

SCIENCE, INNOVATION & TECHNOLOGY

Policy Paper 158



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Executive Summary

Liberal Democrats believe science, technology and innovation will be at the heart of tackling the big problems of our time: economic stagnation, crumbling public services, social inequality and climate breakdown.

This paper sets out a comprehensive package of measures that form the basis of a Liberal Democrat vision for a dynamic and innovative science and technology sector, which is fair to all in society, not just the powerful established organisations.

The Liberal Democrat values of internationalism, respect for individual rights and wellbeing, and challenging concentrations of power will be essential for UK science and technology to thrive and create a prosperous economy for the future.

In particular, we will:

- Support the science and innovation ecosystem with a renewed commitment to our education system by: creating a teacher workforce strategy to ensure that every secondary school child is taught STEM subjects by a subject specialist, encouraging international students to attend UK universities and making a long-term commitment to Horizon and international collaboration.
- Ensure AI works for the common good – balancing innovation with ethical responsibility – with a National AI Strategy and ensuring that the digital rights of every citizen are strengthened and upheld, with fair protection and remuneration for creative industries in the age of AI, so that all can benefit from technological progress.

- Develop a long-term people strategy alongside an industrial strategy, to ensure that the UK workforce has necessary skills and people are protected from disruption.
- Raise R&D spending from 2.9% of GDP to 3.5% of the GDP and invest in innovations that solve big societal challenges of our time, including climate change, revitalising our stagnant economy, tackling social inequality and rebuilding our public services.
- Fix our crumbling public services with a comprehensive public sector technology policy and investment plan.

Part 1: Supercharging Science and Innovation

1 Introduction

1.0.1 Science, innovation and technology are at the heart of Britain's success - from steam power in the 18th century through to advanced life sciences today, Britain has been a major technological innovator. Today, science and innovation has the potential to help address society's most pressing challenges - from building a prosperous economy to tackling climate change.

1.0.2 Liberalism was essential to early technological progress – by challenging the vested interests of landowners and established wealth, the liberal revolution brought about a new era of trade, innovation and invention. Today, liberal values of internationalism, respect for individual rights and wellbeing, and challenging concentrations of power can combine with science and technology to usher in a new age of prosperity and progress.

1.0.3 In this paper, we set out a vision for science and technology in the mid-21st century - combining intelligent and effective government intervention with a dynamic and innovative private sector, to maximise the benefits of new technology whilst ensuring that wealth and power are spread among all peoples and places of the United Kingdom.

1.0.4 There are four factors that are needed for a healthy environment for science and innovation. First, it requires people with the right skills - this

means both developing people with these skills through the UK's education system and also enabling universities and business to attract international talent. Second, it requires investment from governments and industry; and third, it requires the right regulatory environment that promotes competition and gives businesses stability and certainty. Finally, it requires the right infrastructure, both so that the appropriate facilities and equipment are available, and to ensure the development of regional clusters.

1.0.5 Government has a key role, through developing a long-term industrial and people strategy, to ensure that these building blocks are all in place.

1.0.6 With the Conservatives' ideological aversion to government playing a role in the economy, and Labour's timidity towards the largest companies, neither of them will be able to truly take advantage of the technological revolution and make the UK a prosperous and fair place.

1.0.7 Under the Conservatives, power and wealth will be concentrated in the hands of a few small companies, likely based overseas. Under Labour, Britain will not be able to work collaboratively with international partners, and will be hamstrung by short-term cost saving measures, with the cancellation of the exascale supercomputer in Edinburgh symbolic of their lack of vision and understanding of how science and technology works.

1.0.8 Only the Liberal Democrats can provide the policies and values Britain needs to harness the technological revolution, whilst keeping concentrations of power in check and ensuring that all can benefit from progress.

2 Education and Skills

2.1 Introduction

2.1.1 Education and skills are at the heart of a successful science and technology sector: they are the bedrock on which everything else is built. Liberal Democrats will invest in education and skills by:

- Creating a teacher workforce strategy that ensures that every secondary school child is taught by a subject specialist and fully funding the independent pay body's recommendations for teacher salaries.
- Building a long-term consensus across parties and teachers to broaden the curriculum and make qualifications at 16-18 fit for the 21st Century.
- Emphasising data and digital literacy across subjects and overhauling mathematics education to improve teaching of data and computer science.
- Investing in adult education and skills, to be set out in a future policy paper

2.2 A Broad and Balanced Curriculum

2.2.1 Our vision is of an education system that teaches mathematics and the sciences in a way that is engaging and encourages young people to use their creativity. The education system should be aiming to ensure that all children attain a base level of data and digital literacy, while supporting those with an interest to develop the skills required to pursue scientific and technical careers. This should not come at the expense of arts and humanities subjects, which help children and young people develop crucial

creative, communicative and emotional skills. Critical thinking and creative skills will be essential for deploying new technologies in the future.

2.2.2 We believe that the way that education is currently organised forces children to specialise in subjects too soon. Recent research has shown that between 2010 and 2021 the number of students with A and AS levels or equivalent covering at least three of the main subject groups (eg, maths, science, humanities, languages) halved. This means that England has one of the narrowest curriculums in the developed world, and addressing this should be a priority. Secondary education should be restructured to introduce a broader and more balanced range of study. An urgent priority should be to establish a standing commission to build a long-term consensus across parties and teachers to broaden the curriculum and make qualifications at age 16-18 fit for the 21st century.

2.3 Improving Education in Science and Technology

2.3.1 Despite their vital role, our schools are underfunded, with many being forced cut back on staff and IT equipment due to rising costs. School infrastructure has not received proper investment – with many schools being forced to either fully or partly close due to safety concerns. Against this background, there is a crisis in teacher recruitment and retention, so that millions of secondary school pupils are being taught by someone who is not a subject specialist.

2.3.2 To tackle the crisis in teacher recruitment, we would create a teacher workforce strategy to ensure that every secondary school child is taught by a subject specialist and that recommendations for pay rises are made by a properly independent body and fully funded by the government. We would also aim for a year-on-year increase in the number of science

and mathematics teachers by guaranteeing 35 hours of subject-related CPD annually for STEM teachers and supporting alternative pathways for teachers, including apprenticeships.

2.3.3 There is a particular challenge in mathematical education (recognised by the [Royal Society](#)) in that our society tends not to see a person's lack of mathematical skills as a problem, unlike, for example, poor skills in English. The last Conservative government sought to address this through a focus on Maths to 18, but the reality is that the major issues with mathematics education lie earlier on. Because mathematics is a key skill across STEM subjects, and because it can teach the critical thinking and data and digital literacy skills needed to function as a citizen, it is vital to get maths education right through all the school years.

2.3.4 To effectively achieve both these objectives, mathematical education needs to change and broaden its focus to also include statistics, data science and computer science. It is important that the subject – understood as encompassing computing, coding, programming, statistics, data science and critical thinking – is embedded across subjects, to ensure that all students have achieved foundational mathematical, digital and data skills by the age of 14. Digital skills go beyond mathematics, coding and computer science, and as part of the reforms to the curriculum we would ensure that media studies has a prominent role in teaching people how to engage critically with the digital landscape.

2.3.5 If, in mathematics education, there is increased focus on data and digital skills, it is all the more important to ensure that students from disadvantaged backgrounds are able to access digital technology and tackle the digital divide. Many disadvantaged pupils can lack access to both the internet and digital technology at home. It is impossible for children to

develop the data and digital skills that they need without the technology required to learn them. The digital divide also extends to people with mixed abilities and the neurodivergent who cannot learn using conventional methods.

2.4 Post-School Learning

2.4.1 Education does not stop at school. We would invest in ways to improve digital literacy across generations and communities, to ensure that older generations or those who missed out on learning these skills during younger stages of education, are not left behind.

2.4.2 The Liberal Democrats believe that education should be accessible throughout life. As the pace of new technology increases, it is vital that people have access to quality education and training throughout adulthood in order to upskill and reskill. Post-18 Education is not limited to universities, but also encompasses apprenticeships, in-work and vocational qualifications, and short courses in further and continuing education.

2.4.3 A future policy paper will cover post 18-skills in more detail, but Liberal Democrats would make sure that digital and technological reskilling is available by:

- Giving adults access to free courses to teach essential digital skills.
- Maintain and expand mechanisms for businesses to work with education and training providers to deliver training tailored to the digital skills needed for the future.
- Ensure quality control for online course providers and enable learners to have access to transparent information regarding the content, teaching methods, tutoring time, and what type of

qualification they will achieve before incurring liability for tuition costs.

3 Universities and Research

3.1 Introduction

3.1.1 Universities are some of the biggest drivers of innovation and new technology development in the UK. Oxford and Cambridge develop revolutionary new life sciences technology, but it's not just the long established universities producing cutting edge research. For example, the University of Reading develops robotics technology and University of Bradford develops space technology. Across a range of sectors, the UK's universities are genuine world leaders.

3.1.2 Liberal Democrats would strengthen our position as a world leader in university research by:

- Enacting a decade-long programme of increasing and improving research funding, with a package of measures to improve spin-out ecosystems.
- Fully participating in Horizon Europe, and applying to join the European Innovation Council and EU-US Trade and Technology Council
- Replacing the Conservatives' failed immigration policies with a flexible merit-based system to attract international talent

3.2 Research Funding

3.2.1 Public finance for research is one of the biggest drivers of innovation in the UK. Currently, this is largely administered by UK Research and Innovation (UKRI) made up of seven research councils and two additional bodies: Innovate UK and Research England. There is also funding

undertaken by a wide range of other public bodies, such as the UK Space Agency.

3.2.2 Whilst the system has delivered much for the UK, it is not without its problems. A recent review has found that the current system is failing due to:

- Under-investment by successive governments, with too much short-termism
- Excessive bureaucracy in the system
- The system being kept afloat by cross-subsidy from foreign student income

3.2.3 As part of our long term objective to raise R&D spending to 3.5% of GDP by 2034, up from 2.9% in 2022, Liberal Democrats would set out a decade-long funding programme to give the sector a reliable and resilient funding stream, giving researchers and universities confidence when they undertake longer-term funding projects. We would draft an R&D strategy that invests in innovations tackling big societal challenges: climate change, using AI for good, inequality, the ageing population. Working across universities and the private sector to drive innovations through from early technical readiness levels to commercialisation, we would reform UKRI as well as the British Business Bank to provide appropriate funding strategically, building on the UK's research and industrial strengths to create value for the British people.

3.3 International Research

3.3.1 Liberal Democrats are internationalists at heart: unlike other parties, we know that working together across borders can benefit us all.

This is particularly true in science and technology, where universities need to be able to work across borders and attract talent from around the world.

3.3.2 We would continue fully participating in Horizon Europe, and make a clear declaration that the UK will stay in the scheme over the long term, giving greater certainty to researchers. We would also seek to join a range of other international research programmes, including the European Innovation Council, and participate in the Trade and Technology Council with the US and the EU, so we can play a leading role in global technology regulation and development.

3.3.3 At home, we would replace the Conservatives' failed arbitrary salary threshold with a flexible, merit-based system for work visas that allows universities to attract international researchers and talent. This would be coupled with a long-term workforce strategy focused on addressing skills gaps from within the UK through training and education. We would work alongside employers in each sector to ensure this strategy addressed their specific needs, including universities.

3.4 Spin-Outs

3.4.1 The UK's universities have historically been very good at research and development, but poor at scaling up commercialising these new innovations.

3.4.2 We would ensure that local authorities are resourced so that they can bring together local businesses, universities and civic leaders to work together on locally relevant research and develop local ecosystems of spin-outs. This will help drive a more entrepreneurial culture which will

encourage researchers to think and engage more with the business community - closing the divide between academia and commerce.

3.4.3 As part of our plans to raise R&D spending, we would introduce 'proof of concept' funding for universities, to de-risk spending and ensure that researchers are properly resourced to undertake early research when commercial funding may not be available.

3.5 Conclusion

3.5.1 Liberal Democrats would give our universities the support they need to carry out cutting edge research and innovation. We would put funding on a more even keel, whilst also joining various European and international programmes and reforming our visa rules so that universities are able to participate with partners around the world, together with a package of measures to promote spin-outs and commercialisation of British research.

4 The Private Sector

4.1 Introduction

4.1.1 The relationship between the private sector and technology is fundamental to the development and deployment of new technologies and innovation. The use of technology in the private sector encompasses everything from highly-specialised companies developing the most advanced semiconductors and e-commerce firms making it easier to buy online, right the way to small local businesses creating their first online booking page.

4.1.2 The strength of the UK financial services market has also meant the UK has been highly successful in creating and funding new businesses, with a combined market valuation of £1.1 trillion for UK tech investments.

4.1.3 However, successive policy failures of the last Government have damaged the UK's position. Investment has begun to plateau and key metrics, such as early-stage venture capital have begun a downward trend. A failure to truly engage in high-quality international regulation, a lack of business certainty, funding announcements not backed by action and a failure to invest in infrastructure, education and training have diminished what should be a glorious opportunity for the UK to play a major part in the next generation of digital businesses.

4.1.4 Liberal Democrats would unlock the innovative potential of the private sector, underpinned by these principles:

- High quality, well targeted regulation can help enhance growth and create new sectors, while also protecting consumers, society and our planet.
- Providing businesses certainty is key to enabling businesses of all sizes to invest and take risks. We will be transparent in our plans to help businesses feel confident in theirs.
- New technologies and scientific monetisation happen most effectively when based on high-quality good corporate governance that puts long term, ethical growth over short term returns.
- Innovation happens when the public and private sector meet. We will use the power and resources of the state to underpin, and incentivise technological development and adoption.

4.2 SMEs

4.2.1 Small businesses are the backbone of the UK economy and can be some of the most innovative and dynamic businesses. They are also a core part of the liberal belief in individuals working hard to better themselves and their communities, challenging established brands and business practice.

4.2.2 However, the UK has consistently failed to support small businesses to utilise new technologies effectively or to gain access to the capital they need to invest effectively in their future.

4.2.3 One key element of this problem is a lack of access to finance for SMEs. A recent Bank of England survey of SMEs looked at why businesses fail to invest. The overall finding was that SMEs are held back by lack of access to and concerns around finance.

4.2.4 Liberal Democrats have a proud record of improving access to finance for British businesses; the British Business Bank and the Green Investment Bank were launched by Liberal Democrat Business Secretary Vince Cable. We would expand the British Business Bank to perform a more central role in the economy, to ensure that viable small and medium-sized businesses have access to capital. In particular, we would focus on technologies to tackle the UK and world's biggest challenges like climate change and help de-risk investment by allowing it to directly invest in SMEs.

4.2.5 As technologies change, so does the nature of what SMEs need in order to support their adoption. For example, early internet infrastructure requiring servers and hardware for most SMEs to extract the benefits of becoming digitally enabled are increasingly less necessary in a world of cloud computing and where new tools like AI operate on a software or subscription basis. Therefore Liberal Democrats would examine how we match the level of ambition seen in capital expenditure reliefs with the reliefs available on revenue expenditure for selected subscriptions and software for SMEs. This would include, for example, cloud computing, CRM and AI Enterprise software.

4.2.6 Government support must go hand in hand with the role of private finance. We would ensure that the financial services industries play their part by working with the major banks to fund the creation of a local banking sector dedicated to meeting the needs of local small and medium-sized businesses. This would help tackle the lack of access to capital that is holding back investment and R&D. As part of this programme we would expect banks to explicitly provide education and support to businesses to adopt relevant new technologies.

4.3 Large Businesses

4.3.1 Tech businesses have become many of the largest businesses in the world, and ones on which millions of other, smaller businesses rely. These businesses hold immense powers, often acting as gatekeepers to the internet, but are also often at the forefront of funding new technological and scientific discoveries.

4.3.2 Liberal Democrats want to see a true partnership with businesses, providing them with the long-term horizon planning they need to confidently invest and grow in the UK, while at the same time setting clear, enforceable regulatory guardrails that put real responsibilities that sit alongside their power, and that protect our citizens, society and the environment.

4.3.3 The creation of the Digital Markets Unit within the Competition and Markets Authority is an important first step in this approach, helping provide mechanisms to prevent over accumulation of power and develop a level playing field between large and small businesses. However, Liberal Democrats would also explore the creation of a network of rights and responsibilities for large platforms expecting those firms with the largest share of certain markets to support development and open licensing of tools that can support small businesses. This may include, for example, expecting app stores, who have immense power over the technologies on our phones, to lead the way in developing age verification tools that can protect young people from harm.

4.3.4 In return for enhanced partnerships in these areas, Liberal Democrats would seek to provide far greater clarity and transparency than ever before to large national and international businesses about the

Government's regulatory approach. We would publish a clear regulatory roadmap to give long term visibility to businesses of potential regulatory measures that may impact their investment decisions, and provide enhanced consultation with Government so that new regulation reflects the detailed operational complexities of the businesses affected. This would include specific areas where we commit to alignment with our international partners, in particular the EU, to give businesses confidence the UK will not create unnecessarily dual regulatory standards.

4.3.5 To ensure that Government has the ability to work with business, we would also significantly invest in upskilling the technological expertise in the civil service and relevant regulatory bodies to better ensure that policy makers have real experience of the issues on which they work. We will also require all major regulators to appoint a committee of non-exec experts to support them in their work, with proportionate balance between those with relevant private sector experience and those drawn from government or civil society backgrounds. These efforts would form part of an enhanced set of Better Regulation Principles to be followed in Government.

4.3.6 Liberal Democrats also recognise the important role of large businesses in R&D development. 60% of the UK's private sector R&D comes from large businesses, who are often better advantage of the range of tax credits and other funding options that are available. With our target of 3.5% of national income being spent on R&D by 2034, and a comprehensive industrial strategy identifying key areas for investment, we would give larger businesses a clear pathway of the areas of R&D where we will provide enhanced support and cooperation for the benefits of the economy. We would enact a UK version of the EU and USA's Chip Acts, developing a comprehensive strategy for ensuring access to essential digital skills, technology and materials.

4.3.7 When making international investment decisions, large businesses also need to be confident in core infrastructure. Liberal Democrats would therefore publish a roadmap of digital and scientific infrastructure projects, including planned investments in the UK energy grid, which is critical to supporting new technologies from electric vehicles to AI adoption.

4.3.8 Finally, Liberal Democrats would work to ensure that large businesses take decisions for the long term, not short term gain, by reforming corporate governance rules by rebalancing the Companies Act to provide a genuine obligation on directors to consider the long-term interests of the company and of its employees, suppliers, customers, the community and the environment; broaden the scope to include the company's extended value chain where it exercises control or significant influence; and include a duty of care for the common good.

4.4 International Cooperation

4.4.1 As an inherently internationalist party, Liberal Democrats strongly recognise the benefits of an interconnected world where people and countries can cooperate, share knowledge and trade freely. The internet does not respect borders and, as a result, can be a powerful tool in supporting this type of liberal approach.

4.4.2 However, we live in a time when many countries are seeking to close their doors to international cooperation and trade, and where the central dominance of a few very large countries risks our collective national and economic security. The election of Donald Trump in the USA further means that the international rules base consensus that has helped shape

regulation on emerging technologies around the globe for decades could be significantly undermined.

4.4.3 Meanwhile, the approach of some of the UK's traditional allies, including the EU has often appeared too inflexible and damages the adoption and deployment of technologies.

4.4.4 Liberal Democrats continue to champion cooperation, the rules based approach and working with our allies to protect against the creation of arbitrary barriers to research and trade or the abandonment of good governance in favour of deference to short term vested interests. Our approach will include:

- Supporting agreement on international principles governing AI and other emerging technologies at the OECD.
- Continue fully participating in Horizon Europe, and make a clear declaration that the UK will stay in the scheme over the long term, giving greater certainty to researchers. We would also seek to join a range of other international research programmes, including the European Innovation Council, and participate in the Trade and Technology Council with the US and the EU, so we can play a leading role in global technology regulation and development.
- Commit to maintaining the risk-based approach to data protection that explicitly balances the three principles of right to protection of personal data, national security and the importance of allowing the free flow of data for civic and commercial purposes.
- Strengthen the UK's relationship with developing countries by restoring the overseas development budget to 0.7% of national income and a range of other initiatives.

- Maintaining efforts to implement new OECD rules around minimum taxation and transfer pricing to ensure that the benefits of digital technologies are fairly distributed based on companies sales, not simply where they are headquartered.

4.5 Tax and Technology

4.5.1 New technologies can bring immense benefits in reducing the burden on public services, whether that is scientific breakthroughs helping to combat diseases or AI being used to better manage resources and infrastructure planning.

4.5.2 However, we also recognise that some technologies are likely to be disruptive to the world of work or enable businesses to deliver goods and services without the kind of physical infrastructure previously necessary. This has significant ramifications for our society and culture, but also for how we fund our public services. Significant elements of our taxation system are currently based on taxation of either employees or physical assets, that rely on presence in the UK. Similarly, taxes on consumption of certain types of goods, such as fuel, can be rendered obsolete by new technologies.

4.5.3 Efforts such as the Digital Services Tax, and work at OECD level on changes to transfer pricing are attempts to redress some of this balance. While Liberal Democrats support these efforts, they are generally stop gap measures. Transformative technologies like AI are likely to make these challenges even more acute and evidence suggests international efforts may not keep pace with these changes.

4.5.4 Liberal Democrats therefore believe the Government should take a much more holistic look at the UK tax base, and develop a roadmap for tax transformation that assesses the impacts new technologies may have and provides a plan for maintaining an appropriate tax base to fund our public services. Such a plan should include examining the long term viability of employer and employee taxes, fuel duty, and business rates, among others taxes and should be based on the principle of seeing as much as possible to tax profits and wealth rather than impacting revenue and meaningful investment.

Part 2: Artificial Intelligence and Machine Learning

5 A National AI Strategy

5.1 Introduction

5.1.1 Artificial Intelligence is arguably the most revolutionary technology developed since the internet. It has the potential to massively improve productivity, improve our public services and improve our society and economy.

5.1.2 Equally, without careful regulation and ethical use, it could severely exacerbate inequality, create large-scale unemployment and undermine our democratic way of life. Liberal Democrats would ensure AI works for the common good – balancing innovation with ethical responsibility – with a National AI Strategy including:

- Introducing a robust regulatory environment with flexible monitoring, inspection, auditing and enforcement powers that would oversee ethical and transparent standards for AI.
- Supporting open approaches to AI to democratise and championing transparency.
- Defending and expanding the rights of the public with regard to automated decision making.
- Reaching an international agreement on the governance and use of AI.

- Strengthening rules around copyright so that creators are treated fairly, with record keeping duties and robust, independent auditing of data and content use for AI developers.
- Strengthening our democratic processes and investing in new technologies to detect illicit or harmful uses of AI.

5.2 Defining AI

5.2.1 Artificial intelligence (AI) has a wide range of meanings in the public's imagination as well as for the purposes of public policy - for the purposes of this paper, we have used the definition used by the Organisation for Economic Cooperation and Development (OECD), which was adopted in November 2023:

“a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment”

5.2.2 The key point in this definition is that AI is a machine that relies on data inputs to generate outputs. For the foreseeable future, this will be how most AI functions.

5.2.3 There are also variations in types of AI. Most online platforms have a system for showing recommended content, Netflix and Amazon being two examples, which has been around for some time. Generative AI, which is the most advanced form, can create new content on the basis of its data inputs. It can create sound, images, videos and text by drawing upon vast quantities of existing data.

5.3 Regulating AI

5.3.1 There is an urgent need to introduce a regulatory system for AI, given the ethical, economic and social impacts it could have. Liberal Democrats would bring forward legislation for parliamentary debate on AI, with the aim of creating a clear, workable and well-resourced cross-sectoral regulatory framework, that promotes innovation while creating certainty for AI users, developers and investors.

5.3.2 Given the technical level of knowledge required to regulate and monitor AI and its reliance on data from across a broad range of areas, we would introduce a single overarching regulatory regime with a lead regulator, learning from the Human Fertilisation and Embryology Authority (HFEA) – which is a successful regulator operating in space where there is a need to balance ethical considerations with rapid technological advancements. HFEA combines monitoring, inspection and enforcement roles, with regular consultations and updating of its remit in response to new developments. Unlike some other regulators, which have often proved slow and cumbersome in responding to changes in society, HFEA has shown it can be flexible and adapt in responding to rapidly advancing and changing technology, that pose large ethical questions - the new AI regulator learn from these aspects of HFEA, so that it too can respond rapidly and effectively to emerging technology.

5.3.3 An important role of the regulator will be to promote and maintain an environment in which AI professionals and companies adhere to high ethical standards. We would develop legally binding standards for ethical design, risk assessment, testing, and audit of AI systems, overseen by the new regulator. This would include developing a “Lovelace” Code of Ethics,

similar to the Hippocratic Oath for medicine, for AI developers of a certain size, or those developing an AI system with high risk capabilities or sectors, to ensure the use of personal data and AI is unbiased, transparent, accurate, and respectful of people's right to privacy.

5.3.4 We would establish a wide-ranging consultation across all sectors to create clear objectives for AI systems to ensure they are defined and continuously reassessed for alignment with human values. This would include identification of 'red-lines', for tasks and roles deemed unacceptable to be filled by AI, for example, that determination of criminal and civil cases must be by a human judge and/or jury.

5.3.5 We would also strengthen the rights of the public with regards to AI and automated decisions, by:

- Maintaining existing rights under GDPR, the Human Rights Act and the Equalities Act.
- Introducing a Digital Bill of Rights, which would also ensure the enforceability of the rights set out in the new Council of Europe AI Framework Convention.
- Introducing the right to an explanation of how AI has generated an outcome which has significant consequences for someone's welfare.
- Introducing the right of redress and to appeal any decisions made by an AI.

5.3.6 Finally, the regulator would also be tasked with working with the sector to ensure sustainable, safe and ethical development of the industry and ensuring ease of adoption.

5.3.7 In the longer term, Liberal Democrats would strive to reach an international agreement on the regulation and governance of AI technologies. This might seem an impossible task in the current geo-political climate, but such agreements have been made on equally as important technologies. During the height of the Cold War, the USA and USSR both reached agreements on regulating nuclear materials. If agreement could be reached then, it should be possible to do so today.

5.3.8 As a first step, Liberal Democrats would negotiate the UK's participation in the Trade and Technology Council so we can play a leading role in global AI regulation, and work with trusted international partners in agreeing common standards for AI risk and impact assessment, testing, monitoring and audit.

5.4 Copyright Rules

5.4.1 Maintaining a balance between enabling AIs to develop and unlock their utility to society based on complex proprietary algorithms while defending the fundamental rights of those who create and own content to choose how their content is utilised is difficult. While the UK already has robust copyright laws, how those apply to a technology which can 'scrape' any information online is challenging.

5.4.2 The EU's approach has been to require creators to "opt out" from their works being used by AI and this seems to be the approach favoured by the Labour government. This approach is flawed for several reasons, mainly that explicitly opting out requires technical knowledge that will be beyond most individuals and small organisations reach.

5.4.3 Many of the leading AI companies have already said they have put in place robust mechanisms to ensure that, where rights holders say they want to opt out, they will respect this approach and avoid this material ending up in the 'corpus' (the bank of information from which an AI model is trained). However, these commitments are difficult to verify and there have been some notable cases where it appears rights holders' material has still been used against their objections.

5.4.4 It is clear that greater transparency is needed, but this must be done in a safe way, whilst making sure that developers knowhow and IP are themselves protected. In order to strike the right balance, Liberal Democrats would examine requirements for firms to have the duty to record the data and content used for training their AI models and appoint independent auditors with the ability to both assess whether they are meeting their commitments to protect copyright and to confirm to rights holders whether any of their material is, in fact, contained within the corpus on which an AI model is trained. The new regulator would be empowered to enforce these audits and impose remediation and sanctions where developers have failed to respect the rights of others.

5.4.5 By creating confidence in the transparency of AI models, we believe we can establish a firm basis for a subsequent review of copyright laws in an age of AI. Our guiding principles would be to protect and fairly remunerate the creative industry, whilst giving technology developers the space necessary to develop. This would include:

- Strengthening rules around copyright so that creators are treated fairly, with record keeping duties and robust, independent auditing of data and content use for AI developers.

- Appropriate and proportionate remuneration when their copyright material is ingested into generative AI models for training purposes and when they licence or transfer their rights.
- They derive the full benefit of technology such as AI made performance synthesization and streaming.
- Provide independent and SME designers with enhanced protections around design right infringement and from counterfeit products.
- Review copyright exhaustion rights to ensure that they do not undermine people's long term ability to protect their rights and works.

5.4.6 We would also introduce a new image and personality right into law. Everyone would have the right to their personal image, voice and personality being protected from impersonation by an AI, including after their death. Deepfakes produced without permission would be illegal. Such a right would continue to align with longstanding freedom of speech exemptions around parody and fair use.

5.4.7 In the longer term, an internationalist response will be required to govern intellectual property rights and AI, alongside wider AI governance and regulatory issues. Part of this would include ratifying the Beijing Treaty on audiovisual performances, which has already been ratified by most Western European countries.

5.5 Public Debate and Democracy

5.5.1 AI is close to being capable of impersonating public figures flawlessly - in October 2023 a AI created video appeared to show the Leader of the Labour Party Keir Starmer promoting an investment scheme -

which was in fact a complete fabrication. To the casual viewer, these videos would have seemed genuine.

5.5.2 We would start by implementing the recommendations of the Electoral Commission, with minimum standards of transparency in how the recommendation algorithms work and from whom content is originating. This would sit alongside our wider proposals to safeguard and strengthen engagement with our democratic processes.

5.5.3 As mentioned previously, for AI-edited and -generated images, videos and audio on social media, we would require them to be clearly labelled - much in the same way that political adverts have to be labelled with who paid for them. For content which is attempting to undermine public figures and democratic processes, such as the videos mentioned previously, would have to be removed as soon as they are found. However, this would not be sufficient for tackling bad faith actors who deliberately obscure their origins and intentions. Liberal Democrats would consider ways to mandate the adoption of the principles set out by the Coalition for Content Provenance and Authenticity (C2PA) initiative, including requirements to include trackable meta data in AI generated content.

5.5.4 Finally, we would undertake an extensive public awareness and education campaign on AI and what it can do - in line with the proposals in policy paper 145 *Democracy and Public Debate*.

5.6 Challenges to Adopting AI

5.6.1 Alongside properly regulating AI, Liberal Democrats would take steps to encourage its uptake among the private and public sector. We believe that it can help significantly to improve our economic performance

if adopted transparently and ethically, and to tackle many of the shared social problems we currently face. The anticipated economic benefits over this decade are significant with estimates predicting that the UK's GDP will be up to 10% higher in 2030 from the development and adoption of AI.

5.6.2 British businesses have already started adopting AI technologies. An Amazon Web Services survey has found that 39% of British businesses have already started using AI and 33% have said that AI has grown in importance since 2022. The UK is currently ranked third in the world as a destination for private sector investment in AI - with almost £11bn invested between 2013 and 2022. The technology is also exciting the public - with 59% believing that AI could help address big societal challenges like climate change.

5.6.3 However, there is a significant disparity between sectors - 68% of AI adoption has been in technology, telecoms, financial services, professional services and construction - with the remainder spread out throughout the rest of the economy. Likewise, AI adoption is concentrated in the more prosperous cities and regions with lower rates of adoption in Wales and the South West.

5.6.4 Tech UK has identified 5 main challenges to adopting AI, which are:

1. A digital skills gap
2. Insufficient computer infrastructure
3. Inconsistent data quality & accessibility
4. Lack of trust in AI
5. A limiting organisational culture & understanding of AI

5.7 The Skills Gap

5.7.1 A lack of digital skills is one of the main barriers to adopting AI technologies. Over the past few decades, technology has increasingly become “plug and play” with less skill required to install and make use of new technologies and programmes. AI requires more extensive skills than this. In particular, there is a lack of diversity in AI skills, with 70.5% of senior executive teams in the top tech companies having no members from ethnic minority backgrounds and less than 10% of UK tech workers being disabled.

5.7.2 In the previous chapter, and in the upcoming policy paper on Opportunity and Skills, Liberal Democrats have set out how we would tackle the wider skills gap in the UK economy. For AI, we would work with industry to develop clear pathways to develop skills and talent. We would also encourage the development of an industry wide diversity strategy to attract and retain more people from underrepresented backgrounds.

5.8 Computing Infrastructure

5.8.1 Computing infrastructure is vital for the deployment of AI technologies. Access to powerful computers, including super computers and data centres, is essential for many AI technologies. The UK’s global share of high performance computing capacity has shrunk by three fifths over the last five years.

5.8.2 Labour has failed to grasp this issue - cancelling Edinburgh’s Exascale computer project within weeks of entering office in a shortsighted cost saving measure. Liberal Democrats would enact a national strategy to develop the UK’s computing power, including developing our own version

of the US and EU Chips Act - so that Britain has a resilient supply chain of hardware and skills.

5.9 Trust in AI

5.9.1 One driver in a lack of trust in AI is its current unregulated nature and risks of bias and failure. A study by IBM in 2022 found that 74% of organisations had not taken steps to reduce bias in their AI systems, and 61% were not able to explain AI-powered decisions.

5.9.2 The steps taken to improve regulation of AI - including greater transparency, auditing, monitoring, clarifying rules over data rights and ethical governance - would tackle many of the issues relating to trust around AI. Greater rights to appeal decisions wholly or predominantly made by AI and to receive an explanation for any decision would also help build greater trust in AI among consumers and businesses. This is particularly important for decisions made in the Public Sector where greater transparency is required, with enhanced standards. We also advocate that a public register of AI applications is kept by public authorities using them for decision-making.

5.9.3 There are other drivers of a lack of trust in AI. One risk is that there is a concentration of power in the hands of a few developers. Big tech companies and closed models of AI – where the data is private and only the company that owns it can use it – are exerting increasing influence and making it hard for new businesses and open approaches to AI to get any prominence. This risks a lack of democratic oversight and key decisions about AI being, effectively, made in California rather than in the UK.

5.9.4 The establishment of the UK's AI Safety institute was a welcome step towards addressing some of the concerns around AI, but its remit doesn't go far enough. There needs to be a focus on ethics as well as purely on safety: to build public trust in AI it is essential that AI systems that are developed use data responsibly and don't entrench inequalities. We would ensure that the AI Safety Institute has a proper focus on ethics as well as safety.

5.9.5 We should champion open approaches to AI, to challenge concentrations of power in the market. This means, first, opposing moves to licence AI. This is, on the surface, attractive as a security measure – but limiting who can access new technology does not make it safer. Openness and accountability in the development of AI are key and any legislation should prioritise that. Second, it means investing in open source development by, eg, supporting an open source unit in government and creating an open source fund to support businesses to develop open source software.

5.9.6 Trust in AI can only be fostered if the public are aware of and understand when and how it is used in government and public services. We would implement mandatory transparency for the use of AI in government or public services, to ensure that every citizen and consumer is aware of when and how decisions affecting them are made or informed by AI systems, and where harms are a substantial effect, that a human alternative review is mandated.

5.10 Organisational Culture

5.10.1 The Liberal Democrats would implement the Law Society's recommendation for the requirement to establish an AI Officer role within

legal entities of a certain size, those operating in high-risk areas, or those developing an AI system with dangerous capabilities. The AI Officer should be equipped with a technical understanding of AI and a thorough knowledge of legal and ethical standards in a way which is aligned with any future data protection regime requirements regarding automated decision-making and profiling. The AI officer should also possess up-to-date knowledge of relevant technical standards and security controls. They should oversee and advise on the present and future risks of the design, development, deployment, and use of AI systems, inside their businesses and to the board, to ensure informed decisions. It will be important for AI Officers to have strong organisational support when needed including support from personnel who can handle whistleblowing issues if necessary.

5.10.2 Alongside the creation of this specialist role, we would also establish a comprehensive due diligence system that mandates organisations to proactively identify, track, and manage AI-related risks in consultation with the sector. We would set standards for independent audits for areas identified as high risk.

5.11 Data Quality and Accessibility

5.11.1 AI systems rely on data inputs: without data they cannot function. Even when data is of good quality, AI can interpret it in ways that are unproductive. For instance, during the COVID pandemic, an AI was used to detect risks for serious variants of COVID based on patient scans. Since patients who were seriously ill tended to be scanned lying down, the AI determined that lying down is the main risk factor in developing a serious case of COVID. Bad data going in leads to bad data coming out.

5.11.2 As part of our proposals to regulate AI, we would work with industry to develop common standards and procedures for data quality and usage - so that both developers of AI and its users have greater clarity and certainty over the data they are using to make their decisions.

5.11.3 Recognising SMEs' unique data challenges, we would establish channels for SMEs to access high-quality public data, promoting innovation and growth, and ensuring SMEs are represented in expert groups to provide first-hand insights. This would include legislating for greater data portability between services.

5.11.4 We would also, as part of our wider national strategy, take steps to encourage cross collaboration between end users and developers. In the example given above, clinicians who better understand how AI operates, or AI developers who better understand how medical settings operate, could have foreseen and avoided these issues. Going forward - skills and knowledge can't be siloed.

5.12 Conclusion - A Liberal Democrat National AI Strategy

5.12.1 Liberal Democrats would take bold action to ensure AI is well regulated and ethically used to serve the greater good - enacting a National AI Strategy to encourage the uptake of the technology.

5.12.2 We would introduce a robust regulatory environment, with legal standards on transparency, ethical governance, rights to redress and strengthening copyright laws, so that people's rights are respected, as well as giving companies greater certainty to foster investment, and challenge concentrations of wealth and power in the market. We would strengthen our democratic processes, and undertake a comprehensive campaign to

inform the public about AI and its potential uses, for boosting businesses and for potential harmful uses. In the long run, we would work internationally to forge a global agreement on the ethical use and regulation of AI.

Part 3: Fixing Our Public Services

6 Fixing Our Public Services

6.1 Introduction

6.1.1 Under the last Conservative government, Britain's public services rapidly deteriorated, with insufficient investment across the board. Our schools, hospitals, prisons and public realm are literally crumbling. This can be attributed both to incompetence and short-termism of the Conservatives, but also due to longer term structural problems with the British system of government. Labour lacks the vision to tackle these issues head on, preferring instead to operate under the same failed terms of reference as the Conservatives.

6.1.2 Liberal Democrats will tackle underinvestment in the public sector, making use of new technology to improve public services and ensure that people's rights are protected. We will fix our crumbling public services with a comprehensive public sector technology policy and investment plan, notably:

- Investing in skills, training and new technology across the public sector, with long term investment and planning.
- Improve health and care with a new approach to personal data, a new agreement with the European Medicines Agency and a comprehensive technology adoption programme.
- Ensuring our criminal justice system is able to make the most of new technology, with appropriate safeguards on AI to tackle biases and discrimination.

- Empowering local government, with investment in skills and training and a technology sandbox.

6.1.3 Although there are plenty of other areas where technology can be applied; these will be covered by future policy.

6.2 Long Term Investment and Planning

6.2.1 Britain under successive governments, particularly the Conservatives, has suffered from excessive short termism which has stifled investment and innovation in the public sector. This is due to a range of factors, including the way the Treasury and the Office of Budgetary Responsibility (OBR) undertake their analysis of proposals.

6.2.2 The OBR only forecasts over 5 years - so any long term projects are classified as delivering no benefits, incentivising short term policy making. The Treasury also discounts future savings or returns when considering spending proposals, preferring short-term savings over better long-term outcomes.

6.2.3 The UK has the shortest lifespan of fiscal rules in the developed world - ours last on average 3.8 years before being ripped up to meet the needs of the government of the day - New Zealand's last 13.5 years and France's nearly a decade.

6.2.4 Liberal Democrats support sound government finance. We would manage the public finances responsibly to safeguard the UK's economic prosperity and get the national debt falling as a share of the economy, ensuring that day-to-day spending does not exceed the amount raised in taxes, while making the investments our country needs.

6.2.5 To encourage better decisions, we would extend the time horizons of the OBR and Treasury forecasts to look at proposals for their whole lifetime. For instance, decade-long projects like HS2 make a minimal contribution to OBR and Treasury forecasts since they won't be completed within the 5 year horizons. This will give policymakers greater incentives and expertise to undertake long term projects and investments.

6.3 Investing in Expertise

6.3.1 Alongside short termism, Britain also lacks expertise in the public sector - with civil servants being incentivised to become generalists as career progression favours generalists rather than specialists. As a result, pay for experienced professionals such as commercial, project or supply chain managers in the private sector can be 30%+ higher than in the public sector. The Treasury is among the worst offenders, with staff typically having no economic or financial background and being poorly remunerated and inexperienced - with a quarter of staff changing each year.

6.3.2 In addition, the UK Government has developed an excessive dependence on the use of external consultants across all departments. This has accelerated in recent years under the Conservatives and is indicative of both a lack of investment in, and distrust of, the civil service. The UK public sector spent £2.8bn on consultants in 2022, three times as much as the French with a similar-sized economy and public sector.

6.3.3 The Liberal Democrats would invest in the skills and expertise of personnel and ensure that career development opportunities and rewards are enhanced to promote the recruitment and retention of staff with key specialist skills. In parallel, the use of, and dependence on external consultants will be reduced to save money and ensure that institutional knowledge and experience is retained. This will encourage long term

thinking - as well as facilitating better project management, procurement and investment decisions.

6.4 Delivering Technology the Right Way

6.4.1 Under successive Conservative and Labour governments, technological projects have often spectacularly failed, costing billions and failing to deliver change.

6.4.2 Under Labour, there was the failed NHS digitisation plan, and under the Conservatives a shambolic court reform programme since 2016, among others. Successive studies have found that over ambition, lack of consideration for end-users and poor project management skills in the public sector are among the causes of repeated failures.

6.4.3 Liberal Democrats would learn the lessons of the Conservatives' and Labours' failures - we would invest and deploy new technology working in collaboration with service users rather than ministers imposing systems and technology from above. Whether it is courts or the NHS, if the people using the technology aren't able to do so, or don't find it helpful, it will ultimately be a failure.

6.4.4 We would start with getting the basics right - replacing old, slow computers in the public sector with newer ones, which often have lower running costs. Many public sector organisations are running with software and hardware from nearly two decades ago, which makes it hard to modernise, easy to hack and slow to use, creating unnecessary delays and problems.

6.4.5 We would also ensure that new technology is deployed after a proper lead in time, where staff can be trained effectively in how to use it and where external users (such as barristers and judges using online court portals) are given clear communications and training on how the new systems will work and have the opportunity to properly feedback into its ongoing deployment and development. This would include better use of data, AI Assistants, predictive models and automated decision making - whilst ensuring transparency in its use and with meaningful human decision making in all processes.

6.4.6 We would also require high levels of transparency, accountability and ethical guidelines for the use of new emerging technologies, particularly AI, which go above and beyond the Algorithmic Transparency Recording Standard required in the private sector.

7 Health and Social Care

7.1 Introduction

7.1.1 Healthcare has rapidly grown in both its absolute and relative cost over the past few decades, with an ageing population and increasing numbers of people with complex needs. This has been a tremendously good thing for humanity; allowing people to live longer lives in good health is one of the greatest achievements of the past century. Technology offers tremendous potential to improve health and social care further, whilst lowering costs overtime.

7.2 Patient Data

7.2.1 NHS Patient data is currently not easily accessible - both moving within the NHS to different trusts and being accessible for medical research. Liberal Democrats want to make health data more accessible, whilst also ensuring that individual patient data is kept sufficiently private and only used for the public good.

7.2.2 Liberal Democrats would introduce a Health Data Charter which would establish the principles of how patient data should be used, as set out in policy motion Protecting Patients' Health Data - Creating a Health Data Charter and Sovereign Health Data Trust.

7.2.3 The Sovereign Health Data Trust will oversee public access to health data, ensuring it benefits patients and the public. Organisations seeking data must be approved by the Trust, which can revoke access at any time. Transparency is paramount: all data-sharing contracts must be publicly available, along with details about the organisations involved.

7.2.4 Public trust is essential, necessitating consultations and awareness initiatives to explain the benefits of data sharing. The NHS will retain the value of health data, with income generated from its use invested back into healthcare.

7.2.5 All health data will be held anonymously and accessed through a Trusted Research Environment (TRE), allowing individuals to opt out and ensuring compliance with agreed-upon data use. Consent processes will use clear, accessible language. We would further develop TREs as an effective and agile process for securely sharing data with researchers in line with the recommendations of the [Goldacre Review](#).

7.3 Medicines, Life Sciences and NHS Research

7.3.1 Medicine and treatment is a vital component of healthcare, and one in which the UK is a genuine world leader - with companies like AstraZeneca producing vaccines and pharmaceuticals that help millions of people stay healthy.

7.3.2 We have already set out our plans for university research, but we would also improve faster access to new and novel medicines and medical devices by seeking a comprehensive mutual recognition agreement with the European Medicines Agency. Clinical trials have had great success in developing App based platforms, and we would encourage the National Institute of Health Research to look at introducing clinical trials via Apps.

7.3.3 The NHS, with its vast amounts of data, medical expertise, facilities and staff, has tremendous potential for undertaking its own research. Building NHS research in the regions could open up significant opportunities for equitable participation in clinical trials, helping address health inequalities and drive forward both scientific progress and public

health outcomes. It is also good for NHS staff - with surveys showing that engaging in research improves job satisfaction; boosting morale and reducing burnout.

7.3.4 We would commit to sustaining the current levels of National Institute for Health and Care Research (NIHR) funding for the NIHR.

7.3.5 We would also fund an NHS research pilot where a proportion of NHS healthcare workers are offered a contract that includes dedicated time for research. Income generated through research activity in NHS and public health organisations would be ring fenced and reinvested in research, including backfilling time dedicated to research.

7.3.6 The decline of clinical academics is compounding pressures - we would work with universities, charities and the NHS to reverse this decline. This is particularly necessary at mid-career levels, where there has been a 25% decline between 2010 and 2022. Reversing their decline is vital to ensure a strong NHS, and investment in clinical academic careers must be effectively targeted to create more flexible career pathways, and recruit and retain this unique research workforce.

7.4 Adopting new Technology in the NHS

7.4.1 Alongside our wider plans to tackle the health and social care crisis, Liberal Democrats would ensure that the NHS has access to the technology it needs. We would harness the benefits of new technology and digital tools for patients by:

- Ring-fencing budgets to enable the NHS to adopt innovative digital tools that improve patient care and experience and save staff time and costs.
- Replacing old, slow computers to free up clinicians' time to care for patients.
- Requiring all IT systems used by the NHS to work with each other.
- Ensuring every care setting has electronic records that can feed into a patient's health record with the patient's consent.
- Expanding virtual wards and investing in new technologies that free up staff time and allow people to be treated at or closer to home.

7.4.2 We would also expand the NHS App to onboard more services which enhance the patient experience and access to healthcare, including GP bookings, single patient records, and wellbeing services.

7.4.3 Finally, we would increase funding available to the NHS AI Lab, and coordinate with the AI and Digital Regulations Service to ensure that multi-agency support continues for developing innovative programmes that support patients through improved pathways and ensure that healthcare workers are able to do their roles effectively.

8 The Justice System

8.1 Introduction

8.1.1 Ensuring that the justice system is able to function efficiently and effectively to uphold individual rights and the rule of law is at the heart of Liberal Democrat principles. We will ensure our justice system is ready to face the challenges and thrive on the opportunities that current and future technology bring, protecting the internationally well-regarded British Legal System and improving access to justice for the most disadvantaged in our society.

8.1.2 The introduction of new technology into the justice system, whether directly into public bodies, or via technology utilised by those providing legal advice, must be able to improve outcomes for clients and court users, not risk reducing their rights or quality of advice.

8.2 Adopting and Deploying New Technology

8.2.1 Liberal Democrats would make use of new technology ethically in our justice system and ensure the safety and preparedness of our justice system for the future delivering a system that the public have confidence in by:

- Requiring significantly higher standards, including a mandatory human element, to all AI technologies in the justice system.
- Introducing an urgent moratorium on the use of live facial recognition surveillance by the police and private companies, until we have a comprehensive legislative framework governing the circumstances in which it can be used. This would include

maximum protections for individual privacy and strict regulation on the adoption of the technology.

- Investing in new technologies in collaboration with service users to speed up the delivery of justice and improve accessibility for those who require additional support, including those with disabilities, vulnerabilities, and language needs.
- Consulting with the judiciary, the legal profession, the CPS, and court users to assess the impact of technology on evidence and ensuring that the court process has robust procedures and resources to safeguard against the impact of current and future technology on the quality and reliability of evidence.
- Ensure that all providers of legal advice have appropriate regulation in place to protect clients and ensure a clear delineation of liability and right of recourse for negligent advice, whether provided by human advisers or via a program or other type of automated delivery or LawTech, such as a chat bot, whilst investing in the availability of advice from a legal professional independent of technology.
- Ensure that confidentiality remains a core value within the legal profession, with sensitive information protected by legal professional privilege. It is crucial that this is protected in the future regulation of AI and in the use of AI systems.
- Enabling the justice system to deal with the impact of AI on liability for offences and protect victims by reviewing crimes and civil offences that involve an element of subjective mental state or intention to understand whether any such harm-creating activities should also be applied to AI, and what modifications would be required based on AI's lack of mens rea. We would use this to establish clear guidance for where the operation of any AI system, acting autonomously, could lead to a developer or system supply

chain participant fulfilling the necessary mens rea for a civil or criminal action.

8.3 Tackling Bias and Discrimination

8.3.1 Liberal Democrats want to rebuild public trust in policing: we want to see a police force that has the confidence of the public. As the Casey Review of the Metropolitan Police has highlighted, institutional racism, homophobia and sexism are prevalent in the force. We want to tackle all of these problems so that all of the public can once again put their trust in the police.

8.3.2 New technology can help improve the effectiveness of and efficiency of our criminal justice system - digital courts (where appropriate), modern prisons and better data on reoffending, among other technologies, can all make a contribution towards reducing crime, reducing reoffending and making the system more efficient and effective.

8.3.3 However, as discussed previously, bad data in will lead to bad data out. For the criminal justice system, this could easily result in historic racial, sex and class biases being fed into the decision making process - making discrimination in the system even worse.

8.3.4 Crucially, all automated decisions in the criminal justice system would require a human element - with a human making both the initial review of any case and the final decision. No one's liberty should be deprived on the basis of an algorithm.

8.3.5 Liberal Democrats would therefore put in place a robust framework for approving the use of new technologies where the life and liberty of the public is at stake.

8.3.6 For AI technologies we would require minimum standards of governance, including auditing of decision making, as well as giving the public the right to appeal decisions. For the criminal justice system and technologies that would potentially infringe on the essential liberties, we would require significantly higher standards and burdens of proof that the technology works effectively and fairly.

9 Local Government

9.1 Introduction

9.1.1 Local government is at the forefront of delivering public services: everything from bin collections and primary education through to social care. It provides vital services on which everyone relies. Strong and effective local government will also be crucial to delivering prosperity.

9.1.2 However, over a decade of Conservative government has left local authorities starved of resources, expected to deliver more and more with less and less. As such, many authorities are unable to take advantage of new technologies, lacking staff with the technical knowledge and the capacity to undertake new changes.

9.1.3 Alongside wider reforms to local government, Liberal Democrats would empower local government to take advantage and adopt new technology in how they deliver their services by:

- Giving councils greater powers and resources, so they have more capacity to innovate and invest
- Introducing a local government technology sandbox
- Investing in local authority skills to facilitate the adoption of new AI to improve services
- Introduce a national cybersecurity strategy, with a programme for local government

9.2 Promoting Innovation and Investment

9.2.1 Local government can be one of the most innovative and dynamic parts of the public sector - however, years of Conservative cuts have meant that many authorities don't have enough spare capacity to undertake innovation - they are stuck firefighting and making ends meet.

9.2.2 Liberal Democrats would undertake wider reforms to put local government on a more sustainable footing, most of which are beyond the scope of this paper. We would de-risk innovation and investment, as well as giving councils greater ability to plan their finances - moving from annual budgets to 5 year budgets.

9.2.3 To de-risk the adoption of technology, we would introduce a local government technology sandbox. The sandbox would be where new service models and technologies can be tested and evaluated on realistic mock-ups of key local government service. The sandbox would work by identifying challenges common to many local authorities, before reviewing existing approaches and calling for solutions from public, private and third sectors. The sandbox would then test the solutions that are presented in a small-scale setting, before reviewing how it performed.

9.2.4 This would significantly de-risk investment by facilitating testing and experimentation at a smaller scale than at an all country or authority wide level. It would also be possible to test and deploy new technologies and approaches much faster than if they were being used in a live setting, as well as allowing councils to quickly learn from one another - saving money and time.

9.3 Artificial Intelligence

9.3.1 AI in local government remains in its infancy, with many councils in the UK piloting various schemes with the potential to transform services. Abroad, AI is already being used to significantly improve local government services. For instance, Singapore has introduced a Chatbot called “Ask Jamie” which helps users find information and navigate government websites quickly. Sydney in Australia is using AI to speed up the planning process - allowing applicants to get preliminary assessments of applications, freeing up planners time and reducing costs to applicants.

9.3.2 These are just two examples of how AI could free up considerable resources in local government - but without the skills to use it local governments in the UK won't be able to take advantage of it. We would make grants available to local authorities to train staff in AI use and uptake, alongside the wider reforms outlined in the previous chapter to encourage the adoption of AI.

9.4 Cybersecurity

9.4.1 Liberal Democrats would enact a comprehensive strategy to ensure that the UK's digital infrastructure and vital digital technologies are secure. Local government, in particular, is not adequately funded for general digital protection. As a sector, it remains vulnerable. At the moment, very few full-time staff in local government work on emergency planning. Ignoring this threat leaves local community services – like GP surgeries, hospitals, police stations, schools, libraries, and magistrate courts – all vulnerable to digital attacks.

9.4.2 As part of this, we would introduce a local government programme of enhancing cybersecurity. Much of this will be about behavioural and cultural changes in staff and councillors. We would introduce a free training

programme for staff and councillors upon election, to achieve the culture shift that is needed as well as ensuring that funding is available for modernising software and hardware, as outlined previously.

9.4.3 We would also build greater resilience into the wider public sector, with a strong emphasis on building the public sector skills base, so that when problems arise they can be fixed internally as rapidly as possible, as well as through building redundancies into critical infrastructure and services, with appropriate spare capacity where needed.

9.6 Conclusion

9.6.1 Liberal Democrats are committed to championing localism and giving power to communities - we can only do that if the public have confidence in their local government. As part of our wider agenda to devolve powers and decision making, we would give local government the skills, tools, resources and the transparency obligations to make use of new technology and innovative new ways of delivering services. From chatbots helping the public access the services they need to AI helping reduce the burden on planning departments, there are a range of opportunities that we would enable local governments to take advantage of. At the same time, we would ensure that there is transparency of use, with meaningful human decision making

Part 4: Tackling the Challenges of our Time

10 Rebuilding our Economy: An Industrial and People Strategy

10.1 Introduction

10.1.1 Liberal Democrats would harness the power of technology to tackle the big social challenges of our time, notably:

- Generating sustainable, inclusive economic growth through a long term, consistent industrial and people strategy.
- Improving connectivity and digital infrastructure national investment in digital infrastructure and investing in local government.
- Tackling social inequalities, particularly gender, ethnic, disability and class inequality, so that science and technology bring benefits to all.
- Investing in green technologies to help mitigate and adapt to the climate crisis.

10.1.2 There is a role for government in making sure that the fundamentals of the science and innovation ecosystem – funding, skills and infrastructure – are all in place. In the previous sections we have set out how we would fund science in universities, support innovation in business and help universities and businesses access the right skills. It is also

important that government has, and communicates, a long-term vision for science and innovation so that industry has a sound basis on which to plan its investment. This is essential for achieving strong and sustainable economic growth.

10.1.3 A successful industrial strategy needs to coordinate policies across skills, research, infrastructure, taxation and trade. Industrial strategies work well when they focus on predictable long-term challenges – decarbonising the economy, the increase in digital working and an ageing society are all good anchors for an industrial strategy. AI too, as we discuss in the next part of the paper, while less predictable, also raises challenges that might be addressed in an industrial strategy.

10.2 Industrial Strategy

10.2.1 We recommit to the existing Liberal Democrat policy to establish a comprehensive industrial strategy in partnership with business, civil society (including trade unions) and academia, which is focused on tackling key economic and social challenges and developed collaboratively.

10.2.2 Our view is that an industrial strategy should prioritise tackling the climate crisis, increasing productivity and economic growth, boosting living standards and spreading prosperity to all regions of the UK. It should also provide a strategic framework for effectively addressing the needs of economically disadvantaged, remote or rural areas by collaborating with local, regional and devolved authorities – setting out how industrial regeneration and innovation would be supported across all UK nations and regions. It is especially important for the strategy to address ways in which AI can transform the economy and people’s lives for the better while also protecting against some of the risks.

10.2.3 An important part of the industrial strategy would need to be investment in infrastructure. This means both investing in infrastructure that is needed by specific sectors – with the aim of helping those sectors lower production costs. It also means investing in national infrastructure: investing in energy production to lower costs to businesses and investing in transport infrastructure in the areas required by the strategy.

10.2.4 Oversight of industrial strategy has chopped and changed under successive ministers and governments undermining business confidence; we would put the Industrial Strategy Council on a statutory footing, to ensure vital oversight, monitoring and evaluation of the industrial strategy for the long-term. To more effectively coordinate an industrial strategy we would explore ways to improve interdepartmental work on cross-cutting priorities, such as appointing a Minister for Industrial Strategy to attend Cabinet with powers to coordinate and implement the strategy.

10.3 Connectivity and Digital Infrastructure

10.3.1 As well as giving greater powers to local authorities to develop their economies, Liberal Democrats would also improve connections and infrastructure in and between parts of the UK. We would invest significantly in the rollout of superfast broadband across the country. We would ensure that gigabit broadband is available to every home and business, including in rural and remote communities, and support local bespoke solutions so that no property is left out. Working with industry and communities, we would set clear expectations and timelines for delivery.

10.3.2 Alongside broadband, we would also invest significantly in wider digital and connective infrastructure and make it easier for the private

sector to invest. For instance, the House of Commons Library has reported that 5G rollout has been delayed by needlessly expensive and complex planning and land access rules. We would simplify planning rules for essential digital infrastructure - speeding up the deployment of essential technology like 5G.

10.3.3 The UK currently has 517 data centres, worth \$14.64bn to the economy in 2023. Whilst this makes us the third largest country for data centres globally, the UK will shortly be overtaken by competitors who are investing more heavily, and pales in comparison to the United States's 5,375 data centres with nearly \$100bn a year to the US economy. New data centres are often hamstrung by lack of access to sufficient energy from the national grid, as well as planning rules more complex than other developed countries. We would invest significantly in grid connectivity, an essential part of the move to decarbonise our economy, as well as introducing full cost recovery for planning applications to speed up the process. We would also invest in technology to decarbonise data centres - so that their need for power is reduced alongside improved capacity.

10.4 People Strategy

10.4.1 Alongside a strategy for industry, we also need a strategy for people. Successive governments have downplayed the role of human capital and the role of the workforce in delivering social improvement and tackling shared challenges.

10.4.2 We see this across industries, from housing, energy to the justice system, Britain lacks a pipeline of staff, skills and expertise. Successive governments, particularly the current Conservative government, have adopted an approach of simply announcing targets, without considering

how they will actually be achieved. Throughout this paper, we set out a comprehensive people strategy for science and technology, starting from school all the way through to SMEs and large private sector companies.

10.5 Regional Inequality and Local Development

10.5.1 R&D spend is highly geographic - in 2021 52% of R&D spending was in London and the South East, whilst Wales had 46% less R&D per capita than the UK average. Rural areas were particularly left behind, seeing comparatively little research and development from the private sector.

10.5.2 The first step to tackling regional inequality in science and technology is to undertake a comprehensive mapping of the UK's strengths and weaknesses - there is not nearly as much data as there should be on the strengths and weaknesses of each part of the UK. Only when we understand our strengths and weaknesses can we look to build on them.

10.5.3 Labour and Conservative approaches to regional inequality are fundamentally flawed. Their approaches are based on central government inefficiently demanding competitive bidding from councils, and handing out one-off pots of money. This all too frequently boils down to ministerial whims distributing funds in an arbitrary manner and creating a 'begging bowl' culture. The Institute for Government has suggested that the process of central government largesse biases the process towards better resourced councils who can afford to spend more on their bids - exacerbating regional inequality rather than tackling it.

10.5.4 That's why Liberal Democrats would empower English local government and regions, for them to develop bespoke industrial and economic development strategies. For instance, Cornwall has many key

strengths in marine science and industry, whilst Berkshire has expertise in robotics and nuclear technologies. By empowering local authorities they will have the resources and powers to build on their strengths and address any critical weaknesses locally – in a way that is far more responsive than central government could ever deliver.

10.6 Conclusion

10.6.1 Liberal Democrats would deliver real economic prosperity up across the country. We would give real power to communities, rather than have them rely on central government benevolence. We would also invest significantly in digital and connective infrastructure, so that all homes and businesses have access to high speed broadband.

11 Social Inequality

11.1 Introduction

11.1.1 Britain has a wide range of inequalities based on gender, ethnicity, class and other protected characteristics in science and technology - ranging from different outcomes at school to employment later in life. This holds back our potential, coming at a great human cost as well as economic cost to the nation. Liberal Democrats want to tackle these profound inequalities wherever we find them; both because we believe in equality as a principle and because it will be better for our economy and society if everyone is able to achieve their potential.

11.1.2 Liberal Democrats would tackle social inequalities in science and technology by:

- Tackling the digital divide with local and national plans for digital inclusion.
- Ensuring that all universities work to widen participation by disadvantaged and underrepresented groups across the sector, prioritising their work with students in schools and colleges, and requiring every university to be transparent about selection criteria.
- Introduce a national programme of championing women in STEM.
- Introduce a comprehensive programme to improve representation of women and ethnic minorities in STEM.
- Get more children from disadvantaged backgrounds into STEM by investing in high-quality early years education and closing the attainment gap by giving disadvantaged children aged three and four an extra five free hours a week and tripling the Early Years Pupil Premium to £1,000 a year.

11.2 Digital Inclusion

11.2.1 Alongside measures outlined previously to tackle the digital divide in schools, we would enact a comprehensive strategy to promote digital inclusion among all people in the country. 1.7 million households had no broadband or mobile internet access in 2021. 2.4 million adults were unable to complete a single basic task to get online and 5 million workers will be acutely underskilled in basic skills by 2030. Broadband social tariffs suffer from persistently low levels of uptake, with only 5% of eligible households signed up.

11.2.2 Liberal Democrats would introduce a new Digital Bill of Rights, which will give all citizens essential rights to access public services, digital education and wider entitlements as part of their digital citizenship. This would underpin our approach to tackling digital exclusion.

11.2.3 The UK's current digital inclusion strategy is from 2014: Liberal Democrats would implement a new national digital inclusion strategy with resources, tools and guidance for local government to implement locally tailored strategies, to ensure that none are unable to access and use technology that is essential for modern life. Local communities will know best how to reach their residents – we would ensure that the resources are in place to make it happen. This would include programmes making use of public spaces, such as libraries and community centres, which can bring together many parts of the community who are often digitally excluded - particularly the elderly.

11.2.4 Nationally, we would undertake a programme of ensuring that all homes and businesses are able to access gigabit broadband, and tackle

wider computing and connectivity issues, as set out in the chapter on economic equality. We would ensure that all can afford this by introducing a more effective and generous social tariff for broadband to tackle digital exclusion, with automatic enrollment to tackle low uptake.

11.2.5 We would also undertake widespread public information and education programmes, so that people are able to understand and use new technologies. This will be particularly important as AI becomes more widespread and able to imitate real people.

11.2.6 Liberal Democrats also would tackle the main underlying causes of digital exclusion – financial and economic exclusion. In our last manifesto, we set out a comprehensive package of measures to tackle poverty. We would also introduce a national financial inclusion strategy, supporting banking hubs, in-person banking and requiring banks to provide support for customers who may lack digital skills in accessing their finances.

11.3 Gender Inequality

11.3.1 There is considerable gender inequality in the science and technology sector, starting at school and carrying all the way to the top. In the UK, only 27% of female students say they would consider a career in technology, compared to 61% of males, and only 3% say it is their first choice. 31% of core STEM students in Higher Education in the UK are women or non-binary – 20% less than their share of the overall population. In engineering and technology, they make up just 21%. Only 15% of people working in STEM roles are women and at the top end – only 5% of leadership positions in the technology sector are held by women.

11.3.2 This is driven by a range of factors – historic, social and economic. Liberal Democrats will take steps to address them and get more women working and studying STEM.

11.3.3 The fact that the industry is male dominated has become a self-fulfilling prophecy - 25% of women students say they've been put off a career in technology as it's too male dominated, 83% find it impossible to name a role model who inspires them in technology and only 22% can name a famous woman in technology.

11.3.4 As part of our wider drive to improve education, Liberal Democrats would ensure that all universities work to widen participation by disadvantaged and underrepresented groups across the sector, prioritising their work with students in schools and colleges, and requiring every university to be transparent about selection criteria.

11.3.5 This would include a comprehensive plan to increase the number of women teaching STEM at school, inspiring and encouraging more girls to study STEM. We would also introduce a national programme to champion women in STEM.

11.3.6 As part of our wider plans to strengthen rights in the workplace, we would give everyone the right to request flexible working arrangements from day one. There is considerable evidence that women in particular value flexible working, which will help encourage more to enter the sector.

11.4 Ethnic Inequality

11.4.1 Alongside gender, ethnic inequality is also prevalent in science and technology. There is considerable variation among different ethnic groups in Britain, with certain Asian backgrounds significantly outperforming their peers, and those from black backgrounds underperforming.

11.4.2 At university, white students are twice as likely as Black students to graduate with first class honours – 35.7% compared to 17.9% - and black students were roughly three times more likely than white students to leave their first degree with a third class qualification – 9.5% of black students compared to 3.2%. In academia, just 3.5% of black academic staff hold a Professor post, compared to 6.6% of Asian staff, and 11.9% of white staff.

11.4.3 Liberal Democrats would include a drive to increase teachers and students from disadvantaged and underrepresented backgrounds, with ethnic minorities and women being a priority. We would also require universities and colleges to put in place programmes to improve representation.

11.5 Disability

11.5.1 Research by the Royal Society has found that disabled people are significantly underrepresented across STEM at all levels, with disabled staff significantly less represented at senior levels.

11.5.2 The Liberal Democrats would include within our plans, a drive to investigate and increase engagement with STEM by disabled people at primary and secondary school, and ensure that barriers are not created by unequal or lack of support available within different geographical locations in the UK.

11.5.3 The Liberal Democrats would ensure that all disabilities and forms of neurodivergence are considered when investigating barriers to STEM education and careers, rather than adopting a 'one size fits all' approach. This would include specific investigations into differing areas of concern. For example, ensuring academic research labs are physically accessible, or

ensuring professional conferences where important networking often takes place are accessible to those with social and communication difficulties.

11.5.4 The Liberal Democrats would also ensure that technology is utilised to improve and increase access to education for those with disabilities both in STEM and nonSTEM subjects and careers. This would include investment into education institutions for the supply of learning aids and assistive technology, ensuring that new technology is available at speed.

11.6 Socio-economic Inequality

11.6.1 Finally, socio-economic background plays a huge role in determining outcomes and life chances in the science and technology industry. A recent survey by Teach First found that only two fifths of those from lower socio-economic backgrounds would consider a STEM career – significantly lower than the national average. Students from non-disadvantaged backgrounds are around twice as likely to take science or mathematics A levels compared with students from disadvantaged backgrounds – with a clear attainment gap at all levels.

11.6.2 Liberal Democrats have a proud record of tackling inequality in schools; it was the Liberal Democrats who proposed and implemented the Pupil Premium when we were in government, which provided greater funding for schools to tackle the attainment gap for the most disadvantaged children. Liberal Democrats would help get more children from disadvantaged backgrounds into STEM by investing in high-quality early years education and closing the attainment gap by giving disadvantaged children aged three and four an extra five free hours a week and tripling the Early Years Pupil Premium to £1,000 a year.

11.7 Conclusion

11.7.1 As well as being an injustice that holds back people's potential - a lack of diversity and equality in the science and technology sectors can have potentially catastrophic impacts on how technology is developed and deployed.

11.7.2 In 2010, Xbox released Kinect, a facial recognition software for playing video games. On release, the technology had difficulties recognising darker faces: it had clearly not been properly tested on non-white subjects. Although this is quite a niche example, since 2010 technology and automated decision making has been accelerated at a dramatic pace and similar issues recurring could cause harm. With AI making more and more decisions on our behalf, it will be essential that those developing and testing the technology come from a diverse range of backgrounds, so that technology can serve fairness rather than undermine it.

11.7.3 Liberal Democrats would enact a national programme to tackle inequality in science and technology – starting with initiatives at primary school and working with industry to promote greater equality at all levels.

12 Climate Change and the Environment

12.1 Introduction

12.1.1 The nature and climate crises are two of the biggest challenges facing Britain and the world; they represent existential threats to our way of life, prosperity and very existence. Liberal Democrats have long championed environmentalism and sustainability, and we recognise that technology and science are key to building a sustainable future.

12.1.2 Liberal Democrats would:

- Introduce a Food and Farming Innovation Fund
- Develop a long term plan for skills and training so we can deploy new green technologies and reduce our emissions
- Invest in adaptive technologies and research, so that Britain is better able to manage the impact of a changing climate

12.2 Food and Farming Innovation Fund

12.2.1 The food system is both essential for human life as well as one of the major causes of climate change and health problems. As set out in policy paper 154 *Food and Farming*, Liberal Democrats want to put our food system on a sustainable footing, which necessarily means investing in technology.

12.2.2 We would introduce a new Food and Farming Research and Innovation fund which would provide grants and low cost loans to farmers, food producers and those developing technology for the sector to spur innovation and development. This would help develop the UK into a world leader in emerging new technologies, like precision farming and alternative

proteins, which will be essential for feeding future generations. There are over 200 US firms developing AI technology for use in agriculture - cutting down the use of pesticides, fertiliser, water and fuels.

12.2.3 We would also introduce a fully-funded, well-resourced and responsive government advice service for farmers, which would provide training and support in using new and emerging technologies and farming practices, so that they can be taken up across the country.

12.3 Mitigation Technology

12.3.1 Many zero-carbon technologies such as wind turbines, solar cells and electric vehicles have developed swiftly, thanks to government support from the UK and other countries, but challenges remain in other sectors. Liberal Democrats would ensure that the development of zero-carbon alternatives is given a high priority in research and innovation support in areas such as aviation, food and farming, some industrial processes and carbon dioxide removal.

12.3.2 A major challenge with many zero-carbon technologies, however, is not the technology itself, but that the UK lacks the skills necessary to deploy it at scale. According to a recent report by PwC there is currently a green energy skills gap of around 200,000 workers - which is expected to grow over time. This significantly hampers the UK's ability to make use of existing technology, such as heat pumps, offshore wind and solar power.

12.3.3 This skills shortage has been driven by a range of factors - notably the UK's poor record of upskilling and reskilling workers after school, which is addressed in the upcoming policy paper on skills. It has also been driven by a lack of long-term policy making by the Conservatives - for instance

Rishi Sunak's scrapping of a variety of green initiatives, notably delaying the ban on sales of new diesel and petrol cars from 2030 to 2035, has undermined sector confidence and investment.

12.3.4 Liberal Democrats would bring together key stakeholders and develop a long term plan for jobs and training - so that the UK can take advantage of new technologies in the race to net zero. We would set clear milestones and stick to them - giving workers and businesses looking to retrain and invest greater certainty about their future.

12.3.5 Liberal Democrats would prioritise ensuring a just transition so that no one unduly loses out from moving towards a sustainable economy. This would include a comprehensive retraining and support scheme for those currently working in the old industries.

12.4 Adaptation Research and Technology

12.4.1 The UK, working together with partners overseas, must invest in technologies to adapt to the impacts of climate change and meet global emission reduction targets. As things currently stand, the world is likely to miss the target of limiting global warming to 1.5 degrees as set out in the Paris Agreement. Flooding, wildfires, heatwaves and storms will all become more common occurrences over the coming years. Wildfires in Surrey have doubled over the past 2 years as winters get wetter and summers get dryer. Therefore, the UK will need to ensure that we support the development of skills and technology to better respond to a more volatile climate. Liberal Democrats would invest significantly in improved monitoring and early warning systems - so that potential crises can be identified as early as possible.

12.5 Conclusion

12.5.1 Liberal Democrats would make use of new technology to tackle the nature and climate crises. We would help farmers develop new methods of production that work alongside nature to restore our natural habitats whilst also feeding the nation. We would ensure that we have a skilled workforce to deploy new technologies right across the country. We would also ensure that the transition to a sustainable economy is a just one, where no one loses out from the transition to net zero. Finally, we would make the necessary investments in adaptation technologies, so that the UK is prepared for a changing climate.

12.5.2 These topics will be explored in more detail in our forthcoming paper on climate policy.

13 Conclusion

13.0.1 The Liberal Democrats exist to build and safeguard a fair, free and open society, in which we seek to balance the fundamental values of liberty, equality and community, and in which no-one shall be enslaved by poverty, ignorance or conformity.

13.0.2 In this paper, we have set out how those principles can be applied to, and combined with, science, technology and innovation to build a vibrant and successful society in the mid-21st century. A society where the benefits of technological development are shared across all places and peoples, where public services are effective at meeting the needs of the people and where the big social challenges can be tackled head on.

13.0.3 We would build a strong fundamental base, investing in education, skills, universities and rebuilding co-operation and trust with our international partners, so that the UK has the people it needs to meet the challenges and needs of the future.

13.0.4 We would give the private sector the effective regulatory environment it needs, giving stability and certainty to investors and tackling concentrations of power in the market, ensuring healthy competition and corporate governance.

13.0.5 We would champion an effective and active state to take advantage of and properly regulate emerging technologies like AI, which safeguards the rights of individuals and promotes innovative ways of developing and deploying new technologies.

13.0.6 We would make full use of the most cutting edge technologies in the public sector, rebuilding our shattered public services by investing in skills, training and new technology so that we can get the public sector back on its feet.

13.0.7 We would harness technology to tackle the biggest societal challenges facing the UK today; building an economy that works for everyone, tackling social inequality and facing the challenges of climate change and environmental breakdown head on.

13.0.8 The Conservative and Labour parties lack the principles to achieve these aims; only the Liberal Democrats have the values and policies to build this vision of a bright and prosperous future for all.

Science, Innovation and Technology

Policy Paper 158

This paper has been approved for debate by the Federal Conference by the Federal Policy Committee under the terms of Article 7.4 of the Federal Constitution.

Within the policy-making procedure of the Liberal Democrats, the Federal Party determines the policy of the Party in those areas which might reasonably be expected to fall within the remit of the federal institutions in the context of a federal United Kingdom.

The Party in England, the Scottish Liberal Democrats, the Welsh Liberal Democrats and the Northern Ireland Local Party determine the policy of the Party on all other issues, except that any or all of them may confer this power upon the Federal Party in any specified area or areas.

The Party in England has chosen to pass up policy-making to the Federal level. If approved by Conference, this paper will therefore form the policy of the Federal Party on federal issues and the Party in England on English issues. In appropriate policy areas, Scottish, Welsh and Northern Ireland party policy would take precedence.

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Further copies of this paper can be found online at

<https://www.libdems.org.uk/members/make-policy/science-innovation-and-technology>



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