Maturing technologies continue to drive change

Ainsley Fraser looks at Waste to Energy and the associated technologies and support infrastructures required for the sector to flourish.

The ways in which we manage waste have changed inexorably over the last decade and with the targets we all have to hit by 2020 and 2030 – or before, the rate of change is only likely to accelerate. Processes and technology which were deemed experimental or revolutionary (or both) a few years ago, have matured and proven themselves and are now permanent features of the industry. Others are evolving all the time, so one may be confident that the range of options will broaden, become significantly more efficient – and generate important energy resources and bi-products in the future.

But what has also changed in recent years is the shift in attitudes and thinking, particularly in the municipal and local authority sector, towards long-term, big picture waste management strategy and planning. There is recognition and a significantly better understanding that providing integrated waste solutions which are fit for purpose over much longer periods, involves serious commitment and major investment. That the need to deliver these strategies is running concurrent with major reductions in government support and funding, increased regulation and enforcement and both change and uncertainty in the markets for waste stream derived materials, only adds to the pressure.

Facilities being built now – or in the relatively recent past, are designed with an operational life expectancy of a minimum of 25, 35 or even 40 years. Not least because of scale and cost, many of these facilities now involve partnerships, joint ventures or committed long-term contracts. But these major waste stream processing plants – whatever their technology, are only part of the solution. Changes in waste collection and handling – be that household or commercial, all demand a parallel support infrastructure in order to operate effectively ... including waste transfer stations, MRFs and other dedicated facilities.

The new large scale plants are hungry – and they require a carefully planned network of feeder facilities – such as waste transfer stations. Typically, these will be the consolidation centres for local collection rounds, prior to transfer in bulk to the ultimate destination. Given the important role which these staging posts have to perform, it is vital that they are optimally located – and built and operated to best practice standards ... we have moved on from the partially open agricultural style buildings of the recent past.

WTS Best Practice should include keeping the doors shut

One of the best and most comprehensive report documents on the whole issue of the location and design of waste management facilities was produced by Cambridgeshire County Council in 2011. There are some elements which could be challenged – notably what planners regard as being acceptable proximity between waste facilities and residential areas. The document has the benefit of being able to use 'artists' impressions', but in reality, sites and particularly, access to major infrastructure for bulk transfer, will continue to support the business case for these facilities to be at remote locations adjacent to major roads and rail. To view the document, go to www.cambridgeshire.gov.uk/info/20099/planning_and_development/49/water_minerals_and_waste/5 and click on The Location and Design of Waste Management Facilities SPD July 2011.pdf

One of the other key issues with the development of modern waste transfer stations is on-site management and operating discipline. A smart, architecturally pleasing building may blend in with its general surroundings ... it may have negative air pressure and control systems ... but if all the doors are left open, or a truck has hit the door operating mechanism and damaged it, the issues of noise, odour and dust will not be controlled.

Monitoring and enforcement is crucial – and nearby businesses and communities need to be part of that process. Problems often arise after the local authority has seen through the planning, build and commissioning process – and then, due to escalating pressures on budgets, has been forced to outsource the operation to a third-party contractor, probably based on price. Lowest prices are not conducive to the maintenance of best practice. >