



Summary Report

The Future of Work: Baseline Employment Analysis and Skills Pathways for the Circular Economy in Scotland

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Executive summary

As Scotland moves towards the new green recovery, the future world of work looks very different. Like the climate emergency, COVID-19 has brought devastation on a local, national and global scale. But the pandemic has also shown that it is feasible to adopt more sustainable ways of working which will ensure that the economy and the environment recover in harmony to overcome both crises at once. We need to keep on doing things differently.

Many service industry organisations, including Zero Waste Scotland, are making radical operational changes to survive and thrive, such as switching to permanent homeworking to make significant savings in carbon emissions and cash.

The unprecedented challenges and the need for less wasteful business practices also bring diverse, invaluable and interesting opportunities for job creation and a wide range of new business models and ventures.

To turn those chances into real jobs and skill-sets we need to stop wasting resources through our traditional economic model of 'make, take and throw' and switch to a national circular economy – keeping goods and materials in a 'loop' of use maximising value and minimising waste and the damaging emissions which that creates.

We know that we have made progress since the Scottish Government published its landmark 2016 circular economy strategy, entitled Making Things Last to help spell out the environmental, economic and social benefits of doing just that.

However, around four fifths of Scotland's carbon footprint is still caused by the production, consumption and, too often, waste of goods, services and materials. This remains the single greatest cause of the climate crisis. This needs to stop if we are to meet the Scottish Government's aim of ending our contribution to climate change by 2045.

Until now we have not had clear data on the size of the workforce in the existing circular economy in Scotland – or the priority sectors likely to bring the biggest circular gains in the months and years ahead as we work together to reach net-zero.

This report provides, for the first time, a baseline analysis which is vital for increasing our understanding to drive progress forward. And while it was planned in a pre-COVID world it could not be more timely.

We found that nearly one in ten Scottish jobs nationally and regionally is already related to the circular economy. Many of these posts are in areas like repairing and recycling goods, while substantial numbers are in design and technology. However,

circular jobs and activities also varied by region, suggesting that emerging green recovery policies must take account of local needs. One in ten is significant, but we need to reach ten out of ten.

The report also highlights key opportunities to make that leap by pioneering exciting new roles and skills across a range of levels in three key priority areas of work. These were the bioeconomy, capital projects – such as decommissioning Scotland's oil rigs and wind farms – and construction. Key prospects include helping the traditional workforce to diversify, particularly in rural economies where bioenergy promises significant gains. Strong potential was also identified in scaling up emerging business models in remanufacturing and offsite construction that can reduce waste and switching from selling products to leasing them.

Potential 21st century roles include material scouts and urban miners who will be needed to find local sustainable sources of materials so Scotland can literally build back better.

The world of work is changing. It has to keep on changing to bring the environmental, economic and social transformation we need from the green recovery. We have to carry on doing more differently.

This report provides information and ideas to help a range of Scottish agencies including governments, enterprise organisations, businesses and universities to collaborate to create a new circular, sustainable workforce that Scotland needs to truly build back better through the new green recovery.



Key findings

Existing circular economy jobs and skills

We found that nearly one in ten jobs (8.1%) in Scotland is related to the circular economy. This is a significant number showing both the progress made nationally – and also the huge step-change we must still make to create the national circular economy we urgently need now to ensure we end our nation’s contribution to the climate crisis by 2045.

The national baseline analysis found that the share of circular jobs per region ranges from 7-9.8%. While no significant regional differences within Scotland have been found, the composition of circular jobs - meaning the circular activities these jobs are related to - varies.

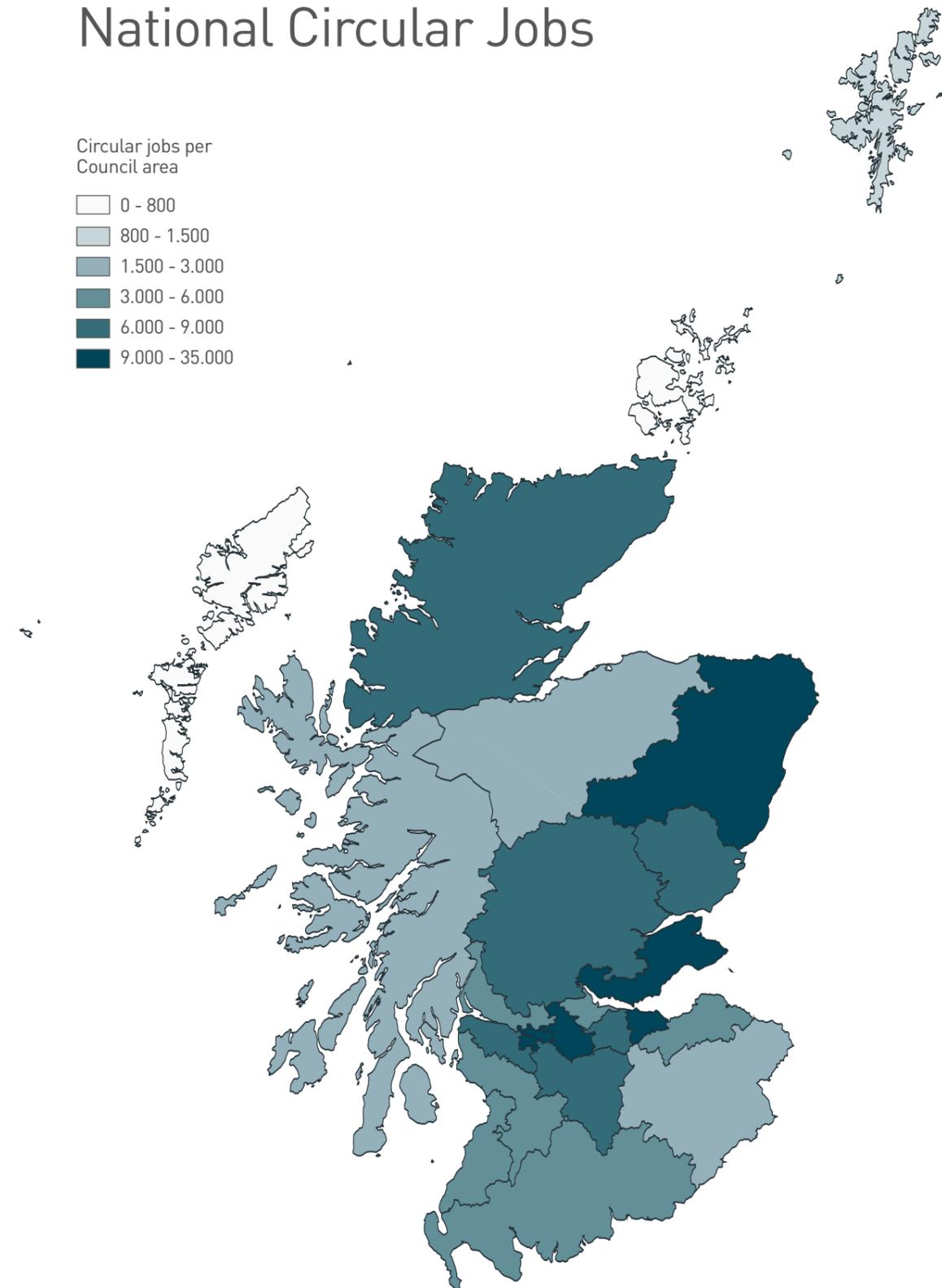
- In the **Highlands & Islands**, 16,689 jobs are related to the circular economy (7% of all jobs in the region). Most circular jobs (47%) in the region are generated indirectly by demand for core products and services by sectors including manufacturing, wholesale and retail.
- In **North Eastern Scotland**, 28,110 jobs are related to the circular economy (9.8% of all jobs in the region). It has the highest percentage of circular jobs in design compared to all other regions.
- In **Eastern Scotland**, 80,447 jobs are related to the circular economy (8.3% of all jobs in the region). Unlike other regions, most circular jobs are generated by enabling circular sectors, namely in relation to design and digital technology.
- In **South Western Scotland**, 82,181 jobs are related to the circular economy (7.7% of all jobs in the region). It has the highest number of core circular jobs (15,464) compared to other regions in Scotland.

Future circular economy jobs and skills

Potential jobs include pioneering entirely new, 21st century roles such as material scouts and urban miners who are needed to find local sustainable sources of construction materials, while the traditional workforce can adapt to changing needs by diversifying rural economies to include agritourism and bioenergy production.

Making these jobs and businesses part of the ‘new normal’ in Scotland will help to create a country which is more resilient to pandemics, recessions and supply chain volatility. These new job prospects can also help reduce existing social inequalities exacerbated by COVID-19 by redistributing employment opportunities and providing more widespread access to essential goods and services that meet Scotland’s ambitions on creating a just transition to a zero-carbon society.

National Circular Jobs



The way forward

Detailed insights into skills pathways needed to develop a national circular economy were generated for each priority area. Common skills and training requirements were identified across the three key value chains in construction, capital projects and the bioeconomy, including:

- Strengthening transferable and digital skills: Many circular economy strategies require a digitally-enabled workforce. As industries shift and new markets open up through advances in material science and technologies, it will be increasingly important that workers have transferable skills, like adaptability, to enable them to move between industries as industries evolve with the transition.
- Developing holistic thinking across the workforce: Integrate lifecycle and systems thinking across interdisciplinary, vocational, professional and higher education courses in order to promote understanding of the dynamics, roles, responsibilities and value associated with the circular economy.
- Promoting the circular economy as a career destination: Integrate understanding and skills for the circular economy into all curricula and sectors, so the circular economy becomes synonymous with our economy and there are clearer pathways into roles and sectors that contribute to the circular economy.
- Integrating circularity into the existing skills landscape: Align circular economy industry hubs with enterprise and skills agencies already developing support and manage the urban-rural divide to ensure inclusive opportunities for skills development across rural and urban communities.
- Introducing innovative forms of learning and knowledge exchange: Encourage closer collaboration between industry and education through innovation centres and demonstrator sites that can be visited by students, educators, employers and workers.
- Harnessing skills for the energy transition: Develop and implement skills pipelines to ensure the employment, environmental and economic opportunities can be fully exploited - particularly the largely untapped potential associated with reuse and remanufacture in the energy sector.

The skills pathways in this report demonstrate, there is a strong need for digital skills development, particularly in the construction sector. This can maximise the potential of technologies to improve communication, collaboration and material efficiency, all central to the circular economy. Maximising the promising future of the bioeconomy will require work to raise awareness of the significant business and job opportunities it brings to turn waste streams into value and make this emerging sector a mainstream career choice for graduates. Meanwhile there is a valuable window of opportunity to grasp the varied redeployment options which decommissioning of oil rigs and wind turbines in Scotland's energy sector presents.



Conclusions

The year 2020 has brought multiple challenges for Scotland's economy, environment and society, and the impending conclusion of the Brexit transition period at the end of the year is yet to come.

However, the climate emergency declared by the Scottish Government in 2019 remains the greatest of these crises. Whether Scotland recovers and prospers depends on whether the nation can deliver the economic change now needed while simultaneously prioritising the needs of our people and the planet.

Meeting the environmental, financial and social aims of Scotland's new wellbeing economy - now central to the Scottish Government's emerging Green Recovery - means embracing the circular economy nationwide. That, in turn, means that overcoming these unprecedented problems also presents significant opportunities to reap the financial and societal rewards of investing in the infrastructure and increased capacity needed across all sectors at all levels.

Ultimately it means creating thousands of valuable new sustainable jobs and developing a workforce which is equipped to do those jobs by embedding the circular economy into the national curriculum and workforce development to upskill and reskill staff.

Scotland is already a world leader in low carbon energy thanks to our ambitious renewable energy policies. This report provides proof that Scotland's circular economy is currently on a par with others in Europe. As more countries across the globe increasingly switch to circularity, we must do much more to stay competitive.

This report provides information and ideas to help a range of agencies including governments, enterprise organisations, businesses and universities to collaborate to create the national circular, sustainable workforce that Scotland needs to truly Build Back Better and overcome the climate crisis.

As industries shift and new markets open up through technological advances and improved materials, workers need to develop transferable meta-skills, such as adaptability and holistic thinking, to be able to move across industries. Meanwhile, existing key legacy skills must also be harnessed and not lost, particularly in the energy sector, to ensure a just transition to a circular economy.

Contacts

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Further information on all Zero Waste Scotland's programmes including circular economy support and advice for new and existing businesses can be found at www.zerowastescotland.org.uk.

Further information on Circle Economy's Circular Jobs Initiative can be found at www.circle-economy.com/circular-jobs-initiative.





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