'. (emphasis added)*
- 2.59 Integrated infrastructure as that proposed is wholly consistent with the report's recommendations.
- 2.60 At a European level, a recent study⁹ undertaken by Confederation of European Waste to Energy Plants (CEWEP) calculated that across Europe, there would still be a need for an additional 41

⁹ https://www.cewep.eu/wp-content/uploads/2019/05/Peer-Review_waste-treatment-need-in-2035.pdf

million tonnes of EfW capacity to meet the CEP municipal waste landfill targets assuming the recycling targets for 2035 will be achieved.

Economic Burden and Uncertainty

- 2.61 Setting aside the environmental and economic burden of illegal waste activities, waste management is estimated to account for approximately 15-20% of annual Local Authority expenditure.
- 2.62 The Grant Thornton analysis (Appendix 2.2) estimates that for the past 3 years the annual average costs to NI Councils for landfilling of their waste is in excess of £30m taking into account landfill taxes and gate fees. NI Councils are paying approximately £16m per annum to export Local Authority waste. Destinations for exported waste include Sweden, Denmark and RoI.
- 2.63 Analysis from each of the 11 Council's finances in NI, taken from accounts for the 2018/19 financial year, shows that all Councils were in debt as of April 2019 – the combined total for the arc21 Councils alone being over £350m.
- 2.64 Moving forward, the impact of the COVID-19 crisis will lead to a significant worsening of local government finances as rates and other incomes decline rapidly. From pressures on public expenditure at an Assembly and Executive level in NI to a Local Council level, there has never been a more pressing requirement to support economic growth through increased investment in service delivery and infrastructure. In addition, the impact of the COVID-19 crisis has brought to the fore the importance of self-sufficiency for NI in relation to all supply chains, including waste management.
- 2.65 As detailed below, continuing to rely on the status-quo of landfilling and exporting will likely lead to increased costs and will not provide the budgetary certainty a Local Authority owned and integrated facility will provide as that proposed by arc21.

Resilience and Self-sufficiency

- 2.66 The COVID-19 crisis has highlighted that waste management is an essential service to our society and Councils across the UK are making sustained efforts to ensure the continuity of waste management activities. Maintaining this continuity is a serious challenge as Councils see increased volumes of residual household waste, disruption due to shortages of staff, the need to implement increased health and safety measures and providing provision for the safe handling of waste produced by householders fallen ill with COVID-19.
- 2.67 Across the UK and Europe, there has been a significant increase in demand for capacity in EfW facilities due to the increased volume of household and other waste and because of the challenges outlined above. Relying on other European countries to accept waste from NI carries significant risk insofar local demand is increasing and that export of waste involves a supply chain of various transportation movements including refuse collection vehicles, articulated trucks, ships and cranes to get from the kerbside to the EfW facility with individuals involved at each step of this process.
- 2.68 The Strategic Investment Board in a report commissioned by DAERA (*Analysis of the 2020 Residual Waste Infrastructure Requirements*, July 2015) has described the reliance on exporting

residual waste as *'perverse'*. This reflected the context where NI is exporting waste as a renewable fuel which contributes to meeting renewable energy targets elsewhere in Europe whilst at the same time importing fossil fuel to meet NI needs. Their report stated:

'... even setting aside the obligation to take due account of the Proximity Principle medium to long term reliance on export as a means of securing the environmental benefits associated with achieving EU compliance can be considered as a very high-risk approach'.

- 2.69 It is plainly illogical given its carbon footprint and a missed opportunity for NI to continue to export its residual waste. It is counter-intuitive for our Councils to pay (£16m per annum) to export waste to EU countries where they realise the additional benefits of heat and electricity, particularly where security of energy supply is of concern for NI and NI has to pay to import the fossil fuel equivalent energy.
- 2.70 There is also no guarantee that this cost of export will not increase in the future for Local Councils. For example, it is known that other countries such as the Netherlands and Sweden have introduced import tax, €32 per tonne and SEK75 per tonne rising to SEK125 per tonne in 2022 respectively. These taxes forced several Local Authorities including Essex, to switch from export to landfill at short notice. With the COVID-19 crisis, it is likely that many more will follow in prioritising local needs before importing waste.
- 2.71 As summarised by Tolvik (Appendix 2.3) there are increasingly risks associated with a long term residual Local Authority Collected Municipal Waste (LACMW) solution based on the production of RDF for export. These include:
- Tax uncertainty in recipient countries;
 - Capacity uncertainty – in Denmark it has been agreed to reduce EfW capacity by 30% to remove reliance on imports;
 - Brexit related issues – volatility of exchange rates and uncertainty around port delays and transport costs;
 - Supply chain complexity – modest disruption can have a serious impact; and
 - Reputational risk – the ability for a Council to have certainty to the final destination of their waste is much less than delivery direct to local facilities.
- 2.72 Similarly, with disposal of 29% of our waste currently going to landfill at a cost of £30m per annum, there is no long-term security in this option. Information from DAERA confirms that landfill capacity in NI is likely to run out within nine years. Without an alternative solution, this is likely to lead to increased transport costs, with the associated increase in emissions and a likely escalation of gate fees to facilitate demand.
- 2.73 In summary, Local Councils cannot continue to rely upon landfill and export of residual waste as a viable medium to long term solution. Both are inconsistent with the fundamental principles of the waste hierarchy and the CEP principles. They will also contribute to the climate crisis and will see rising costs for Local Councils and ratepayers in the future.

Existing Thermal Treatment Facilities

- 2.74 As outlined in the Tolvik Report (Appendix 2.1), within NI other than facilities thermally treating specialist waste streams, e.g. wood, there are currently two facilities permitted to combust (treated) residual waste:
- Full Circle Generation (FCG) Limited, Belfast, BT3 9ED. This has an operational permitted capacity of 180ktpa.
 - Lafarge Cement UK Limited, Cookstown, BT80 9AR. The permit for this facility does not explicitly refer to tonnages as it is permitted to accept a range of waste and biomass derived alternative fuels to coal, including residual waste in the form of Solid Recovered Fuel (SRF). Over the last three years it has accepted around 30,000MWh of SRF each year – which is conservatively estimated to be no more than 9ktpa, a trivial amount of waste in planning terms.
- 2.75 The FCG facility, described in its planning application as a combined heat and power generating station for the treatment of RDF by gasification, was due to become operational in 2017. In March 2020 the operator Bouygues informed the NIEA that the facility has completed its commissioning and is now operational.
- 2.76 As outlined in the Tolvik Report, (Appendix 2.3 *Review of Local Authority Residual Waste Procurements*) the popularity of gasification (or similar Advanced Conversion Technologies (ACT)) for the treatment of residual waste in the UK was primarily driven by the subsidy support available for the power generated – initially under the Renewables Obligation (RO) scheme and more latterly under Contracts for Difference.
- 2.77 The overall performance of the ACT sector has been very poor. Ten commercial-scale ACTs have been constructed in the UK, four are understood to have been “taken over” (completed commissioning and now operational) one has been mothballed, of the remaining five ACTs, three are currently in hot commissioning and have been in construction for at least 4½ years. A conventional EfW typically takes 3 – 3½ years to construct. According to *UK Energy from Waste Statistics – 2019* in 2019 seven ACT facilities which started construction before 2017 accepted residual waste and on average they processed just 27% of their expected capacity. Notably, the Tolvik analysis has assumed the FCG facility will process 90% of its expected capacity.
- 2.78 As a consequence, credible developers of infrastructure on behalf of Local Authorities are moving away from ACT/gasification and a number of sites with permission for ACT/gasification have gone back into the planning system to alter their thermal treatment technology to a conventional modern moving grate technology.
- 2.79 The FCG facility’s planning permission restricts its waste feedstock to EWC code 19 12 10, RDF. Unlike moving grate EfW facilities ACT/gasification cannot process untreated waste. This clearly implies any Local Authority waste to be accepted at this facility will be required to be pre-treated off-site prior to arriving at the FCG facility.

- 2.80 This is in contrast to the proposed development that will provide an integrated and self-sustaining waste management solution entirely independent of other remote facilities, consistent with the recommendations of the Mills report.
- 2.81 As outlined by Tolvik (Appendix 2.3) the overall performance of the ACT/gasification sector has been very poor and for NI Councils to rely on one facility and a technology with a limited track record for the majority of their residual waste treatment requirements and for securing CEP compliance is high risk.
- 2.82 As noted in the Tolvik assessment (Appendix 2.1) there is one cement kiln in Northern Ireland which is permitted to accept SRF. As detailed this facility has accepted small amounts of waste material. Any waste accepted from a Local Authority waste source would require this material to have very specific specifications, including a high calorific value, low moisture and be homogenous. The source for this material is generally commercial industrial waste. LACMW does not offer these properties. There are also a number of cement kilns in ROI and Europe which accept SRF from NI. These facilities are not suitable to provide a robust, reliable and sustainable solution to NI Local Authority residual waste treatment requirements.
- 2.83 Importantly, the availability of alternative facilities from those considered by the PAC and DfI prior to the previous grant of planning permission remains unchanged. There is currently no waste management facility either operational or proposed in Northern Ireland that seeks to secure the combination of treatment processes and surety of controls for arc21 in an integrated fashion consistent with this proposal. Furthermore, the technology choice and configuration has been chosen to enable arc21 fulfil its corporate objectives to substantially pre-treat council collected waste prior to thermal treatment, minimise waste to landfill and to promote, educate and influence others on waste prevention, minimisation and recycling.

Recycling and Landfill Targets

- 2.84 As outlined earlier in relation to waste policy changes, NI is legally obliged to meet the 2035 targets imposed by the CEP. Measures to achieve these targets will be required to be considered as part of any forthcoming revised WMS or WMP.
- 2.85 The updated targets will require Councils to ensure that less than 10% of the municipal waste generated is sent to landfill (currently at 28% with additional reliance on export) and that 65% of municipal waste is re-used and recycled (currently at 49.5%).
- 2.86 The Tolvik market analysis (Appendix 2.1) refers to evidence from across Europe which suggest that once a 50% recycling rate has been achieved as is almost the case in NI, maintaining the rate in increased recycling becomes progressively more challenging. This is because increases in recycling are then as a result of progressive improvements in capture rates of individual waste streams rather than from increasing the range of materials captured for recycling.
- 2.87 The proposed development will have the ability to make a contribution towards the 65% target through the extraction of recyclables from residual waste in the MBT plant and through processing the residues from the EfW facility.

- 2.88 Evidence elsewhere across Europe as referenced in the *No Time to Waste – Resources, Recovery and the Road to Net-Zero* inquiry above, demonstrates that the provision of EfW facilities does not impact negatively or discourage recycling. Other countries such as Germany and Belgium achieve the highest recycling rates and also have the highest energy recovery rates and the lowest landfill rates. For example, in 2018 Germany achieved a 67% recycling rate, 31% thermal treatment (EfW) and 2% landfill.
- 2.89 Achieving the 65% recycling target does not negate the requirement for a residual waste solution such as EfW. In the absence of EfW, there is no alternative solution to landfill other than to increase the level of export to meet the 10% cap. As explained above, reliance on export is not considered a feasible nor sustainable option.

Delivering Value for Money

- 2.90 Having confirmed that the proposed facility will play a key contribution to NI achieving 2035 targets, consideration should also be given to the proposed solution in delivering value for money.
- 2.91 As outlined by Grant Thornton (Appendix 2.2), the COVID-19 crisis has contributed to a significant worsening of Local Government finances as rates and other incomes decline rapidly. For the reasons as outlined above, costs for Local Councils associated with current waste management practices i.e. landfill and export of waste, will only continue to increase in the future. The arc21 facility will ensure councils are self-sufficient and have a long-term, sustainable and resilient solution for their waste.
- 2.92 In the absence of any NI Executive or Local Council budget to secure such infrastructure, it falls upon the private sector to provide a solution. The proposed development represents £240m injection of foreign direct investment in NI infrastructure that is not at the expense of the public purse.
- 2.93 arc21 is undertaking a public procurement exercise to deliver the proposed facilities with a single remaining bidder. The sequence of the current process is to complete the public procurement following the grant of planning permission and to compile a business case for consideration by arc21 Local Councils.
- 2.94 The capital costs of the proposed development will be funded by the contractor if successful, with arc21 Local Councils then paying a gate fee over the term of the project agreement. Once completed and commissioned, the land and facilities will be in public ownership with arc21 granting a licence to a professional operator.
- 2.95 Importantly, the final tender will be scrutinised by arc21 Local Councils and must be in accordance with arc21's specification and requirements. The level of the gate fees set out in the final tender will also be assessed as to whether they represent value for money depending on market circumstances at that time. It is also foreseen that any contract will have a mechanism for the sharing of certain project revenues for example through the sale of commodities such as metals that have been recycled. This will be income for arc21 and the partner Councils and may partially offset gate fees.

- 2.96 To date and due to ongoing delays in securing the statutory consents, the final bidder has not submitted a final tender to allow arc21 to complete a business case to submit to its constituent Councils. There has been no proposal submitted or agreement made with regards to commercial issues such as duration of any contract or council waste tonnage commitments. It is foreseen that this commercial process would be resolved through the procurement process in competitive dialogue following the grant of planning permission.
- 2.97 In short if there is no competitive business case presented by the bidder that is accepted as compelling by arc21 Local Councils, the procurement process will collapse and the facilities will not be delivered. A new procurement process, or more likely multiple procurement processes, would be required to be commenced for any alternative solutions. The reputational damage to Northern Ireland will be significant as all three of the regional waste management projects will have been abandoned.
- 2.98 As examined in Appendix 2.3 by Tolvik, there are 52 Local Authorities or Local Authority partnerships in the UK which generated more than 200ktpa of Local Authority collected waste in 2018/19. Of these, 45 (87%) are currently in a long term contract that supports residual waste treatment infrastructure. Seven (13%) Local Authorities have no such long term contract and of these, four procured a long term solution but the contract has subsequently been terminated. Only three Local Authorities or partnerships generating more than 200ktpa have yet to procure a long term residual waste solution including arc21. It is therefore highly unusual that a Local Authority partnership of arc21's size has yet to secure a long term residual waste solution.
- 2.99 Tolvik also point out (Appendix 2.3, para 32 and 38) that in terms of selecting a long term residual waste solution, the performance and track record of the sector means that they do not believe that for future procurements any credible bidder would propose either a standalone MBT nor ACT, such as gasification. They conclude that the only deliverable technology option for a future Local Authority procurement is likely to be a conventional moving grate EfW. Therefore highlighting that although the arc21 procurement was launched in 2008 the technology configuration proposed today presents a robust, long term economical solution for arc21 residual waste requirements for the future.
- 2.100 Notably, the benefits of the proposed development are not just limited to cost savings for Local Councils and must be considered in the wider context in terms of environmental value. The benefits of EfW include diverting waste from landfill (reduction in GHG emissions), particularly limiting methane emissions from legal and illegal landfills which is a much more potent greenhouse gas than carbon dioxide, minimising transportation of waste and importation of fossil fuels (carbon footprint) and capturing the energy (electricity/heat) benefits for NI.

Summary

- 2.101 PPS11 supports proposals for waste management facilities where need is identified in the WMS and WMP. As set out previously, the arc21 WMP determined its capacity requirements based on a longer term view of residual waste requirements beyond the 2020 targets.
- 2.102 Notwithstanding, the 2030 and 2035 targets introduced by way of the CEP that will be required to be considered as part of any revised WMS or WMP that are yet to be progressed. The CEP sets ambitious targets of increased recycling by 65% and a landfill restriction in 2035 and

ultimately a cap on landfill of 10% of all Municipal waste in 2035. Should the NI Executive adopt the CCC recommendation to ban biodegradable waste to landfill by 2025 the need to develop infrastructure becomes even more pressing.

2.103 In the absence of a residual waste solution such as that proposed, it is unclear how the 10% landfill cap can be realised without significantly increasing the level of export of waste given the lack of viable available alternatives. This approach is not a desirable or sustainable medium to long term solution with expected risk and increasing costs for Local Councils.

2.104 The market analysis provided as part of this update confirms that even in achieving the 65% recycling target and assuming the proposed EfW facility is operational based on its intended design capacity there will remain a capacity gap of c.124kt in NI in 2035.

2.105 arc21 are one of only three Local Authorities or partnerships in the UK generating a significant amount of waste that are yet to procure a long term residual waste solution. In the absence of the proposed solution, NI will miss the opportunity to realise £240m of private investment towards public services, contribute towards renewable energy and climate mitigation targets, enhance NI's security of energy supply and provide a reliable waste management solution.