Congress Document No. 27

Resolution on good jobs, workers' rights and security in a changing labour market

The 47th Congress of the Icelandic Confederation of Labour (ASÍ) demands that the changes now taking place across the labour market and society be harnessed for the benefit of the public. The Congress resolves that technological development and the green transition must not be used as a means of further concentrating wealth and increasing inequality at the expense of workers' pay and rights.

ASÍ rejects a vision of the future in which technologies such as artificial intelligence and automation generate even greater wealth for capital interests and large corporations while working people are left with poorer terms and conditions and heavier workloads. On the contrary, the benefits of new technology and increased productivity must translate into better living standards, a shorter working week, stronger public services and a better quality of life for the public.

The Congress demands that new jobs created because of technological change, the energy transition and climate action are secure and based on collective agreements and full workers' rights. Automation, digital development or other transformation of the economy must not be used to facilitate social dumping, bogus self-employment, increased outsourcing, the fragmentation of employment relationships or other attacks on the organised labour market.

ASÍ also rejects the growing use of artificial intelligence and digital management to increase surveillance of workers or to make decisions that people can neither understand nor obtain an explanation for.

Working people must have genuine influence over how new technology, the energy transition and changes in the economy shape jobs, the organisation of work and the labour market of the future.

A just transition will not happen by itself. It requires a clear political direction, a strong labour movement and genuine consultation between government, employers and workers. The ASÍ Congress demands that government develop a clear policy on the future of work in consultation with the labour movement.

It will never be acceptable for the public to bear the burdens while the gains from change accrue to a few.

We are heading in the wrong direction, and it is essential to put on the brakes. Clear rules must be established on data protection, the social and legal implications of new technology, and how the productivity gains resulting from the introduction of artificial intelligence should be shared fairly so that everyone benefits.

ASÍ priorities for good jobs, workers' rights and security in a changing labour market

Throughout all major social change, it must be ensured that society shares in the gains arising from change and that those changes strengthen public welfare and living standards

Climate action, the energy transition and technological change must be founded on social justice, with the costs and benefits of change shared fairly.

All jobs must be good and decent

New jobs created through the transformations now under way must be decent jobs with good pay, strong occupational health and safety protection and full rights under law and collective agreements. The transformations must not lead to insecure employment, bogus self-employment or other changes that weaken workers' position and undermine the organised labour market. Workers' independence from employers must be safeguarded, including full control over their own wages, and employment relationships must not give employers greater power over people's lives inside or outside the workplace.

Social dumping will be tackled with full force

Social dumping is a direct attack on workers' livelihoods, rights and employment security. It undermines collective agreements, weakens workers' position and erodes the protection that an organised labour market is intended to provide. ASÍ will fight social dumping, e.g. bogus self-emoyment with full force and demands that those who profit from violating workers' rights are held accountable.

Protect direct employment relationships

Innovation, technological change or demands for cost savings must not lead to increased outsourcing. Central government and local authorities should reduce the outsourcing of jobs and protect direct employment relationships. Outsourcing must not result in reduced workers' rights or undermine the value of collective agreements. Public funds should support good jobs and respect for workers' rights.

The benefits of technological progress must accrue to workers

Increased productivity and value creation resulting from artificial intelligence, automation and other technological development must benefit workers through better terms and conditions, shorter working hours, improved working conditions and a better quality of life.

Democracy in the labour market during periods of transition

Workers and trade unions must have genuine involvement in the introduction of new technology and the organisation of work. Changes affecting jobs, terms and conditions of employment and the working environment must not be made without consultation with workers and their organisations.

Artificial intelligence under clear regulation and social responsibility

The use of artificial intelligence and algorithmic management in the labour market must be based on transparency, accountability and respect for workers' rights. ASÍ rejects the use of technology for excessive surveillance, increased workloads, infringements of privacy or automated decision-making affecting workers' terms and conditions, rights or position without clear employer accountability. Government must establish appropriate rules and ensure that

public supervisory authorities are equipped to respond to changing conditions in the fields of data protection and occupational health and safety. Work should begin immediately to ensure that the responsible use of artificial intelligence and its impact on jobs and staffing are included in the demands for the next round of collective bargaining.

A diverse economy and strong communities throughout the country

The green and digital transition should support a diverse economy and strong communities throughout the country. Government policy must take account of the position of different industries, regions and groups of workers and ensure that new opportunities are not confined to a small number of sectors or areas.

Tripartite dialogue on a just transition

Active and meaningful tripartite cooperation must be developed so that a just transition is secured through social safety nets and robust policy on employment, climate action and the use of artificial intelligence, taking account of the overall interests of society, the economy and working people.

Report

Introduction

Icelandic society is facing changes that will shape the economy, the labour market and living standards in the years ahead. On the one hand, climate change, the energy transition and increasing sustainability requirements are driving fundamental changes in production, transport and the use of resources. On the other, rapid technological progress, automation and the development of artificial intelligence are changing the organisation of work, the content of jobs and people's terms and conditions of employment. These developments, often referred to as *the twin transition*, offer major opportunities but also involve risks and uncertainty.

The findings of a study by Varða – Labour Market Research Institute on workers' attitudes towards the effects of climate and technological change indicate that these effects are already being felt in the Icelandic labour market and are affecting different groups and sectors in different ways. Nearly one quarter of respondents believe that their job has already changed or will change in the coming years because of new technology or climate-related developments. One third of those in jobs that have changed or are likely to change are concerned about their employment security. Concern is greater among immigrants and lower-income groups than among people born in Iceland and higher-income groups.

Transformations can have positive effects, including higher productivity, new industries, more efficient use of resources and a stronger economic foundation for society. However, if they are driven solely by short-term interests or market forces, they can increase inequality, create employment and income insecurity and undermine workers' rights. Experience in many countries suggests that rapid technological change has often led to weaker employment relationships, greater use of contracting arrangements and a transfer of risk from businesses to workers. In many cases, these developments have set employment security and terms and conditions back by decades and increased inequality and disparities in circumstances. Over time, such developments can undermine social consensus and social justice.

In such circumstances, an organised labour movement, broad collective bargaining coverage and workers' solidarity are crucial. Successful and just transitions depend on broad collective agreements and tripartite cooperation in the labour market, with shared responsibility for the design, implementation and effects of change. Experience shows that societies based on active social dialogue with the social partners, strong trade unions and broad worker participation are better placed to manage economic and social transformation. A just transition cannot be secured unless workers and their organisations have genuine involvement in decisions affecting jobs, terms and conditions of employment and the future of the labour market.

The labour movement has historically played a key role in ensuring that social progress leads to better terms and conditions, greater security, and stronger rights for the public. In the same way, the movement now has an important role in protecting workers' interests during a period of climate and technological change. ASÍ has consistently stressed that a just transition must guide all policy-making by government and business. The aim of the changes must be to create good, decent and green jobs, strengthen social security, reduce inequality, and reinforce society as a whole.

A further prerequisite for a successful transition is that government takes a forward-looking approach, develops a comprehensive employment and education policy, and builds social safety nets and income protection that take account of the effects of change on people,

communities and industries. This can help ensure that the benefits of change accrue to society as a whole through better living standards, stronger welfare provision and greater opportunities for people throughout the country.

The twin transition

Society is facing two interconnected transformations: technological development, including increased automation and the development of artificial intelligence, and climate change and the necessary measures to reduce greenhouse gas emissions. Together these are often referred to as the twin transition.

Climate change and the energy transition require changes in production, transport, energy use and the use of resources. Climate change is not merely an environmental challenge but one of the major economic, employment and living-standards issues of our time. At the same time, technological progress, automation and artificial intelligence are changing the content of jobs, the organisation of work, skills requirements and the distribution of value in the economy. The composition of employment is changing as some jobs disappear and others are created, while many existing jobs will develop and change substantially in the coming years.

In the context of the twin transition, it is important to recognise that the digital transformation is both a prerequisite for and a driver of the green transition. Technological progress has, among other things, made it possible to optimise energy use, manage electricity systems more flexibly, analyse the carbon footprint of production and consumption, and develop new business models based on the circular economy. Artificial intelligence and data processing can therefore accelerate the energy transition, improve transport planning and promote more efficient use of resources. At the same time, these systems require enormous amounts of energy and the development of data centres and digital infrastructure, which have a substantial environmental footprint. Technological progress is therefore not automatically environmentally beneficial; its impact depends on how and for what purpose it is used.[1]

Together, these transformations have far-reaching effects on the economy, the labour market and society and, if managed well, can reinforce one another in addressing the climate challenge and improving living standards.

Just transition

A just transition means that social and economic transformation takes place in a way that distributes its costs and benefits fairly. A just transition is a prerequisite for ensuring that social change leads to improved livelihoods and strong labour-market rights. It recognises that climate action and technological change can have negative effects on jobs, communities and people's livelihoods, and that society bears a shared responsibility for addressing those effects.

The concept of a "just transition" has its roots in the campaign by the US labour movement in the 1980s for support for workers facing job losses as a result of new and stricter environmental legislation. The labour movement emphasised that society bore a shared responsibility for the consequences of change and that measures should be taken to support those adversely

[1] https://www.etui.org/sites/default/files/2023-01/Interlinkages%20between%20the%20just%20ecological%20transition%20and%20the%20digital%20transformation-2023.pdf

affected.

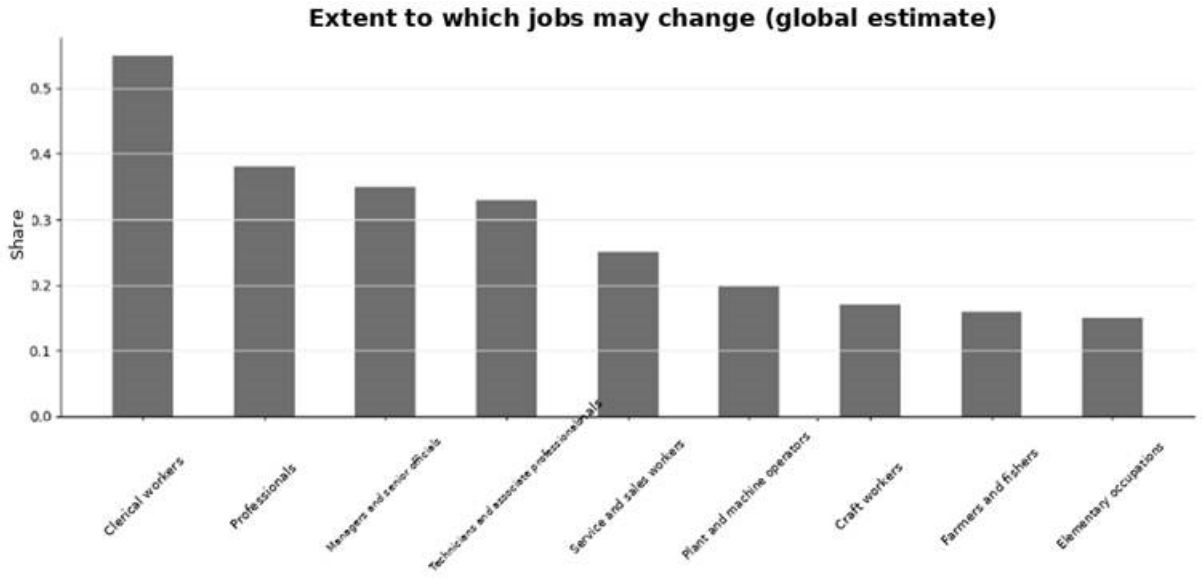
A just transition requires workers to have genuine involvement in decisions concerning the future of jobs and the labour market. It is important to secure good jobs which, through collective agreements, provide strong rights, employment and income security, and access to education that enables people to take on new and changing jobs. To ensure social consensus and successful outcomes, these priorities must be shaped through tripartite dialogue between the social partners and government and reflected in their policies and actions.

Impact of transformation on the labour market and jobs

The debate on the impact of technological change on the labour market has shifted rapidly in only a few years. The government's report on the Fourth Industrial Revolution, published in 2019 and based in part on data from 2017, is a good example of the prevailing view at the time. It described the Fourth Industrial Revolution as a broad technological and social transformation, but its assessment of labour-market effects was based primarily on the likelihood of jobs being automated. The analysis focused particularly on occupations involving a high proportion of repetitive, standardised and predictable tasks. The greatest effects were expected among craft workers, service and sales workers, plant and machine operators, farmers, fishers and people in elementary occupations. Professional, managerial, technical and other skilled occupations were considered less exposed, as more varied jobs, complex processes and tasks requiring judgement, communication and specialist knowledge were generally thought less susceptible to direct automation[2].

More recent analyses have revised this assessment to some extent. The ILO maintains an interactive map showing the broad impact of artificial intelligence across occupational groups, based on an overall assessment of AI exposure in jobs. It suggests that in high-income countries around one in three jobs may be affected to some degree by artificial intelligence, compared with around one in four jobs worldwide. The greatest effects are now expected in clerical and accounting occupations, as well as in a range of professional occupations. Jobs that rely more heavily on human interaction and skills, care and creativity are generally considered less exposed to change.

[2] https://www.stjornarradid.is/library/04-Raduneytin/ForsAetisraduneytid/Framtidarnefnd/Fjorda-idnbyltingin-skyrsla.pdf



This represents an almost complete reversal of earlier forecasts about the impact of technological change. Previously, attention focused mainly on the likelihood that automation would have the greatest effect on jobs in which repetitive and standardised tasks make up a large share of the work. Increasingly, attention is now turning to clerical workers, professionals, managers and skilled staff. This is because artificial intelligence can not only replace repetitive tasks but also support or take over tasks involving information and data processing, judgement, analysis and communication.

The impact of technological change on the labour market must be considered from more perspectives than before. On the one hand, it is necessary to examine how artificial intelligence and automation may change tasks, displace jobs or reduce demand for particular skills. On the other hand, it is necessary to examine how technology is used in workplaces to direct work, measure performance, monitor workers and support decision-making. In the case of automation and artificial intelligence, the challenge primarily concerns changes in jobs, employment and skills needs. In the latter case, it concerns job quality, autonomy, privacy, workload, the balance of power in the workplace and the distribution of benefits.

In both cases, it is clear that the effects depend on how the technology is introduced, who is involved in decisions, what rules apply and whether the benefits accrue to workers. Technological change and the use of artificial intelligence in the labour market must therefore be approached as matters of rights and living standards, not merely as questions of productivity or innovation.

The following sections therefore consider, on the one hand, the effects of artificial intelligence and automation on tasks, jobs and income security and, on the other, the effects of AI-based management and algorithmic management on job content, working conditions and workers' position in the workplace.

Good, decent and green jobs

Discussion of new and changing jobs and the opportunities that transformation creates for higher productivity must focus not only on the number of jobs but also on their quality. What matters is whether jobs provide decent wages, rights, good working conditions, social

protection and opportunities for professional development. Good jobs, decent jobs and green jobs must therefore form part of the same overall approach.

Definitions of good and decent jobs

The concept of “decent work” is based on the International Labour Organization’s approach to social security and rights. According to the International Labour Organization (ILO), decent work rests on four main pillars. First, people should have access to employment and jobs that provide a decent livelihood and create economic and social security. Second, emphasis is placed on rights and safety at work, including protection against discrimination, unfair terms and conditions and unsafe working conditions. Third, the concept includes social protection, such as access to social safety nets, health and safety protection, and rights relating to sickness, unemployment and the end of working life. Finally, emphasis is placed on the importance of tripartite consultation, participation and worker influence, including through trade unions and collective agreements, so that workers can have a genuine say in their own working conditions and in the development of the labour market.

The European Trade Union Institute (ETUI) emphasises that good jobs are characterised, among other things, by good terms and conditions and income security, employment stability, defined working hours, work-life balance, good physical and mental working conditions, autonomy at work, access to training and professional development, and opportunities for collective representation. Good jobs therefore provide not only employment but also decent living standards, security, opportunities for development and genuine influence over one’s own working conditions.

Definition of green jobs

Green jobs are generally defined as jobs that contribute to lower pollution, more efficient use of energy and raw materials, reduced greenhouse gas emissions, restoration of environmental quality and sustainable use of resources. Such jobs can be created in new and growing sectors, but also through changes within traditional industries. The green transition therefore involves not only the disappearance of some jobs and the creation of others, but also changes to many existing jobs, the growing importance of new skills and evolving requirements for production, operations and services.

In discussions of green jobs, a distinction has also been made between green, brown and white jobs. Green jobs contribute to lower emissions or more sustainable use of resources; brown jobs are associated with activities that have negative environmental effects or high emissions; and white jobs have neutral or mixed effects in this context. This classification is neither universal nor final, but it can help identify which jobs, industries and regions are likely to be most affected by the green transition.

Most evidence suggests that the number of green jobs will increase alongside the green transition, while jobs in polluting or unsustainable activities will change, decline or disappear. Most jobs, however, do not fall clearly into either category and will change as requirements relating to emissions, energy efficiency, raw-material use and sustainability evolve. It is therefore important to consider not only the number of new green jobs but also how existing jobs will change and what support workers will need to respond to those changes.

The fact that a job is classified as green does not in itself ensure that it is good or decent. Green economic development must meet the same requirements as other economic development in relation to decent wages, secure employment relationships, occupational health and safety, predictable working hours, social protection, equality, professional

development and worker participation. A just transition therefore means that green jobs must be assessed not only by their effect on emissions or the environment, but also by job quality, workers' rights and living standards.

Workers' independence from employers

Housing, transport and other services connected with people's daily lives have in some cases become closely tied to the employment relationship. Such developments can make workers more dependent on their employer and weaken their bargaining position.

Particular concern arises when employers consider themselves entitled to deduct various costs directly from workers' wages, for example for rent, transport, equipment or other services. In some cases there appear to be no agreements or informed consent from workers for such deductions; in others, workers have signed unfair agreements because they had no realistic alternative.

Wages belong to workers, and employers should not have unilateral authority to dispose of them or deduct costs from them. When the same party is simultaneously employer, landlord, service provider and debt collector, there is a risk of an unacceptable imbalance of power. If a person loses their job, they may at the same time lose their home, access to transport or other services linked to the employment relationship. This can reduce people's ability to assert their rights, change jobs or challenge their terms and conditions of employment.

Outsourcing and changes in the organisation of work

In the context of the transformations now under way, it is therefore important to consider not only which new jobs are created but also how the organisation of work develops alongside those changes.

Outsourcing involves companies or institutions assigning to external providers tasks or services that were previously carried out within their own operations. It may involve specific specialist services, but also tasks that form a regular part of day-to-day operations.

Alongside technological change and other transformations in the economy, the outsourcing of tasks and services has increased in many parts of the labour market, both in Iceland and internationally. This trend is driven, among other things, by greater business specialisation, globalisation, technological progress and increased demands for efficiency and operational flexibility. New technology has also made it easier to divide activities into discrete tasks and assign external providers to carry out work that was previously performed within companies or institutions.

Experience shows that the gains from outsourcing are not always based on higher productivity or innovation, but often on lower labour costs and the transfer of risk from employers to workers. This has been evident, among other areas, in labour-intensive service sectors such as cleaning and delivery services, where competition has in many cases been based to a substantial degree on labour costs. When tasks are transferred to contractors, subcontractors or other service providers, more complex contracting chains can develop and responsibility for workers' terms and conditions, working conditions and rights can become less clear.

This applies particularly when public tasks and services are put out to tender. Although public procurement legislation provides for consideration of quality, social responsibility, sustainability and factors other than price, in practice the lowest bid often appears to be decisive in the selection of contractors.

Such developments can increase the risk of social dumping, put downward pressure on terms

and conditions, and transfer responsibility and risk from employers to workers.

Impact of technological change and artificial intelligence on jobs, employment security and workers' income security

Automation of tasks/jobs (AI)

Job automation means that tasks previously performed by people are carried out to a large extent, or entirely, with the aid of technology such as machines, software and artificial intelligence. Automation can apply both to physical tasks in production and transport and to cognitive tasks such as data processing, services and analysis. Over recent decades, automation has already had a substantial impact in production industries, including fish processing, where it has resulted in fewer jobs. The development of artificial intelligence is taking automation into new areas, with specialised tasks now being carried out with less human involvement.

Historically, technological change has often caused jobs or tasks to disappear while new jobs have been created. Machinery in textile production and factories took over a large share of manual work in the eighteenth and nineteenth centuries. A similar development has taken place in fish processing in Iceland, where jobs once based on manual sorting, cutting, packing and other processing changed with the introduction of filleting machines, sorting systems, conveyor belts, packing machines and computer-controlled quality systems. The result was not only a decline in traditional manual jobs but also the emergence of new jobs in machine operation, maintenance, the use of technology, software and data analysis.

The effects of artificial intelligence will be similar in principle but will appear in more specialised occupations and new industries. AI may therefore reduce the number of jobs, but it can also support workers in their tasks, take over defined tasks and change job content rather than eliminate jobs altogether. This will not be universal and the effects will vary according to the nature of the work. Some jobs will continue to be fully automated and disappear, particularly those based on repetitive tasks and limited human interaction.

In the short term, it is clear that certain groups and industries may be adversely affected, including labour-market entrants. This is a development that the labour movement and government must take seriously. In mid-2025, the chief executive of the artificial intelligence company Anthropic warned about the possible effects of AI on jobs and job availability. He considered there to be a risk that new technological solutions could reduce new clerical and professional jobs worldwide by 10–20% over the following five years. The negative effects would be greatest for people taking their first steps in the labour market rather than for older workers.

AI management – Algorithmic Management

Algorithmic management involves the use of data-driven algorithms or systems that give workers instructions, manage workflows including task allocation, conduct performance assessments, compile shift schedules or make other decisions that directly affect workers' working conditions, opportunities, work and terms and conditions.

Algorithmic management differs from automation. Automation primarily involves technology taking over or supporting particular tasks and jobs. Algorithmic management involves using technology to manage work and tasks. Workers continue to perform the same basic tasks, but under a different organisational system, with greater monitoring, demands for a faster pace of work, greater pressure, less predictability and less scope for professional judgement and

autonomy.

In its simplest form, algorithmic management may involve an automated shift schedule or a system that forecasts workload and staffing needs. In a more advanced form, it can become an extensive management tool in which data on workers' behaviour, output, attendance, communications or performance are used to shape their day-to-day working environment. Artificial intelligence can then become a kind of third party in the employment relationship between workers and employers, as decisions previously made by managers are partly transferred to technological systems. This may include, for example, using AI to provide workers with information or guidance on tasks, assess employee performance and determine rewards or sanctions.

A recent OECD study shows that algorithmic management is already widespread in Europe, with around 79% of companies reporting that they use it to some extent in the working environment. Its uses were analysed across three main functions: instruction, monitoring and evaluation tools.

Impact on workers' rights

Automation and algorithmic management can have positive effects on work if technology is introduced with clear objectives, transparency and worker involvement. It can contribute to better organisation, clearer work processes, improved oversight and more consistent treatment in certain cases. Whether the effects are positive depends on whether and how workers are involved in introducing change, including whether they are informed about the use of the technology and whether accountability is clear.

Algorithmic management can increase workload, reduce worker autonomy, intensify monitoring and surveillance, blur the boundaries between work and private life and undermine the right to rest. If performance is continuously measured and assessed in an opaque way, this can create pressure to work faster, take fewer breaks, make less use of sick leave or remain constantly available. The ILO has expressed serious concern about such developments and considers this type of use to have major implications for job quality and workers' health.

It also cannot be ruled out that increased automation and the use of artificial intelligence may affect pay decisions and workers' income.

Technological change and the digital transformation of the economy can have unforeseen effects on the labour market, including through the growing share of insecure employment relationships such as temporary agency work, temporary project work and jobs in the so-called gig economy. Increased outsourcing, demands for greater operational flexibility, more complex contracting chains, the growing use of digital labour platforms and the use of artificial intelligence to organise and manage work may therefore reduce employment and income security for certain groups. In many cases, this fragmentation involves shifting responsibility and risk from employers to workers and individuals and can undermine traditional employment relationships, workers' rights and fair competition between businesses.

High trade union membership and broad collective bargaining coverage enable workers in Iceland to respond to transitions and minimise the risk that they result in social dumping or undermine rights. However, increased use of artificial intelligence and algorithmic management raises new questions about how to ensure that technology does not erode rights that have already been won.

Iceland has not been immune to these developments. Trade unions are increasingly

encountering cases of bogus self-employment in which an employment relationship is presented as a contract for services even though the individual is in fact an employee. This has been particularly evident in the gig economy, where jobs are divided into distinct tasks allocated through digital platforms. With artificial intelligence and algorithmic management, systems can manage tasks, assess performance, determine income, and even make decisions on recruitment and termination. People working under such conditions often have little overview of or influence over their working conditions, income or employment security and frequently fall outside the traditional system of labour-market rights and protections.

These developments have had a particularly severe impact on groups already in a weaker position in the labour market, including immigrants, young people and those with limited access to information, professional development, continuing education or social protection. If technology is used to increase business flexibility without corresponding security for workers, it can deepen labour-market segmentation, increase the risk of breaches of employment terms and wage theft, and undermine fair competition between businesses.

Capabilities of artificial intelligence and its use in the economy

The capabilities of artificial intelligence have changed dramatically in a short period. Tasks that previously required specialist knowledge, experience and education are increasingly being carried out with the support of, or by, technological systems capable of processing large volumes of data, identifying patterns and making decisions. Figure 1 shows how the complexity of tasks that artificial intelligence can handle has increased rapidly in a short time. What was once limited to simple and repetitive tasks now extends to complex tasks involving organisation, analysis and decision-making and can replace more time-consuming work carried out by staff. It is estimated that AI doubles its capability roughly every seven months, and there is as yet no clear end to this development.

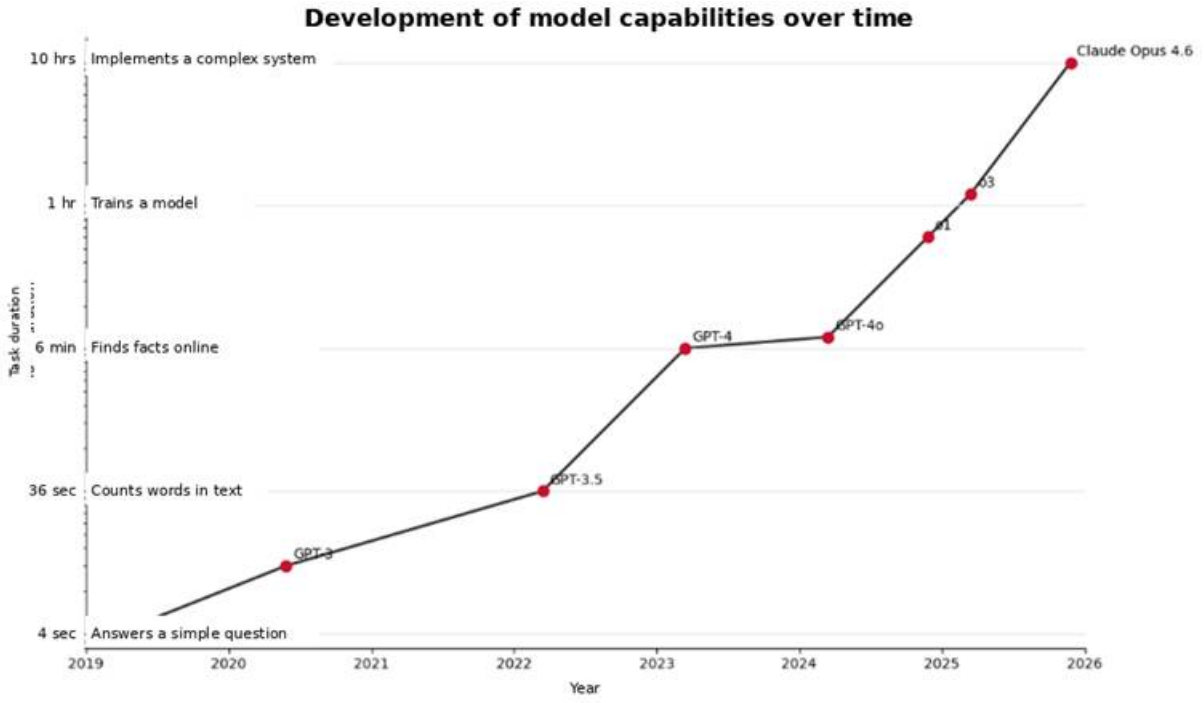


Figure 1.

According to McKinsey's annual survey[3], the use of artificial intelligence in companies has nearly quadrupled since 2017, from 20% to 78% in 2025. So-called generative artificial intelligence has developed even faster, rising from 33% to 71% in only a year and a half.

Anthropic's forecast of the potential use of artificial intelligence in jobs shows that the adoption of AI is not yet in line with its potential capabilities. Technological development has therefore moved faster than the ability of people and businesses to make use of it, and the impact on jobs is likely to increase as companies, managers and workers gain more knowledge of how to use AI and its implementation becomes more systematic. The use and extent of artificial intelligence varies considerably between companies and industries.

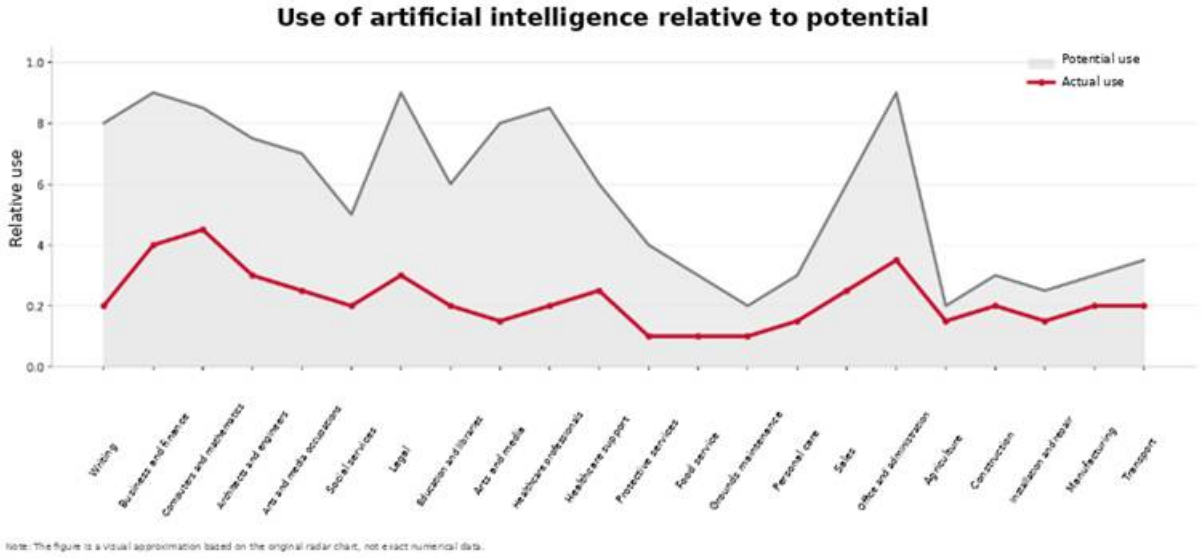


Figure 2 is taken from Almannarómur's report on artificial intelligence (2026). Original source: Anthropic.

The OECD has pointed out that the development and key infrastructure of artificial intelligence are to a large extent in the hands of a small number of major technology companies, both in terms of development and the scale of its use in business. In 2025, around 52% of large companies used artificial intelligence, compared with only 17% of small companies. Use is also greatest in industries where information processing, telecommunications, professional expertise, science and technical activities play a major role, although it has also increased in manufacturing, retail and services.

Data from Statistics Iceland[4] indicate that the use of artificial intelligence is already widespread in Iceland. Around 48% of companies use AI in some form in their operations, although far fewer use the technology for defined tasks and fewer still have developed a policy on the use and implementation of artificial intelligence. Use is most advanced in professional, scientific and technical activities, information and communications, transport and storage, rental

3 https://www.mckinsey.com/~/media/mckinsey/business%20functions/quantumblack/our%20insights/the%20state%20of%20ai/2025/the-state-of-ai-how-organizations-are-rewiring-to-capture-value_final.pdf?param1=competitive-matrix&utm_source=chatgpt.com

4 https://www.hagstofa.is/utgafur/frettasafn/visindi-og-taekni/upplysingataekninotkun-fyrirtaekja-2024/?utm_source=chatgpt.com

activities and various specialised services.

These findings indicate that artificial intelligence has already become part of the Icelandic economy and that its use is comparable to that seen elsewhere in Europe, although implementation varies considerably between industries. It is often introduced before companies have developed a clear policy for its use.

The Icelandic labour market in the context of the twin transition

The effects of climate and technological change depend on the circumstances of each country, the structure of its economy, the composition of economic activity, the state of infrastructure and the organisation of the labour market. A just transition must therefore take account of Icelandic conditions and of the groups, regions and industries that may be particularly affected by change.

The twin transition therefore affects not only individual industries but the very foundations of value creation, competitiveness and growth in the Icelandic economy. A just twin transition is not only about reducing greenhouse gas emissions but also about ensuring that the transformation of the economy and society supports sustainable value creation, stable economic growth and good living standards. The task involves both reducing the negative environmental impacts of economic activity and creating new foundations for employment and value creation through sustainable use of resources, new technology, innovation and clean energy.

Iceland is a small, open and export-driven economy in which a large share of value creation is based on natural resources, renewable energy, fisheries, tourism and energy-intensive industry. These sectors are highly important for export earnings, employment and the viability of communities. At the same time, the importance of intellectual property, digital services, specialised knowledge activities and other newer sectors has increased. The twin transition will therefore affect both traditional cornerstone industries and new and growing sectors of the Icelandic economy.

Iceland’s particular circumstances create many opportunities. Access to renewable energy, a strong position in the use of natural resources, good digital infrastructure and expertise in energy-related activities can support the development of a more diverse economy. This includes sectors connected with green industrial development, data processing, intellectual property, biotechnology, food production, aquaculture, carbon capture and other technology- and knowledge-driven activities. Such development can strengthen the foundations of the economy, but its labour-market effects will depend on whether it creates lasting, good jobs, how those jobs are distributed between regions and which groups have access to them.

Conversely, the small size of the Icelandic economy, limited economic diversity in some regions, the dependence of some industries on international markets and the importance of a small number of export sectors can amplify the effects of external shocks and rapid change. Climate change, the energy transition, changing sustainability requirements, technological development and changes in global value chains can affect business conditions, competitiveness, skills requirements and the number of jobs in different ways across industries and regions.

In tourism, the effects may be seen both in changing conditions and changing demand. The sector relies heavily on Iceland’s natural environment as an attraction, international air travel and the purchasing power of overseas visitors. Changes in weather, glaciers and ecosystems,

as well as natural hazards, may affect Iceland's attractiveness as a destination, while the cost of air travel, carbon requirements and changing attitudes to sustainability among travellers may affect demand. Because tourism creates large numbers of jobs throughout the country, changes in the sector can have substantial effects on regional development, employment security and services in individual communities. In fisheries, changes in marine ecosystems, the energy transition in the fleet and increased sustainability requirements may affect operations, jobs and the viability of communities.

In energy-intensive industry, access to renewable energy, energy prices, energy security, carbon requirements and investment in new technology are highly important. Iceland has a degree of competitive advantage because of the low carbon footprint of its electricity system, but increasing requirements concerning the carbon footprint of production and sustainability in value chains may require substantial changes to production processes. This may create opportunities for cleaner industrial production and new green economic development, but also risks for jobs and communities if investment, technological development and policy do not keep pace with international change.

IP-based industries and other knowledge-driven activities have at the same time become a more important part of the Icelandic economy. Sectors based on software, research, biotechnology, health technology, language technology and digital solutions can diversify exports and reduce the economy's dependence on a small number of resource-based industries. They generally create specialised and often well-paid jobs, but also require education, professional development and access to digital skills. In service, clerical, financial, administrative and professional occupations, artificial intelligence will have a growing impact on tasks, the organisation of work and skills needs.

In many parts of the country, economic activity depends on a small number of industries or even a single large employer. Changes in operations, technology, energy use or demand can therefore have far-reaching effects on employment, services and social infrastructure. At the same time, digital technology, remote working, strong telecommunications and new knowledge-based industries can increase opportunities for more diverse economic development outside the largest urban areas. This requires access to essential infrastructure, education, housing, transport and public services.

Transport and digital infrastructure are particularly important in this context. The energy transition in transport affects emissions, business operating costs, freight, people's access to work and the position of communities. If costs or access to new solutions are not distributed evenly, this can affect the living standards and labour market participation of different groups. Strong digital infrastructure is also a prerequisite for people and businesses to make use of digital services, remote working, education and new opportunities in a knowledge-driven economy. Unequal access to such infrastructure can increase regional and social inequality.

The effects of the twin transition will also vary according to people's position in the labour market. A gender-segregated labour market affects how these changes are experienced. Women are strongly represented in clerical, service, care and support occupations where artificial intelligence may change tasks and the organisation of work, while men are more strongly represented in sectors connected with the energy transition, construction, transport and green industrial development. Many immigrants work in sectors where jobs are seasonal, low-paid or exposed to changes in tourism, fisheries, construction, aquaculture and services. Young people may be affected if entry-level jobs and simpler tasks change or are displaced,

while older workers may need additional support to meet new requirements for digital skills and continuing education.

These circumstances require the effects of transformation to be assessed in light of the position of different groups and their real ability to adapt to change. Access to continuing education and retraining, professional development, recognition of prior learning, Icelandic-language education and information about rights is particularly important. If such measures do not reach the groups that need them, the benefits of transformation may be distributed unevenly and the risk of entrenched inequality may increase.

In this context, tripartite cooperation between government, employers and the labour movement is essential. Transformations of the economy and the labour market will not be just unless workers and their organisations are involved in decisions on economic development, the introduction of technology, skills needs, working conditions and social security.

Experience from other countries shows that active consultation and clear government responsibility can support social consensus and reduce the risk that the costs of transformation are distributed unevenly across society. Spain has developed a dedicated just transition strategy, established an institution to coordinate its implementation and concluded regional just transition agreements with the participation of government, local authorities, trade unions and business. These measures emphasise, among other things, employment security, retraining and new economic development in areas affected by decarbonisation and the energy transition. In the Nordic countries, the emphasis has been more on skills development, continuing education and retraining, and active cooperation between the social partners. In Norway, a dedicated committee on future skills needs has operated with the participation of government, local authorities and the social partners. Sweden has concluded a broad tripartite agreement on skills development and employment security to strengthen workers' position in light of labour-market change. Denmark has also established a fund supporting economic development, innovation and continuing education and retraining in connection with climate objectives and employment protection.

These examples show that a just transition requires integrated policy-making in which employment, education, climate, regional development and welfare policy are considered together. In Iceland, such an approach must take account of the particular features of the Icelandic labour market, broad collective bargaining coverage, dispersed settlement, limited economic diversity in some regions and the rapid adoption of new technology.

Icelandic society has an opportunity to make use of its strengths in the twin transition, but this requires a clear policy on how the benefits of change are translated into good jobs, stronger rights and improved living standards. The objective must be to strengthen economic diversity, increase the resilience of communities and ensure that green and digital value creation is based on secure, rights-protected and decent jobs.

Concluding remarks

The Icelandic labour market now faces choices about how these developments will be shaped. Taken as a whole, this is a systemic transformation affecting every part of society. The necessary policy-making must be carried out through active tripartite cooperation between workers, employers and central government.

Without clear policy and worker involvement, these developments will lead to greater insecurity, increased inequality and a weakening of the welfare system. With a purposeful policy, however, it is possible to ensure that technology is used to improve jobs, strengthen

rights and enhance welfare.

Good jobs do not arise by themselves. They are created by ensuring that technology serves workers and society as a whole, that rights are clear and that the benefits of change are shared fairly.

Appendix 1

Definition of a just transition

A just twin transition is based on the fundamental principle that progress should be assessed not only in terms of economic growth or productivity gains, but also by its effects on people, jobs, communities and regions. The transformation of the economy must therefore support good and decent jobs, strong labour rights, social security and genuine opportunities for people to pursue education, professional development and participation in a changing economic environment.

This approach requires the costs and benefits of change to be shared fairly. Workers and the communities affected by transformation should not bear the burdens alone. Successful transitions require active government policy, strong tripartite cooperation in the labour market and genuine involvement by trade unions and workers in shaping change.

A just twin transition also means that new technology and artificial intelligence are used responsibly and within a clear regulatory framework that protects workers' rights, privacy and position. In the same way, the green transformation of the economy must be based on social responsibility, with new jobs that are secure, offer good working conditions and provide full workers' rights.

The International Labour Organization (ILO) has repeatedly emphasised that a just transition cannot be secured through market solutions alone, but requires an active role for government, strong social dialogue and robust welfare and support systems. It is particularly important to ensure that new jobs created are good jobs, that workers have access to continuing education and retraining, and that transformation does not lead to increased inequality or social insecurity.

A just twin transition is therefore not only about reducing emissions or introducing new technology, but about how society chooses to organise the future of work, value creation and living standards on the basis of equality, solidarity and social justice.

ILO guidelines

The International Labour Organization (ILO) has published guidelines for governments and the social partners on how to promote a just transition. They emphasise that the transition to sustainable economies must be based on integrated policy-making in which employment, social protection, education, labour-market policy and climate objectives work together. The guidelines are based on the fundamental premise that a just transition cannot be secured through market solutions alone, but requires an active role for government, social dialogue and participation by the social partners.

The effects of climate and technological change therefore differ between countries, industries, regions and groups, and the measures required also vary. The ILO places particular emphasis on analysing these differing effects, as transformation is determined not only by climate objectives or technological progress but also by:

- the structure of employment
- regional conditions
- infrastructure
- workforce skills
- the social composition of the labour market
- and the capacity of institutions and society to support adaptation

The ILO places particular emphasis on the fact that regions within countries differ in their

vulnerabilities, infrastructure and opportunities for economic development arising from the green transition. This is especially relevant in the Icelandic context, where economic activity, settlement patterns and access to services vary greatly between regions.

Experience from other countries in just transition policy

Spain

Spain has adopted a broad just transition strategy and legislation to support it. The legislation provides for a dedicated just transition strategy to be developed every five years to ensure that the effects of the energy transition and decarbonisation of the economy are fair for the people and regions most affected by change. Particular efforts are made to protect the rights of workers in carbon-intensive industries, with an emphasis on retraining, employment security and support for economic diversification in vulnerable areas, including rural regions. Just Transition Agreements (Convenios de Transición Justa) are also concluded with the participation of government, local authorities, trade unions and business to invest in new industries, improve infrastructure and create new jobs in areas facing contraction because of the closure of coal mines, power plants or polluting industries.

The Spanish government has also established a Just Transition Institute to coordinate and implement just transition policy. The Institute ensures that the social effects of the energy transition are analysed and that measures are adapted to the needs of each industry and region. The legislation also emphasises public participation and equality throughout policy-making, with particular attention to gender perspectives and social adaptation. Spain thus seeks to build a carbon-neutral economy in which economic and social development go hand in hand with climate objectives.

Denmark

Denmark has established a fund intended to reduce the negative social and economic effects of the transition to a carbon-neutral economy. The fund is financed partly with support from the European Union and partly from national public funds. It supports, among other things, productive investment in small and medium-sized enterprises, the establishment of new businesses and continuing education and retraining for workers, with the aim of supporting reductions in greenhouse gas emissions and protecting employment.

In recent years, many European countries have developed different approaches to responding to the effects of climate and technological change on the labour market and society. Despite differences in approach, these policies share an emphasis on an active role for government, social dialogue and participation by the social partners in shaping transformation. In many cases, climate objectives, technological change, employment security, skills development and regional development are brought together under the framework of a just transition.

Scotland has been among the leaders in this field and was one of the first countries to place a legal duty on government to take account of a just transition when developing climate policy. A dedicated Just Transition Commission operates there with participation by experts from academia, business, civil society and the labour movement. Spain has developed a broad just transition strategy with particular emphasis on employment security, retraining and the creation of new jobs in regions affected by the energy transition and the decarbonisation of the economy. The Spanish government has also established a dedicated Just Transition Institute to coordinate policy and analyse the social effects of change.

In the Nordic countries, the emphasis has been more on skills development, continuing education and retraining, and active tripartite cooperation. In Norway, a dedicated committee

on future skills needs has operated since 2017 with the participation of government, local authorities and the social partners. In Sweden, a comprehensive tripartite agreement was concluded in 2022 between government, trade unions and employers on skills development and employment security, with the aim of strengthening workers' position in the face of rapid labour-market change. Denmark has also established a dedicated fund supporting economic development, innovation and continuing education and retraining in connection with climate objectives and employment protection.

Alongside climate policy, debate in Europe about artificial intelligence and its effects on the labour market has developed rapidly. The European Union has taken the lead by introducing the world's first comprehensive legal framework for artificial intelligence, the Artificial Intelligence Act (2024/1689), which takes a risk-based approach under which stricter rules apply as the potential effects of systems on people's rights, safety and livelihoods increase.

European countries have nevertheless taken different approaches to policy on artificial intelligence and the labour market. Spain and Italy have introduced more specific rules focusing on algorithmic transparency, the position of workers on digital labour platforms and human-centred use of technology. The Nordic countries have instead relied more on the interaction between labour law, data protection, collective agreements and social dialogue in the spirit of the Nordic labour-market model.

Despite these different approaches, the examples show that the effects of climate and technological change often require integrated policy-making in which employment, education, social and regional development issues are considered together. A common theme is the emphasis on strengthening workers' position, improving education and skills, and ensuring that the benefits of transformation accrue to society as a whole. In Iceland, there are still relatively few examples of the effects of artificial intelligence and technological change being addressed specifically in collective agreements or labour-market policy.