

# Coming full circle

With the draft circular economy guidance standard out for comment, **Paul Suff** speaks to some of the practitioners involved in its development

Outside the sustainability profession, most people will not have heard of BS 8001 but, when finalised, the new guidance standard is likely to have a major impact as businesses confront the growing challenge of accessing resources and moving from linear to circular economy business models.

A draft – the framework for implementing the principles of the circular economy in organisations – is available for public comment and is the fruit of two years' work by a committee established in December 2014 by standards body BSI (see *the environmentalist*, June 2015, pp 20–21). The committee consisted of nearly 60 members, representing the environment (Defra) and business, energy and industrial strategy (BEIS) departments as well as the Scottish and Welsh governments, IEMA, the CIWM, Wrap and the Ellen MacArthur Foundation (EMF). A smaller panel of ten experts, including Josh Fothergill, IEMA policy lead for sustainable resource management, produced the draft. Work started in November 2015, and 16 organisations, including Highways England, home improvements retailer Kingfisher, construction firms Skanska UK and Tarmac, and office products supplier Wiles Greenworld, have been engaged in discussing and piloting development of the document.

Phil Cumming, director of Koru Sustainability, chair of the committee and a member of IEMA's strategic advisory council, believes 8001 is essential: 'There is no

shortage of standards, publications and online resources covering particular aspects of the circular economy, but few are specifically directed at helping organisations take practical action and shifting them from a linear to a more sustainable and circular economic model.'

He says the benefits include standardising the use of terms, some of which are open to interpretation and potential misuse, helping organisations identify their roles and providing clarity and direction on key issues to promote collaborative working.

## Starting points

Given that BSI approved the development of 8001 just two years ago, the draft has been produced quickly, especially bearing in mind that the committee started with a blank piece of paper and had to accommodate competing views. Cumming says the makeup of the drafting panel, which consisted of experts in sustainability and the circular economy, and the high level of engagement with interested stakeholders, particularly through the pilots (see panel, p33), helped to speed the process. 'We got the right people round the table,' he says.

One of the first steps was to agree definitions for some of the common circular economy and resource management terms and concepts. Committee and steering panel member Dr Stuart McLanaghan, director at consultancy Eden21 and a resource and sustainability

specialist, says it was crucial to define key terms: 'There is a lot of terminology emerging in the circular economy space and some of the language introduced is not generic. Encouragingly, feedback from the industry pilots revealed that the definitions in 8001 really added value for the user.'

Martin Charter, director of The Centre for Sustainable Design at the University for the Creative Arts (UCA), was also a member of the drafting panel. He says 8001 aims to bring together different thinking about the circular economy and provide clarity on the terminology. 'There's a lot of complex information around the circular economy and it is also evolving. Merging it in one document will help organisations think through the issues,' he says.

The draft defines 79 core and ten supplementary terms. For example, under the heading 'loop', there is an explanation of 'open-loop' and 'closed-loop' systems. Circular economy concepts, including cradle-to-cradle, industrial symbiosis and biomimicry, are also described.

Charter says it was crucial to ensure the language in the standard was used correctly. 'Jargon alienates non-specialists. You have to speak the language of the audience,' he says, explaining that, at UCA, the pilot focused on the built environment because the director of estates has operational responsibility for sustainability.

'The topic of conversation has to resonate with the audience. Discussions with the director were about the implications of circular economy thinking for the built environment, such as reusing material from excavations and ensuring new buildings are easier to upgrade and repair. And when we involved the head of catering, the main topic of conversation was food waste.'

Achieving consensus on the terminology in 8001 was a challenge in some areas, particularly definitions of closed- and open-loop systems, says Cumming. There was also debate over the role of energy-from-waste (EfW). He admits that the reference in the draft to EfW is pragmatic, but says this is because it is a process that must remain under appraisal. 'What is too expensive to reclaim and recycle now might not be in the future. A wider range of waste types is likely to become more viable, so organisations will need to continually review whether EfW is the best solution for the residual waste going to it,' he says. Cumming went on to say, half-jokingly, 'nothing breaks a material cycle more than burning it', adding:

'After all, even landfills can be mined to extract resources. So society needs to be cautious about burning waste for energy. Nonetheless, EfW has a role to play, particularly as firms transition to a more circular approach.'

McLanaghan led the work on business models, an area that also triggered some debate, specifically how organisations of different longevity implement the principles of the circular economy. 'Established organisations are more likely to begin with a more limited transition to a circular mode of operation – for example, single product level – but once concepts and systems have been developed, implemented and improved, companies can explore roll-out at a macro-level,' he says.

In the event, the draft states: 'Adopting a new disruptive business model might be preferable for a start-up organisation. However, for an established business, with many years' trading experience, innovation around the existing business model might be preferable to adapt (eg re-engineer) from more linear towards more circular operational functionality. For example, an organisation profits from the extension in the life-time of ink cartridge components by offering a refill service.'

The analysis of business models started with an extensive international literature review, followed by testing across committee members' networks and industry piloting. 'The first hurdle was to filter the findings because descriptions of circular business models vary enormously and similar approaches can be defined in different ways,' says McLanaghan. 'Sharing platforms, lease agreements, remanufacture and product life-extension were some of the models examined.'

Fothergill ensured the views of IEMA members were represented on the drafting panel, particularly in relation to the standard's framework (cl 5). He says the panel refined the thinking on business models down to a core of six headings. 'However, our work also recognised that, beyond these models, there are numerous enabling mechanisms, such as 3-D printing, which are sometimes mistakenly described as circular economy business models when they are more often a means to enable a change in business practices. As such, we hope the standard will help to provide clarity in communicating organisational circularity initiatives in a consistent manner.'

### Guidance only

Panel members are keen to point out that 8001 is a guidance standard, providing practical advice on the circular economy rather than a prescriptive benchmark like ISO 14001, which sets out absolute requirements that have to be met if a user wishes to make a claim of compliance. 'It's not a technical standard, it's not about metrics,' says Ella Jamsin, research lead at the Ellen MacArthur Foundation and another panel member. 'It's more of a guidance on the practicalities of putting in place a circular system.'

The foundation was established in 2010 by MacArthur, the retired solo, long-distance yachtswoman, with the aim of accelerating the transition to the circular economy. Jamsin leads the charity's research programme. She says that, by concentrating on implementation, the standard complements the work of the foundation. 'It goes into the practical details to help an organisation put in place a process to support circularity,' she says. 'The standard also highlights the potential opportunities and innovations that could flow from adopting a circular economy rather than treating the idea as a set of constraints.'

Charter envisages sustainability practitioners using 8001 to start conversations on what the circular economy means for their company with colleagues in other parts of the business: 'Perhaps they will meet those in product design to look at the opportunities for remanufacturing parts or for offering a repair service.' He says it is important for everyone to be at the same level of understanding so they can work together on what circularity means for the business. He cites the example of the chief executive at a large company who set the business a circular economy target but left without bequeathing a clear vision on what it entailed. 'The firm has ended up with different pockets of interest across the business and varying perspectives for how it should move forward.'

Charter says the content is set out deliberately to engage organisations at different stages in their journey and understanding of the circular economy. 'It looks at different levels of maturity. There are only a small number of organisations re-engineering their business models to a circular approach. Most, however, are at the beginning of their understanding, so the standard provides them with a way of looking at one product or process.'

Twelve circular business models under six headings are in the draft: on demand; dematerialisation; product lifecycle extension/reuse; remanufacture and manufacture with secondary materials; product as service; and sharing economy and collaborative consumption. There are six principles, from collaboration to value optimisation, and an eight-stage framework for putting them into practice. Cumming describes the framework as a general tool and is keen to stress that it is important that organisations go through the steps, determining first the relevance of the circular economy to their business and then where to begin. 'After framing and scoping, some might conclude that a circular model is not for them, and that is important.'

Several areas are not covered by other BS or ISO standards. One of these is change management, defined in the standard as an 'approach taken to prepare, equip and support individuals, teams and organisations



to successfully adopt change in order to drive organisational success and outcomes'. Cumming says: 'Change management is foremost about people and this aspect doesn't really seem to be covered in other British or international standards.'

The inclusion of systems thinking is also novel but necessary, says Cumming, because you cannot drive systemic change without a systems thinking approach. The draft explains systems thinking as 'how different parts of a system can influence one another within a whole and the relationship of the whole to the parts over time'. Cumming adds: 'Although they found it challenging, the pilot organisations accepted that it was a process they had to go through to identify issues in their wider value chains and how to tackle them.'

Importantly, 8001 highlights that, in many cases, addressing demand-side solutions to encourage more sustainable consumption patterns, such as influencing consumer behaviour, may be equally or more important than supply-side interventions, such as the mechanics of materials selection, product design and manufacture.

### Next steps

Consultation on the draft standard ([bit.ly/2eaXYNw](http://bit.ly/2eaXYNw)) closes on 15 January and Cumming is looking forward to receiving comments, believing they will make the document more robust. IEMA has held workshops and hosted a webinar (available at [bit.ly/2gmoXqU](http://bit.ly/2gmoXqU)) on 8001. The drafting panel will review comments and aim to produce the final standard for publication in May.

Cumming expects lots of feedback on cl 7, which provides 15 key areas to consider that could help or impede companies' progress in delivering their circular economy objectives. 'Moving to a more sustainable and circular mode of operation is a complex process and there are established rules and processes that can hinder progress,' he says. 'These include existing regulation, which mostly underpins a linear rather than a circular economy, and management and governance arrangements, which do not support the exchange of information and collaboration on resources.'

There has been international interest in the standard, with paper goods giant Kimberly-Clark in Atlanta in the US and two Singapore-based firms, the multinational conglomerate Sime Darby and real estate specialist City Developments, among those participating in the piloting and engagement work facilitated by Forum for the Future. 'The Dutch and Swedish standards bodies have taken a keen interest,' Cumming says. He also spoke about 8001 at a recent meeting of CEN, the European standards body.

Cumming says the standard is just the start and he expects more technical supporting standards will emerge in due course, such as a potential specification for closed-loop materials.

Will 8001 make a difference? Jamsin believes it will help to shift thinking and the standard has made a good fist of making a complex subject more approachable: 'Unavoidably, the language of circular economy is different from the business as usual – it's a whole different mindset. But that's why the standard includes a long section about definitions. That clarity is necessary to engage organisations and encourage them to do things differently.'

## Piloting 8001

UK standards body BSI appointed Forum for the Future last summer to test aspects of the draft standard with various organisations. In particular, it was tasked with developing a programme of pilot sessions to test the content and structure of the standard's core clauses – cl 4 on the principles of the circular economy, and cl 5 on putting the principles into practice.

The pilots consisted of workshops involving employees from participating companies and sometimes people from other organisations. Gary Rogerson, sector sustainability manager for highways at Skanska UK, took part in the pilots with colleagues from Highways England, talking through the principles in the standard and what embracing them would require of businesses. 'Here you had a client and contractor discussing the implications for the delivery of construction projects,' Rogerson says. He says the conversation centred on the use of common construction materials, such as aggregate and fill, in projects with a 60-year life and how circular economy thinking applied to them.

Rogerson believes the principal challenge to achieving greater circularity in the use of materials is the relatively long life of schemes: 'We recently completed some work on the M25, which involved installing new gantries and signs but, with automated vehicles not too far off, these could be redundant and we might need to rethink their use with circular economy principles in mind. That's the sort of discussions we'll have to have.' Rogerson says it is likely that Skanska, which has a clear sustainability vision and a long tradition of 'greening' its projects, will adopt the standard and apply its principles as a way to embed the circular economy concept in its day-to-day operations. 'The circular economy links with lean construction practices and repairing assets rather than replacing them, which are processes that Skanska has embraced,' he says.

Toby Robins is former sustainable development director at office supply firm Wiles Greenworld and now chief executive at Office Club, a firm providing consolidated procurement and other services to 230 independent office products dealers. A member of IEMA's strategic council, Robins also took part in the pilots. 'Under the auspices of Wiles Greenworld, we involved experts from the paper industry to discuss how clauses 2 and 4 would apply,' says Robins.

Clause 2 is the terms and definitions used in 8001, and cl 4 is focused on the principles of the circular economy. Robins says defining the myriad terms, from 'assemble' and 'bill of materials' to 'waste and warranty', is hugely beneficial. Diagrams are not common in standards, but Robins backs their inclusion in 8001: 'The definitions are really constructive and are supported by good graphics, which I think will help users better understand concepts and how different elements are linked.' He adds that the six principles set out in cl 4 provide a clear structure and a frame of reference for organisations. 'What really impressed me was the focus in the standard on systems thinking and how organisations need to take a holistic approach to understand how individual decisions and activities interact within their wider value chain,' Robins says. 'It should ensure there is no blind application of the waste hierarchy dogma.'

Robins says Wiles will apply the principles internally, seeking to promote a transition to the circular economy. 'The standard will add value by offering greater clarity and structure and a framework against which to work,' he says.

Martin Charter at the University for the Creative Arts and a member of the panel that drafted the standard, says its development benefited greatly from the pilots. 'Because standards take time to finalise, they tend to lag practice,' he says. 'But BSI received funding to pilot 8001, enabling the drafting panel to identify real issues in organisations. It is not out of kilter with what is going on.'