My Lords, it is a privilege to have been a member of the Select Committee undertaking this inquiry, under the expert chairmanship of the noble Lord, Lord Johnson. I will confine my remarks to technical and vocational matters, speaking as an engineer, having been in full-time practice for almost 30 years, and latterly as a professor of engineering at Cambridge University.

As well as having a general interest in the importance of education and equipping children with the skills they will need for life, my particular interest in the work of our Select Committee related to the education of potential future engineers and technicians. Our committee's remit was to

"consider education for 11 to 16 year olds with reference to the skills necessary for the digital and green economy".

The success of the digital and green economy in the UK will undoubtedly depend on many more of our young people pursuing technical careers. There is already an acute national shortage of engineers and technicians.

At the outset of our inquiry, our committee recognised the importance of the following two questions. First, how does curriculum reform ensure that all abilities are catered for? Secondly, is there a risk of pitching curriculum content too high or too narrowly? In the context of both questions it is very important to recognise the need for flexibility. There is a wide spectrum of technical education required to equip the country with the future engineers and technicians that we need. Education and skills for 11 to 16 year-olds must address the differing requirements for the next stage of their training, whether it be via higher education, further education college, university technical college or direct employment.

Higher education clearly has a key role in producing engineers. Our universities will need to continue to attract girls and boys into engineering, and there is the question of what skills are needed for 16 year-olds likely to apply at the age of 17 or 18 to university engineering courses. Those interested in digital technologies will need to go on to higher-level maths—A-levels or the international baccalaureate—together with advanced computer science, to equip them for AI, quantum computing and data analysis.

As for technologies for the green economy, at the heart of the new Government's agenda is making Britain a clean energy superpower, with zero-carbon electricity, by 2030. The Government's clean power mission plans major investments in wind and solar power, carbon capture and storage, hydrogen and marine energy, decarbonising the electricity system and long-term energy storage. Nuclear power will also be part of the energy mix. All of this will involve new and challenging technologies, needing many more university graduate engineers than we currently have. For those academically suited, it is important that the curriculum for 11 to 16 year-olds includes the right material to equip them for the next stage—typically A-levels—as preparation for entry to university courses.

However, it is most important to recognise that around 60% of our young children will not go to university. It seemed to our committee that the existing curriculum and the school performance metric, the EBacc, has been designed as if all children will go to university. Of equal importance to the university route are the routes through further education and apprenticeships, whether trained via FE colleges, UTCs and degree-apprentice courses, or direct employment. For these routes, in contrast to the entry requirements for university engineering courses, numeracy, rather than more conventional maths, and familiarity with computer technology, are of most importance. FE colleges and UTCs provide excellent computer programming and data analysis training. I witnessed this when a number of our committee visited the very impressive London Design & Engineering UTC, in east London. I am a huge supporter of UTCs, of which there are now 44 across England—the UTC being the innovative brainchild of the noble Lord, Lord Baker of Dorking. He was an active and influential member of our Select Committee, and it is excellent to see him participating in this debate.

Numerous industries, including the many connected with the green economy, will require a range of other practical skills, many of which are uniquely provided by UTCs and FE colleges. It is the lack of technical and vocational opportunities during the 11 to 16 phase that particularly concerned our committee. Without exposure to these opportunities at an early stage, the door to a technical career is already closed in the minds of many young people. Closing the door to technical careers at such a critical stage is very damaging to the future prosperity of our country.

It is highly significant that, in Germany, 20% of 25 year-olds have a higher technical qualification, whereas in the UK the present figure is only 4%. That is because, in Germany, there is a much wider range of opportunities in technical education for young people, and this starts at an early stage. There is much more flexibility in the German educational system; the more academic pupils go on to university, while others go to FE colleges, and others become apprentices. There is a wide spectrum, highly regarded by schools and parents alike, with opportunities for all.

In this country in recent years there has been a substantial decline in the number of pupils taking technically-related qualifications at key stage 4. Entries for GCSE design and technology have fallen by more than 70% since 2010, and in 2023 the subject was taken by only 12% of all pupils. Take-up of GCSE engineering has also fallen dramatically. The evidence our committee received indicated that the 11 to 16 curriculum is overly focused on academic learning, with technical and vocational education insufficiently valued. This is a serious imbalance, particularly for those pupils not suited to university.

To rectify this imbalance, Andy Burnham, the Mayor of Greater Manchester, proposes to introduce a Greater Manchester baccalaureate—the MBacc—which would focus on technical careers and sit alongside the academically-orientated EBacc. The evidence he gave to our committee was compelling. The subjects included in the MBacc would be designed to

steer young people on the technical route, preparing them for jobs in the key sectors of the Greater Manchester economy: manufacturing, construction and health.

Our report recommended that the Government should engage closely with this MBacc proposal—a key stage 4 subject combination focused on technical careers—as an alternative to the EBacc. In their somewhat lukewarm response, the previous Government partially accepted this recommendation, while saying that schools are already able to make decisions about the technical qualifications they offer their pupils. However, the reality is that subjects falling outside the EBacc—most notably the all-important creative, technical and vocational subjects—have seen a dramatic decline in take-up. This is largely because schools have had to adjust their timetables to focus on a limited set of traditionally academic subjects associated with the EBacc performance metric. There is an overburdened curriculum and little scope to engage with topics beyond it.

In summary, we are in the midst of a digital revolution and dramatic technological changes as this country aims to become a green energy, zero-carbon superpower. It is therefore crucial that we attract more engineers and technicians. Vocational and technical options must be more readily available to all those pupils likely to go to an FE college, or a UTC, or directly into employment. There is a danger of attempting to generalise the national curriculum, and of pitching its content too high and too narrowly. There should be options for different choices available to pupils pursuing different post-16 routes. Curriculum reform and school performance measures should reflect this. The key requirements are a broader curriculum and, above all, as so well put by the noble Lord, Lord Knight, flexibility.