

New Infrastructure for the Green Economy



arc21 households produce 15 million black bins' worth of rubbish every year which can't be recycled. Since 2012/13 the total amount of waste collected by Northern Ireland councils has increased by 9.4%.

During October - December 2020, the amount of waste collected by Northern Ireland councils grew by 9.2% compared to the same period last year and 17.9% compared to 2012.

At present we manage this waste by burying it in the ground or exporting it overseas to be incinerated. Neither option is sustainable, either environmentally or financially.

Existing landfill sites in Northern Ireland are expected to reach full capacity by 2030.

The UK Climate Change Committee has recommended a ban on landfilling biodegradable waste by 2025 and the phasing out of waste exports as part of the Sixth Carbon Budget.

Until society stops producing so much rubbish, we need a better way to manage our waste which is safe, affordable, reliable and not so impactful on the environment.

arc21 is proposing to develop new infrastructure at Hightown Quarry outside Belfast including Mechanical Biological Treatment (MBT) and Energy from Waste (EfW). This solution was designed specifically to be a council owned asset,

serving the needs of arc21's councils, and is sized appropriately. This is detailed in arc21's Waste Management Plan which has been approved by both its councils and the relevant Northern Ireland Executive Minister.

Mechanical Biological Treatment (MBT)

The MBT will be one of the island's largest recycling facilities. It will remove valuable recyclable material from black bin waste which will be delivered to it.

Materials will be extracted mechanically using automated separation equipment as well as manual hand picking.

The remaining organic-rich waste will be treated biologically in bio-drying tunnels to reduce its mass and create a Refuse Derived Fuel for the EfW.

All MBT operations will take place in purpose-designed, fully enclosed buildings to prevent noise, dust and smells from escaping.

There are over 300 MBTs operating in Europe. arc21's facilities will contribute directly to improving household recycling rates by 5% - 10% and are compatible with the drive to increase recycling to at least 65% and the development of a Circular Economy for Northern Ireland.

Energy from Waste (EfW)

Once the MBT has recovered material the EfW will recover energy. An EfW plant is essentially a power station which uses non-recyclable rubbish instead of fossil fuels to generate power and heat.

arc21's EfW will burn this rubbish at very high temperatures to create pressurised steam. This is turned into renewable electricity using a turbine and generator. Operations take place within an enclosed area and no waste is stored on site.

EfW is a safe, highly regulated technology and there are hundreds of such facilities operating across Europe. arc21's proposals have been considered by a range of statutory consultees including the Public Health Agency - no public health issues have been raised. arc21's facility will generate enough electricity (18MW) to power the equivalent of 30,000 homes. The power and heat produced could be used for other Circular Economy purposes such as clean fuels production.

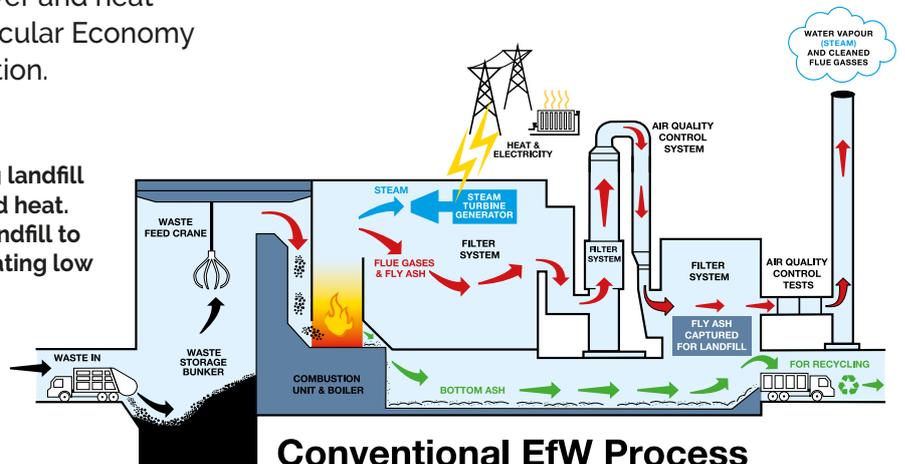
Ash created from the incineration process will be used to produce a material which can be used in the construction sector. As the facility will divert waste from landfill (which produces methane, a highly potent greenhouse gas), arc21's proposal will reduce greenhouse gas emissions by 57,000 tonnes in comparison.

arc21's councils will also be provided with new revenue streams through the materials recovered and energy produced, offsetting the facilities' gate fee.

There are over 500 EfWs across Europe, including c.50 in the UK and two in the Republic of Ireland (with a third in planning). Even though Ireland's EfWs are relatively new, the country is still exporting c.35% of its waste.

“EfW is the lowest carbon solution for managing residual waste, by diverting landfill and generating useable electricity and heat. Every tonne of waste diverted from landfill to EfW saves 200kg of CO₂, while generating low carbon energy and heat”

Policy Connect UK cross-party Parliamentary report 'No Time to Waste' July 2020



arc21 is a local government body made up of six Northern Ireland councils representing 1.1 million people.

www.arc21.org.uk  