European Agency for Safety and Health at Work

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# Foresight Study on the Circular Economy and its effects on Occupational Safety and Health

## Phase 1: Macro-scenarios

## Executive Summary

European Agency for Safety and Health at Work

Safety and health at work is everyone's concern. It's good for you. It's good for business.

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For the purposes of this project, the circular economy 'is based on pillars that question operating modes that are well-rooted in today's economy: sustainable supply, eco-design, industrial and territorial ecology, functional economy, sustainable consumption, extended use duration and recycling' (INRS, 'A circular economy in 2040').

For this project we have also followed the definition of a circular economy put forward by the Ellen MacArthur Foundation, a foundation devoted solely to developing and promoting the idea of a circular economy: 'a circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems'[1] (Ellen MacArthur Foundation, 'What is the circular economy?')



This summary was commissioned by the European Agency for Safety and Health at Work (EU-OSHA). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the views of EU-OSHA.

More information on the European Union is available on the Internet (http://europa.eu).

Cataloguing data can be found on the cover of this publication.

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[1] While definitions of the circular economy vary across publications, for this project we have used these two definitions as a starting point to map the territory of the term and concept.

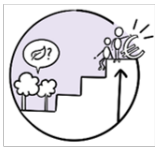
# Executive summary

The European Agency for Safety and Health at Work (EU-OSHA) has for several years been applying foresight approaches as part of its mission to contribute to safer and healthier working conditions in the EU. Its foresight approach looks at changes that may take place in the future and considers what their consequences could be for occupational safety and health (OSH), with the aim of supporting policy-making and raising awareness to reduce work-related accidents and ill health. Within its new foresight cycle, work is focused on the circular economy (CE) and its effects on OSH, primarily within the European context.

This report is part of phase 1 of this project, the development of macro-scenarios, which was carried out against the background of an EU policy shift towards more environmentally sustainable practices, with several policy initiatives driving efforts in the CE arena[2]. These initiatives, and indeed the CE as a whole, are widely considered to be critical and influential developments that will be beneficial to the action against climate change and will ultimately impact on jobs and on OSH. Thus, this study aims to explore different ways in which future jobs may be impacted by efforts towards implementing a CE, and what consequences this may have for OSH in the future. This was achieved through the development of four macro-scenarios focused on the CE and its effects on OSH.

The four scenarios were generated by Future Impacts, together with the EU-OSHA project team, via a key-factor-based scenario methodology drawing from an extensive literature analysis (which included significant parts of earlier foresight work done by EU-OSHA) and expert interviews. For each scenario a narrative was developed that describes the world in 2040, including how the development pathways came to be, and levers and turning points. Special emphasis was placed on the effects on working conditions, as well as a first review of potential implications for OSH. The scenarios were supplemented with visuals and an illustrative vignette depicting daily life in 2040 to aid communication. They illustrate four distinct alternative future pathways in the CE and their implications for OSH, considering risks as well as opportunities.





| The roaring 40's — fully circular and inclusive | Carbon neutrality — of a hazardous kind | Staying afloat — amid economic and environmental crises | Regional circularities — with European divides |
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| In 2040, the products that sell best are those that are cradle-to-cradle and 'net-positive' in terms of social and environmental sustainability. | In 2040, Europe has achieved carbon neutrality. But with environmental outcomes taking top priority, job quality and working conditions have suffered – at least in some areas. | In 2040, work is what people want – any job will do. Keeping your head above the water is all that matters, the environment, social rights or job quality come a distant second. | By 2040, work has become a two-tier system: contracted employees are well looked after, those in non-standard employment are not. Neither is the environment, with circularity being mostly regional. |

[2] The key related policy initiative is the European Green Deal initiative, which has the overarching aim of making Europe climate neutral by 2050 (see https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en). Alongside the Green Deal initiative sits the Commission's 2015 CE package, comprising - an EU action plan for the CE ('Closing the Loop') with 54 concrete actions to achieve a CE, many with significant policy and regulatory implications for the EU's waste and recycling sector (see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614).

# The four scenarios on the circular economy in 2040

- **Scenario 1: The Roaring 40s — fully circular and inclusive**

Working conditions across all sectors are significantly better than they were two decades ago, pollution has been reduced to a minimum, businesses find that keeping a small footprint is good for the balance sheet, and public trust in policy-makers and national and European leaders is greater than ever. Implementing serious sustainability and realising the principles of 'reduce, reuse, recycle' across all sectors takes a lot of collaborative fine-tuning, as does keeping workers safe and secure in a multifaceted labour environment with myriad platforms and forms of employment. But one key difference compared with the situation in 2020 is a palpable sense of optimism: with so many challenges successfully met, the future cannot be anything other than bright.

**Key message:** 'The Roaring 40s' is a best-of-all-worlds scenario — not only do policy-makers and stakeholders (having realised the gravity of the situation) make bold decisions to achieve real, far-reaching sustainability, but worker safety and health is also a key concern and is fully realised. This scenario demonstrates that one does not have to come at the expense of the other, and that both can be achieved in a competitive economy. But, even in this positive situation, OSH will always come up against new challenges, and constant improvement remains necessary.

- **Scenario 2: Carbon neutrality — of a hazardous kind**

In the early 2020s, a warming climate, extreme weather events and habitat loss took centre stage in the public mind. Eco-consciousness reigned, leading to a surge in environmental regulation and environmentally friendly industry practices. However, with the bulk of funding spent on renewable energy infrastructure and CE initiatives, social concerns fell by the wayside. Social infrastructures and services, social rights, inclusion and job quality have declined for many.

**Key message:** 'Carbon neutrality' is a 'mixed bag' scenario — it demonstrates that, given the right incentives, Europe would be able to kick its addiction to fossil fuels in an incredibly short time span and become a world leader in green technologies, but also that this speed would come at a cost for workers. Unless measures are taken to secure a 'just transition', during which workers receive all the (organisational) support and develop all the skills necessary to work new jobs safely, accidents and work-related diseases will increase, even with the use of new, safer technologies. In addition, regional challenges will vary much more widely in a localised economy: areas that sourced much of their employment from fossil fuel energy generation would find themselves faced with rapidly growing unemployment and an exodus of workers with outdated skills, while the OSH-relevant knowledge necessary for the safe dismantling of old energy infrastructures may be lacking. If OSH must take a back seat to a speedy transition to carbon neutrality, the human cost could be considerable, and stakeholders are challenged to not let this happen.

- **Scenario 3: Staying afloat — amid economic and environmental crises**

Recessions, cuts in public spending, environmental crises and rising unemployment: headlines in 2040 make for grim reading. In the business community, it is everyone for themselves; competitiveness and profits are all that count. New technologies, rationalisation and digitalisation have created an ever-growing pool of workers who lack the qualifications, as well as the supporting working conditions, that are necessary to make it in this new, cut-throat economy. Platform work brings rewards to only a few, and, even in the sectors where it is booming, the 'Russian doll effect' of sub-contracts within sub-contracts means that workers never see their fair share. The CE remains a distant dream, and the transition everyone went through was neither green nor just.

**Key message**: in 'Staying afloat', the millennium's second decade never delivered on its promises. Policy-makers and stakeholders never dared to make the 'big jump' and failed to grasp the opportunity offered by public support for a green transition and the shake-up provided by the COVID-19 pandemic. Now, economic success often comes at the expense of both worker safety and health and the environment, putting OSH institutions and other actors in the OSH field (policy-makers, etc.) under

enormous pressure to improve the situation workers find themselves in, and are less and less able to address core issues comprehensively.

### ▪ Scenario 4: Regional circularities — with European divides

For both policy-makers and the public, a safe, growing economy was the overriding concern of recent decades. The environment fell by the wayside, but not everywhere. Richer European regions could afford to outsource disposal of waste and pollution to other world regions or poorer EU Member States, and now boast some sort of localised CEs, but the loops are never fully closed — problems are simply offshored. Social inclusion was also neglected. With good jobs available to only a minority of well-trained, highly skilled individuals, a growing number of workers are driven towards the informal economy and to unregulated, underpaid and increasingly precarious employment.

**Key message:** 'Regional circularities' emphasises the dangers inherent in regional and social disparities. Not only is responsibility for disposal of waste and polluting practices shifted from the rich to the poorer regions, but the working population is also divided between those who enjoy safe working conditions and good social protection and others who must make do with very little in both respects. In this environment, realising high OSH standards for everyone will be challenging and require broad political coalitions, forcing OSH institutions to reach out and encourage other stakeholders to increase pressure on decision-makers.

### ▪ Key messages across the four scenarios and the underlying research

The four scenarios showed that the potential pathways for CE in Europe and their effects on working conditions could vary widely, with a similarly wide-ranging set of first implications for OSH and possible future policy areas. These may include increased risks from repeated recycling processes and opportunities around a socio-ecological transformation approach that includes the integration of OSH considerations from the very first stages of product development and design3. From the scenarios and the underlying research, a number of cross-cutting and overarching key messages were identified:

As yet, there is no widely shared or common definition and understanding of what a CE is. This contributes to a certain 'fuzziness' around existing assumptions and expectations of potential future developments regarding CE and opens the door to the term and its concepts being used for the purpose of greenwashing.

Any reflection on CE perspectives in Europe will need to take into account global repercussions as well as value and production chain effects. A paradigm shift towards CE principles could be implemented sensibly and ethically, but only if the approach integrates global production chains and elements over the whole life cycle of any product and material.

The European waste sector will need to play a pivotal role in the development of any future CE. The integration of new technologies while meeting new challenges will be a complex undertaking, but the reskilling offensive necessary offers opportunities to considerably improve OSH practices and outcomes for workers — if OSH considerations are made an inherent part of this process from the beginning.

Digitalisation is a key enabler and accelerator for the CE. A high standard of OSH in a CE will be achieved only if digitalisation processes, such as building a universal information ecosystem (a safe data space that minimises manipulation risks) or creating a monitoring system to prevent illegal imports of products that may be hazardous during recycling, are well managed. Accordingly, OSH measures will need to keep pace with these rapid digital changes.

A fundamental shift towards a CE seems possible only if driven by robust regulatory efforts and policy mechanisms. Circularity can be achieved only if life-cycle responsibility rests with the manufacturer, and measures are taken to internalise external costs of any material and product life cycle.

[3] The key messages from the project are covered in more detail in section 7: Conclusions and outlook.

Any fundamental shift towards a CE would probably have to involve the far-reaching reorganisation of the value chain and the emergence of new actors. This would probably lead to second- and third-order effects on infrastructure to accommodate new feedback loops and more collaborative material streams.

Large-scale implementation of a CE would — based on the principle of a 'just transition' — come with a significant opportunity to advance OSH conditions, but could also lead to the emergence of new risks and undesired side effects (especially around repeated recycling). From another perspective, emerging risks also have the potential to be used as growth opportunities — but only if there are clear cost incentives and suitable markets.

The range of progress in the CE and the integration of OSH measures could differ widely between regions, EU Member States and sectors, and the risks as well as opportunities for OSH could similarly vary widely. Making sure that there is sufficient support for all regions, sectors and countries, especially those with comparatively fewer resources, will be a major factor in ensuring that OSH is advanced alongside any kind of progress towards a CE.

A window of opportunity currently presents itself for advancing the CE with a view to OSH improvements being realised in synergy. There are several reasons for this, among them a recently increased focus on the interconnectedness of the social and environmental pillars of sustainability, and a growing awareness that an integrated view of efforts in those areas will clearly benefit the third pillar of sustainability, the economic sphere (a 'just transition'). Ensuring that OSH perspectives and solutions are included or even pushed within the context of these transformation efforts could be a lever to bring about fundamental progress along the lines of both the CE and OSH goals.

Lastly, it should be noted that work on the scenarios will continue in phase 2 of this project, which centres on the dissemination and tailoring of the scenarios via stakeholder dialogue and workshops. Thus, it needs to be stressed that these scenarios are not to be interpreted as any type of prediction on what the future may or may not hold. They are instead designed to encourage dialogue and reflection with stakeholders around future possibilities, and identify drivers and barriers as well as cross-cutting implications for OSH, with the aim of informing today's decision-making, enabling a more future-oriented policy and making tomorrow's work healthier and safer.

**The European Agency for Safety and Health at Work (EU-OSHA)** contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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