

# ENGINEERED IN BRITAIN MANUFACTURING A SUCCESSFUL ECONOMY?

Institution of  
**MECHANICAL  
ENGINEERS**

Improving the world through engineering

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**ONLY 19% OF ENGINEERS  
BELIEVE GOVERNMENT  
POLICY IS HELPING UK  
MANUFACTURING.**

“”

**ONLY 26% OF THE  
PUBLIC BELIEVE THE  
GOVERNMENT IS  
COMMITTED TO  
CREATING A MORE  
BALANCED ECONOMY.**

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Published May 2012.  
**Design:** teamkaroshi.com

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# MANUFACTURING A SUCCESSFUL ECONOMY

This month marks the UK Coalition Government's second full year in power. Worryingly, since the launch of the Institution's Engineered in Britain campaign in May 2010, the UK has continued to be dogged by sluggish economic growth. Worse, there are growing concerns about stalling manufacturing output and lack of a clear industrial strategy for manufacturing for the next 20 to 50 years. And we are not yet out of this recessionary cycle.

Manufacturing continues to contribute only 12% of Gross Domestic Product (down from 20% in 2000 and 30% in 1970) with signs indicating this downward trend will continue.

On a global scale, it is disappointing to see the UK's CEBR global economic ranking fall once again, to seventh place, after being overtaken by Brazil. Many factors such as population, natural resources and location can contribute to a country's economic ranking. However, not one developed or developing economy in the world's top ten has reached its position via its financial or service industries. Each nation which is either above the UK, or continuing to enjoy strong growth, is succeeding on the back of manufacturing. Is this something which the UK has forgotten or just decided is too hard to achieve?

For UK manufacturing, the last year has provided signs of hope as well as dismay. Early expectations that manufacturing would pull the UK out of recession seem to have been misplaced. Many companies have concerns about their future order books. The sector has seen little or no growth over the past two years.

There are, however, small rays of hope. There are examples of manufacturing in which the UK is excelling. The automotive and aerospace sectors continue to outperform the rest of the economy.

Vauxhall, Jaguar Land Rover and Nissan have all announced new model production in the UK, boosting the UK automotive sector and its supply chain. We are now exporting more cars than we import for the first time since 1976.

Over the last two years through the Engineered in Britain campaign, the Institution has been promoting the value of UK manufacturing to our economy. Our report on Aerospace in 2011 examined the value of this highly innovative and valuable sector to UK manufacturing, and the risks we face from other nations wanting to take a greater share of this market.

Last May, the Institution launched its first 'Manufacturing a successful economy' survey. Seeking the views of engineering professionals and members of the public, the survey has become an annual barometer of the performance of the manufacturing sector and the Government. This year's survey, covered in this report, is a call for action. It confirms the desire of the engineering profession and public at large for an industrial strategy that can deliver a revitalised manufacturing sector in Britain.

During the 2010 General Election campaign, all political parties pledged their support for the UK's manufacturing sector and spoke of the need to rebalance the economy. Turning this pledge into reality is not easy, yet it is made all the more difficult without the far-sighted policies and cross-party co-operation that our manufacturers are crying out for. The warm words we have been hearing for the past two years are starting to wear thin. It's time for the Government to back them up with a long-term industrial strategy that can put UK manufacturing, once the envy of the world, back on top.



**Professor Isobel Pollock**  
President, Institution of Mechanical Engineers



# KEY FINDINGS

The 2012 survey results indicate that manufacturers and the public perceive there to be a strong disconnect between the actions and messages of Government on the issue of manufacturing.

**Questions 1–6:** Since the 2011 survey, confidence in Government actions to create a more balanced economy has fallen 11% for manufacturers and 47% for the public. Furthermore, manufacturers recorded a 46% drop in support towards Government policy in manufacturing compared to 2011.

There is also a continuing belief that the Government is more committed to the financial sector than to manufacturing (80% of manufacturers and 56% of the public). This is reflected in only 37% of manufacturers and 10% of the public being confident about the future of the sector.

**Question 7:** There is overwhelming support for Government to favour British based companies when awarding contracts even if this is a more expensive option (77.5% of manufacturers and 72% of the public).

**Questions 8–13:** Manufacturers believe the nation's regulatory environment, labour costs and tax regime are potential barriers to investment in UK manufacturing. Manufacturers polled are concerned that increasing energy costs, the Eurozone crisis and the state of the UK economy could affect their businesses.

**Question 14–17:** Manufacturers have indicated a strong uptake in recruitment with 76% currently seeking more staff. However, 41% are struggling to find people with the right skills, with 63% finding recruitment of Chartered and Incorporated Engineers a particular issue.

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**UK MANUFACTURING  
NEEDS A LONG-TERM  
VISION AND AN  
INDUSTRIAL STRATEGY  
SUPPORTED BY ALL  
THE MAIN PARTIES.**

# ENGINEERED IN BRITAIN: RETHINKING THE FUTURE OF BRITISH MANUFACTURING

The UK has a proud engineering and manufacturing heritage spanning three centuries. During this time our engineers have developed new products and processes that have changed and improved the way we live and work.

For over 30 years, the UK's economic growth has been dominated by the financial and service sectors. Engineering and manufacturing now only represents about 12% of national output.

With the recent financial crisis, we have seen that over-reliance on any one sector can have serious and damaging economic consequences. Yet some countries have been more resilient during the recession; why?

## A Balanced Economy

Countries such as Germany have successfully operated a balanced economic policy for many years. This policy ensures no one sector dominates the national economy and builds in resilience during a recession. Is now the time for the UK to adopt a similar approach to economic planning?

UK manufacturing generates wealth and employment, directly through the value of what it makes, and indirectly through associated economic activities. By better balancing our economy, we could narrow our trade deficit, increase exports, create employment across the nation and possibly be more resilient to future economic downturns.

## Talent to Succeed

Key to our future manufacturing success is by having a growing pool of engineering talent. We have some of the most creative, successful and best-trained engineers and technicians in the world. The UK is home to some of the most cutting-edge research and technical knowledge, and the country produces more patents than almost any other nation. Our talent and enthusiasm for innovative and high-quality engineering has encouraged many foreign companies to choose the UK as their operating base.

We must harness this talent and promote the value, legacy and opportunity that British engineering and manufacturing provides.

## Engineered in Britain Charter

In 2010, the Institution published the Engineered in Britain Charter. Through this we are gathered support from UK organisations which also realise that engineering and manufacturing are the basis of future UK prosperity, of higher employment levels, and of a more resilient and balanced economy.

The Charter has three principles:

### 1. A balanced economy is a stronger economy

All sectors of the UK economy are valuable and balance between these sectors is important. A healthy engineering and manufacturing base is important to any economy, and we must ensure that this sector forms a sufficient proportion of the overall economy to help create economic resilience.

Industry and Government must work together to increase engineering and manufacturing's share of the economy.

### 2. We must plan together for success

Projects are more successful with planning and stakeholder buy-in. A plan for growth must focus on education & skills, taxation & incentives, research & development, key infrastructure development, future economic prospects and the green economy.

Many of these elements already exist; however they lack focus and coordination.

The Institution is working with key partners to bring companies, Government, engineers and other relevant parties together to develop consensus on a roadmap and help increase the proportion of the economy made up of manufacturing.

### 3. We must contribute to our own future

Any developed nation wishing to maintain economic resilience through wealth creation needs a strong and sustainable science & engineering base. Central to this is the ability of the science, technology, engineering & mathematics (STEM) graduates it produces. The Government has already identified engineering as a strategically critical profession.

Companies and professional institutions must proactively engage with the Government and education providers to help create a supply of well-trained and motivated engineering graduates.

## Survey Methodology

As with the 2011 Engineered in Britain survey, the Institution sought the views from 1,000 professional engineers (referred to as 'manufacturers' in this survey). In addition, to ensure the research was balanced, a poll was also conducted with 1,000 members of the general public.

Both polls were undertaken independently and anonymously, with MSS Research conducting the manufacturers' survey and ICM the public research. Both were telephone polls completed in April 2012.

Survey questions were in the areas of:

1. Performance of the Government and manufacturing
2. Growth of the manufacturing sector
3. Skills and jobs

For a number of the questions, the views of both the public and manufacturers were sought. It has been noted where questions sought only the opinion of manufacturers.

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**THERE IS  
OVERWHELMING  
SUPPORT FOR  
GOVERNMENT TO  
FAVOUR BRITISH-BASED  
COMPANIES WHEN  
AWARDING CONTRACTS.**





**Pelamis: the world's first wave energy company to deliver electricity from offshore wave power to the national grid**







## PERFORMANCE

The first six questions of the report are designed to establish the views of manufacturers and members of the public on the Government's performance in running the economy.

Throughout 2011 and the first quarter of 2012, economic news has been less than encouraging. The ongoing Euro crisis, concerns of a slowdown in the USA and the UK's quarterly growth results at near 0% have raised concerns from industry and the public alike. The disappointing economic results in April 2012, which showed that the UK had entered a double-dip recession, have exacerbated worries about the country's future growth strategy.

### Questions 1–3

Both manufacturer and public samples were asked if the Government was committed to creating a more balanced economy and if its policies were helping UK manufacturers. Year-on-year results will not make comfortable reading for the Government.

On balancing the economy, only 31% of manufacturers believe the Government is committed to this idea (down 11% from 2011). The public was less forgiving with a 47% drop in those believing the Government was committed to the idea of rebalancing the economy (49% in 2011 – 26% in 2012). When asked if the Government was more committed to the financial sector, 80% of manufacturers and 56% of the public agreed with this statement.

### Institution Comment

The Government is in a difficult position. For the UK to prosper in the future, we need to cut our deficit. However, cutting the deficit is only one part of the process. We must prune areas where cuts can be made, but we cannot let industries starve.

With some simple changes to incentivise production, research & development and exporting potential, the manufacturing sector could see a boost in its orders and growth potential. More direct actions and policy incentives may cost the Treasury today, but will pay dividends many times over in the future.

The UK manufacturing sector needs to invest more in its R&D, machinery and processes to help develop innovative products, increase efficiency and improve competitiveness. UK investments in these areas lag well behind our main competitor nations such as Germany, which invests 47% more in R&D as a percentage of GDP and invested \$5bn on machine tools in 2010 compared to \$0.4bn in the UK. The UK needs to establish a long-term vision and an industrial strategy for manufacturing, and move away from headline-grabbing stop-gap measures which rarely benefit sectors long-term.

The majority of all those polled still see the Government as more committed to the financial sector than to manufacturing. A solid industrial strategy would go a long way towards convincing them otherwise.

### Question 4

We asked manufacturers and the public to judge the Government's performance in Education & Skills, Manufacturing, the Economy and the Environment.

From the manufacturer sample, there has been a marginal improvement in most of the policy areas since 2011. There was a sizeable improvement on environmental policy where 31% of those questioned, compared with 20% last year, deemed the Government to be performing well.

On the public sample, more people said the Government was performing well compared to the manufacturers – although again well below the 50% mark. The only exception to this was the economy question where positive performance fell from 31% in 2011 to 27% in 2012. It is also the only percentage rating below that of the manufacturing sample across all four areas.

### Institution Comment

On education and skills, we see the Government has worked to generate employment opportunities and to counter growing youth unemployment. The Institution strongly supports Government efforts to develop more apprenticeship opportunities, however we caution the creation and heavy promotion of short-term 'placements' compared to long-term 'apprenticeships'. Although both help people gain skills, low-quality placement schemes can damage the reputation of high-quality, long-term, skilled apprenticeships that are offered by manufacturing companies.

The Institution is disappointed with the review into the Engineering Diploma and the possibility that its GCSE equivalency value may be downgraded. It is our belief that any downgrade would be a backward step in promoting engineering and encouraging the next generation to pursue this worthwhile career. We strongly urge the Government to reconsider its position.

The Institution has concerns that changes to careers advice for 14 to 19 year olds introduced in April 2012 will not help the understanding and awareness to future generations of the full range of STEM vocations available.

Government campaigns such as 'See inside manufacturing' are steps in the right direction, but need to be rolled out across other manufacturing industries.

On manufacturing policy, the low approval ratings from manufacturers and the public reinforce the results of questions one and two. With just 14% and 19% respectively saying the Government is performing well, the Government needs to do more to develop and promote its policies.

On the economy questions, the Institution believes the focus on reducing our national debt today may be deterring some long-term initiatives to stimulate growth in vital sectors of the economy. In addition, the UK has some successful 'jewels' such as its aerospace, automotive and information & communication technology industries which could move elsewhere if not given enough support in the UK. Once gone, there will be little to no chance of getting them back.

#### **Question 5**

For the 2012 survey, we asked both samples for their views of the Government's performance in the areas of energy policy, taxation, transport policy and regulation.

With both samples there was never more than 25% of people who said the Government was performing well. The number of people who thought the Government was performing badly on these policies ranged between 25% and 59%.

#### **Institution Comment**

Energy policy is a key theme of the Institution and we strongly advocate an energy policy which embraces energy demand reduction, renewables, nuclear and carbon capture and storage. However, the disappointing results from the first phase of nuclear build is a concern. The UK developed the first commercial nuclear power station, yet the Institution fears that much of the work today is being commissioned overseas with limited access or opportunities for British-based companies. A reliance on international companies means we are at risk of overseas policy affecting domestic energy security – as shown when RWE pulled out of the UK's new nuclear programme, based on a decision in Berlin to discontinue domestic nuclear build.

On taxation, the Institution believes more incentives could assist the growth of the manufacturing sector. The level of approval for the Government's performance may have suffered due to the recent budgetary decisions and focus on the taxation of high earners.

The Institution strongly believes that there needs to be an all-party consensus on an integrated transport network for the UK. Our transport infrastructure needs to be robust if UK plc is to be attractive to investors. The time wasted at the planning stage of new infrastructure developments must be reduced. The Government must embrace UK industry and use our experience in ICT to make the transport network more intelligent.

On regulation, the Institution supports the idea of one-in one-out to help limit regulation.

#### **Question 6**

This question asked manufacturers and the public how confident they are about the future of UK manufacturing since the Government came to power.

Manufacturers continue to be pessimistic about the future of the sector with only 37% believing in a positive future (38% in 2011).

In the public sample, this was the first year we asked this question with 43% expressing less confidence in the future of manufacturing.



## GROWTH

This section focuses on what can be done to grow the UK manufacturing sector. As many of the questions related to specific industry-focused initiatives, a majority of the questions were put only to the manufacturer sample.

### Question 7

This question was developed in response to the 2011 decision by the Government to award the £1.4bn Thameslink train fleet contract to Siemens in Germany instead of UK-based Bombardier. Although the Institution will leave the reasons for the Government's decision to be debated by others, this question was designed to gauge feelings from manufacturers and the public on the question of sourcing home grown goods.

When asked if the Government should favour British-based companies when awarding contracts, even if the costs are higher, 77.5% of manufacturers and 72% of the public were in favour. This statement has the strongest support from both manufacturers and the public of all the statements in the 2012 survey.

#### Institution Comment

The option to 'buy local' is possible as long as the product is of equal quality, within a 'reasonable' cost range, and that it can be demonstrated that awarding the contract can help develop the supply chain, secure jobs and improve prosperity for the local and regional community. Overall, more considerations should be taken when negotiating tenders than just the bottom-line cost.

### Question 8

On the future growth of the manufacturing sector, the manufacturer sample is split three ways, with 37% forecasting a growth in its proportion of GDP against 32% seeing a decline and 30% believing it will stay the same. The public were slightly more pessimistic with 40% predicting a continuing decline to 23% growth and 32% remaining the same.

### Questions 9–13

When asked if cuts to corporation tax, increased capital allowances or R&D tax credits would encourage more investment in their businesses, tax credits proved the most popular measure, registering about 50%. Yet all the incentives were seen as less effective than they were in 2011 by about 19%.

On possible incentives introduced by Government to boost the sector, changes to the taxation system were most popular at 43%. However, the recently discussed idea of a 'Bank for Industry' polled poorly, with only 20% of the sample supporting this idea.

On individual areas which affect investment into UK manufacturing, the regulatory environment (51%), labour costs (54%) and tax regime (63%) all ranked as having a negative effect. Areas which ranked as having a positive effect were exchange rates (43%), skills (48%) and infrastructure (49%) – albeit none above the 50% threshold.

Finally, when asked which areas of concern manufacturers had about their business, they replied increasing costs of supplies (50%), bank lending (50%), the state of the economy (53%), the Eurozone crisis (54%) and increasing energy costs (58%). Of least concern were exchange rates (27%) and increasing labour costs (38%).

## SKILLS AND JOBS

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Questions in this section of the report were solely focused on the manufacturer sample and relate to employment opportunities in the sector.

### Questions 14–17

It is encouraging that 76% of manufacturers asked were currently recruiting, compared with 61% in 2011. There has also been a positive response in manufacturers finding people with the right skills – up from 41% in 2011 to 47% in 2012.

When asked specifically about the recruitment of engineers at all levels, 63% of respondents stated they were struggling to recruit suitable Chartered and Incorporated Engineers.

Finally, manufacturers were asked if any incentives from Government would help them take on more apprentices. All three options received support from the majority of those surveyed: reduction in corporation tax (61%), National Insurance breaks (65%) and training levy refunds (55%); all showed increases from 2011 (53%, 58% and 50%).

In 2011, the most popular option for this question was a £3,000 bonus on completion of apprenticeships (63%). In 2012, this option received 58% support, still popular but now overtaken by National Insurance breaks for apprentices (65%).

A reduction of the minimum wage was supported by only 12% of respondents.

### Institution Comment

It is encouraging that many manufacturing companies are increasing headcount. It is also encouraging that companies are finding people with the appropriate skills, although we have to remember that the unemployment pool is also greater than last year, so there are likely to be more applicants for each vacancy.

Of greater concern is that 63% of companies are struggling to recruit Chartered or Incorporated Engineers. The Institution has for many years called on Government to incentivise and prioritise the need for the UK to develop a sufficient pool of engineers to meet future needs. We are beginning to find sectors of our economy lacking the required number of engineers and increasing tuition fees could further stifle the number of future engineers.

For the UK to ensure it does not rely on overseas engineering talent to meet future needs, we need more young people to consider STEM subjects at school, college and university levels. The Institution has been successful in promoting the value of professional registration, increasing its own membership from 75,000 to 100,000 in under five years. Yet we know we need many more engineers over the next decade to replace retiring engineers and meet growing demand.



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**The UK pharmaceutical industry employs over 70,000 people, contributes £8.4bn to the UK's GDP and invests nearly £4bn in research and development**

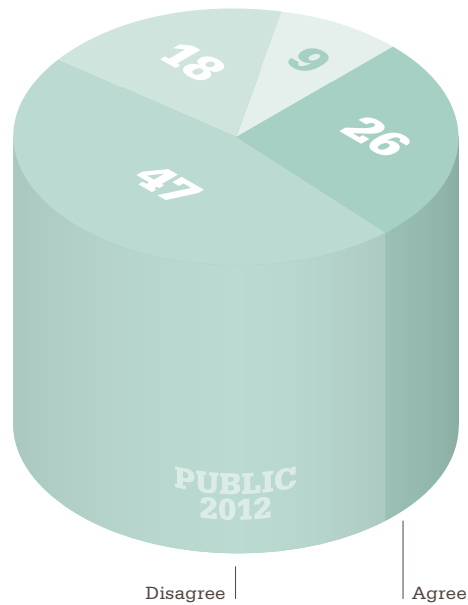
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Q.  
A.

1. The Government is committed to creating a more balanced economy by growing the UK manufacturing sector?



**Q.**  
**A.**

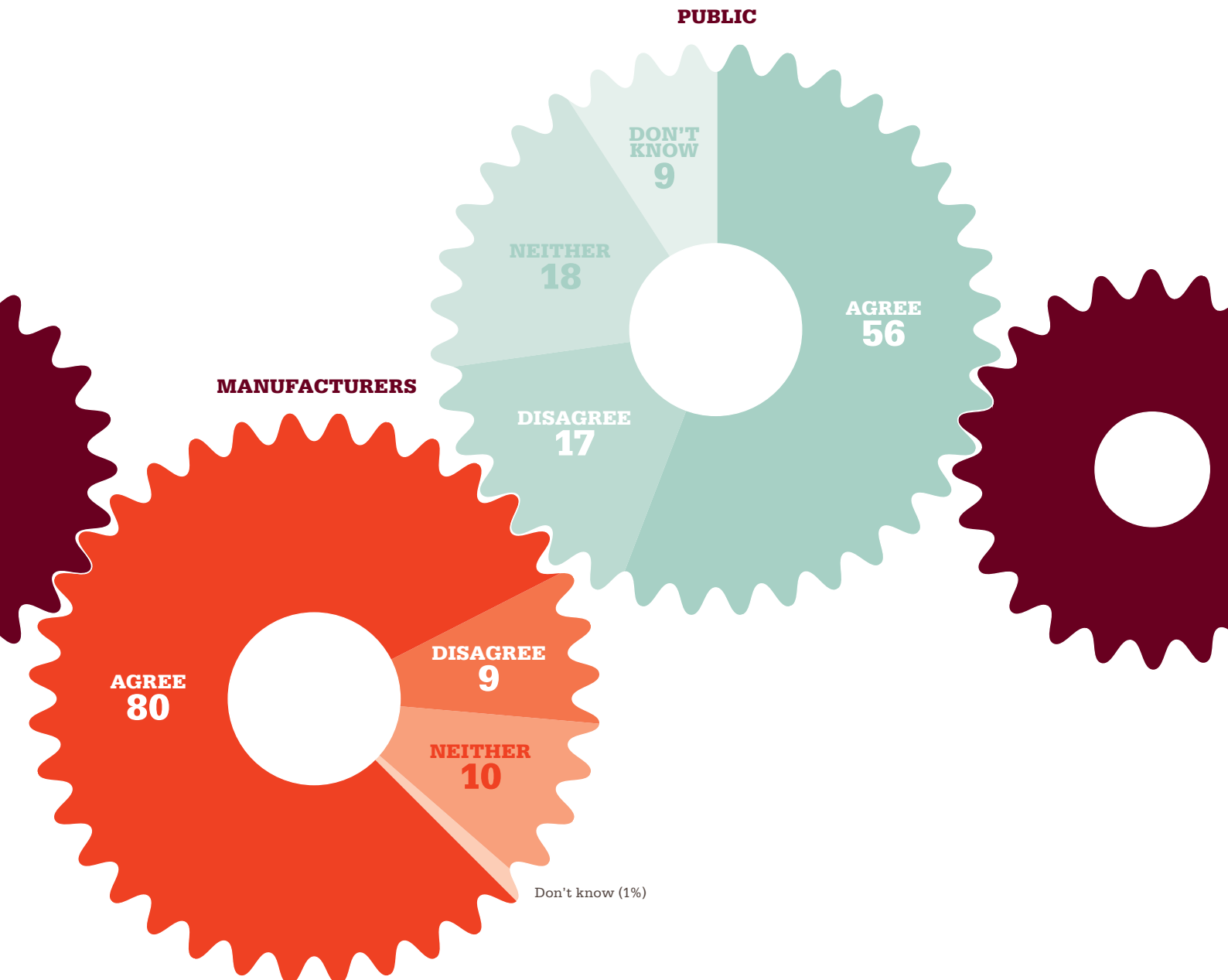
2. The Government's policies are helping UK manufacturers?





**Q.**  
**A.**

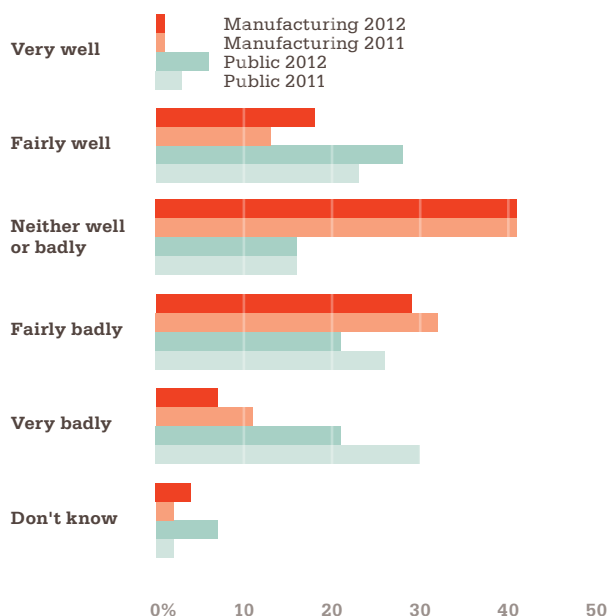
3. The Government is more committed to the financial sector than it is to manufacturing?



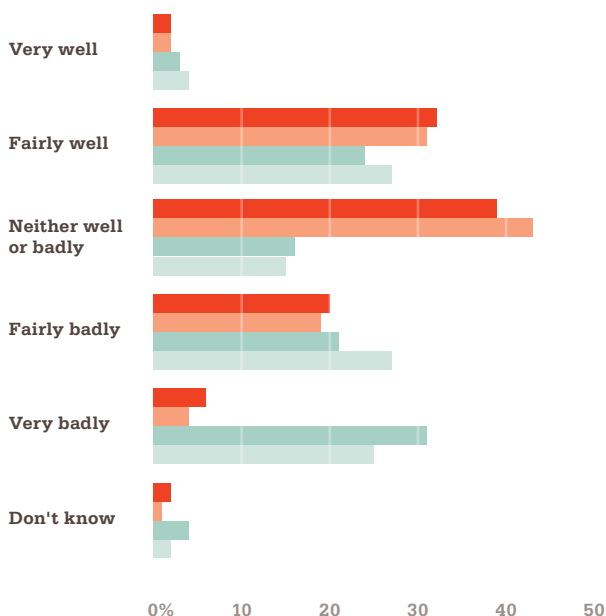
# Q. A.

4. Please state how well or badly you feel the Government is performing on each of the following policy areas.

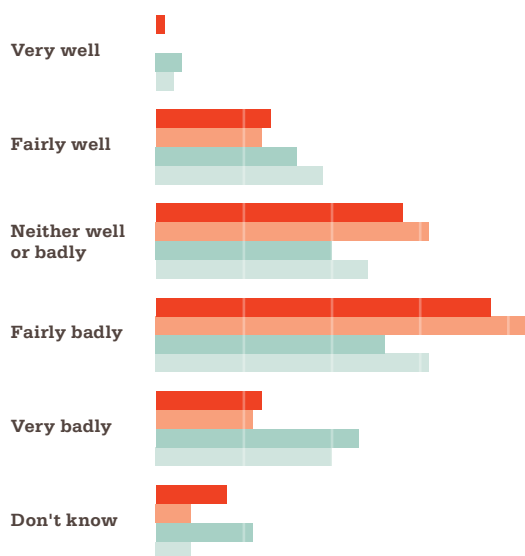
## EDUCATION AND SKILLS



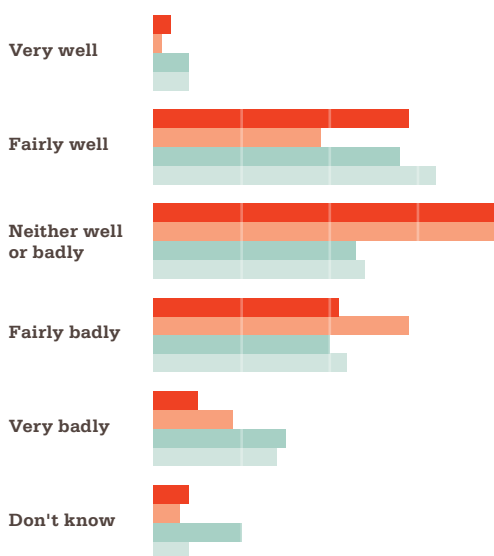
## THE ECONOMY



## MANUFACTURING POLICY



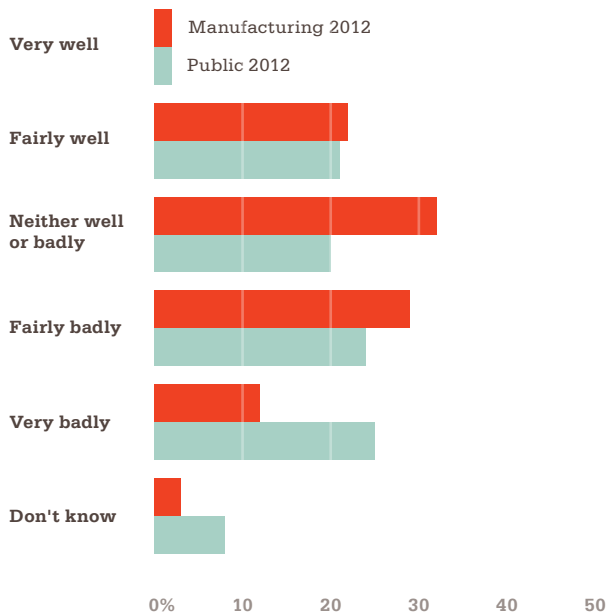
## ENVIRONMENTAL POLICY



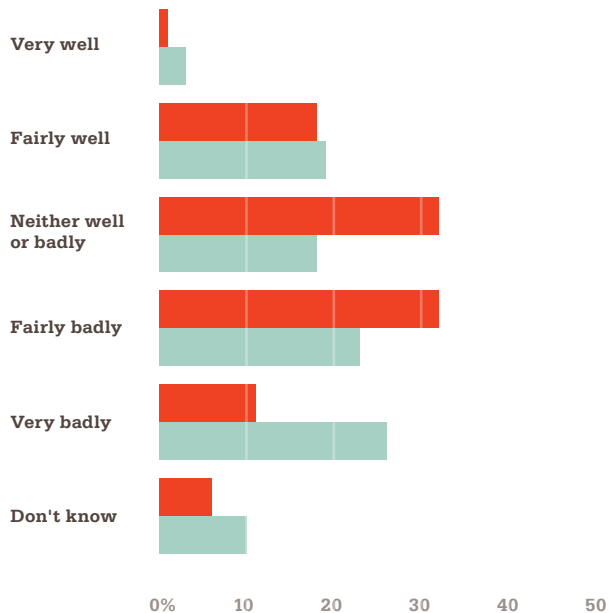
# Q. A.

5. How well or badly do you feel the Government is performing on the following policy areas?

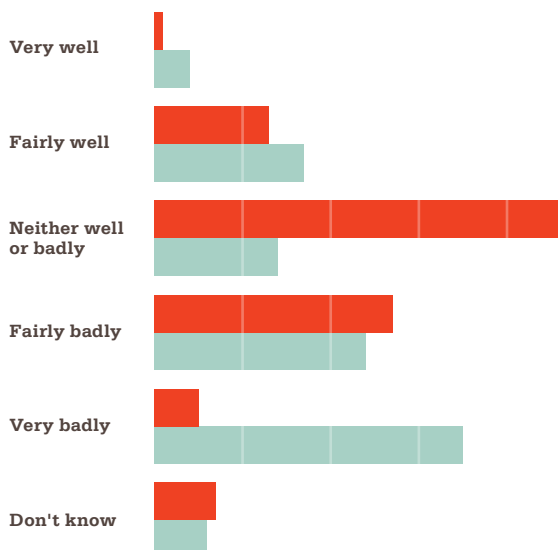
## ENERGY POLICY



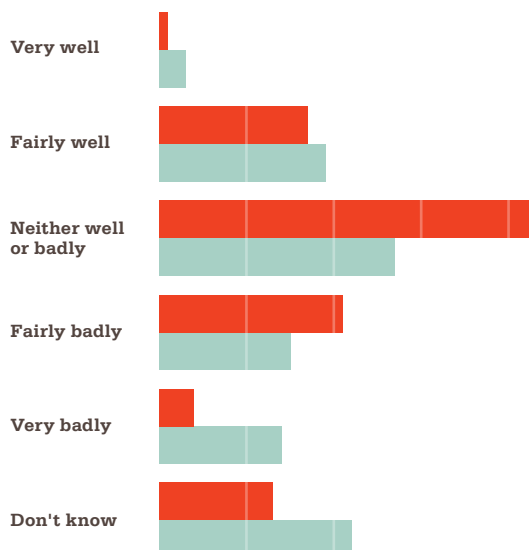
## TRANSPORT POLICY



## TAXATION



## REGULATION

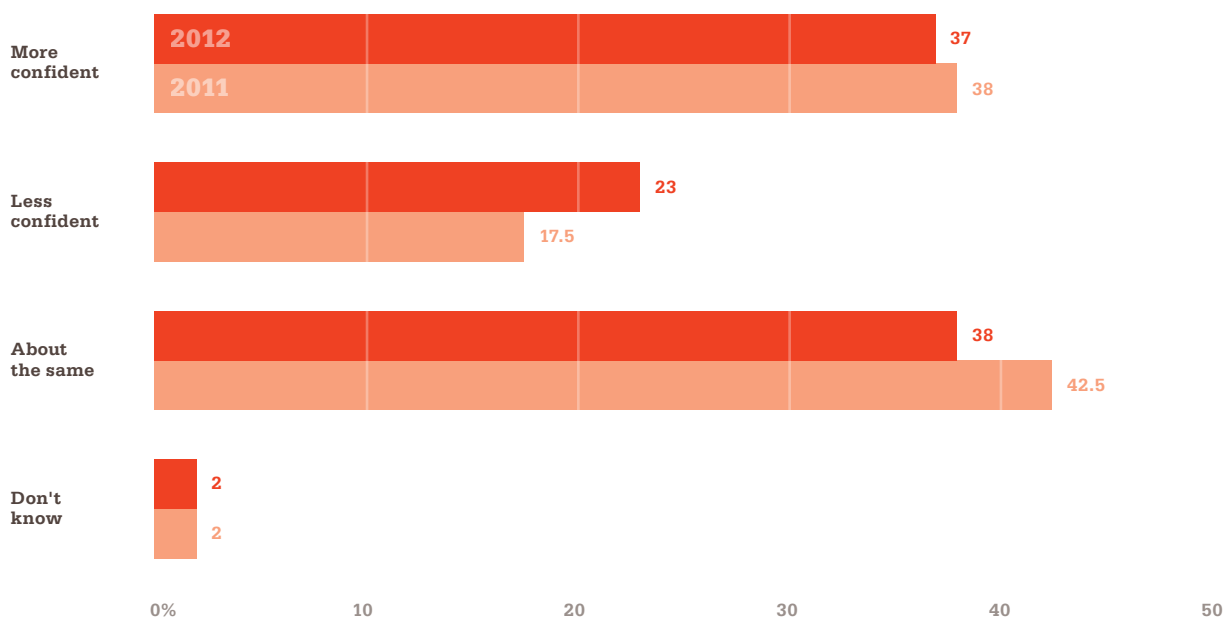




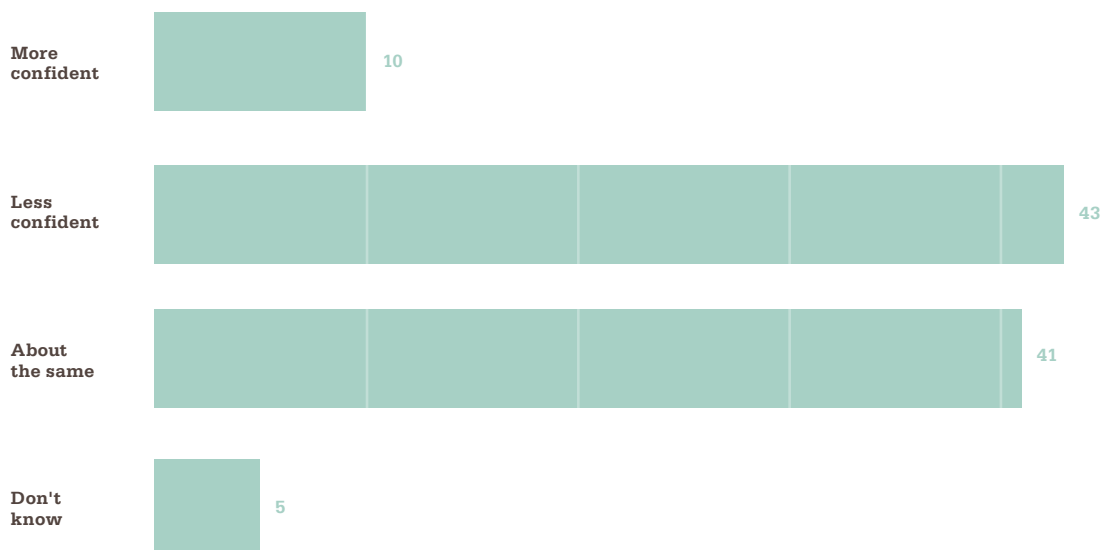
Q.  
A.

6. Are you more or less confident about the future of manufacturing since the Government came to power?

### MANUFACTURERS



### PUBLIC



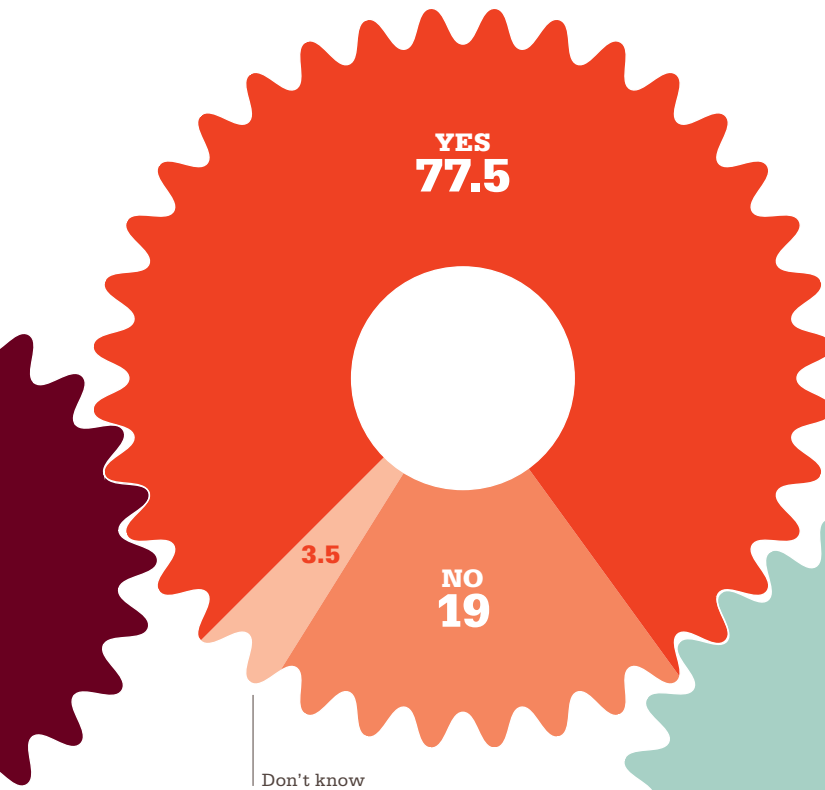


**A \$1bn British manufacturer of luxury sports cars, Aston Martin is an example of high value, quality manufacturing**

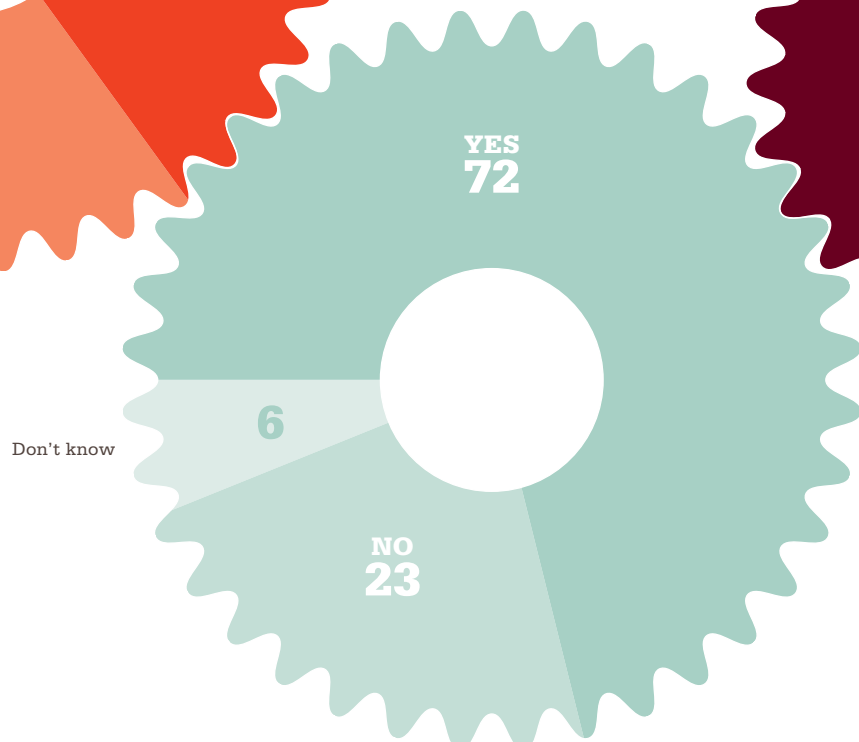
**Q.**  
**A.**

7. Would you rather the Government favoured British-based companies when awarding contracts even if this was a more expensive option?

**MANUFACTURERS**



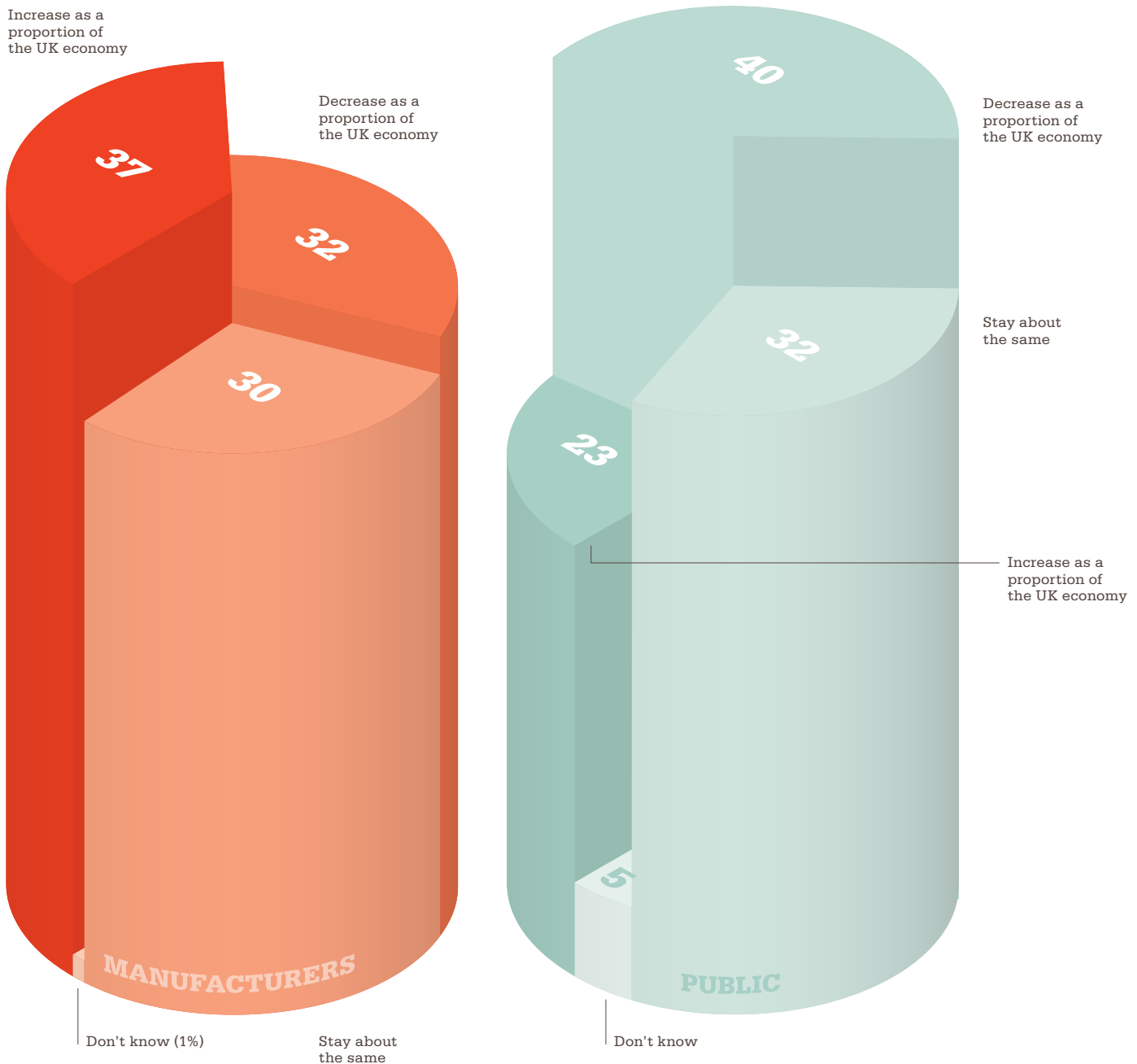
**PUBLIC**





Q.  
A.

8. Manufacturing currently accounts for 12% of the UK economy. Over the next 20 years do you think it is likely manufacturing will..?

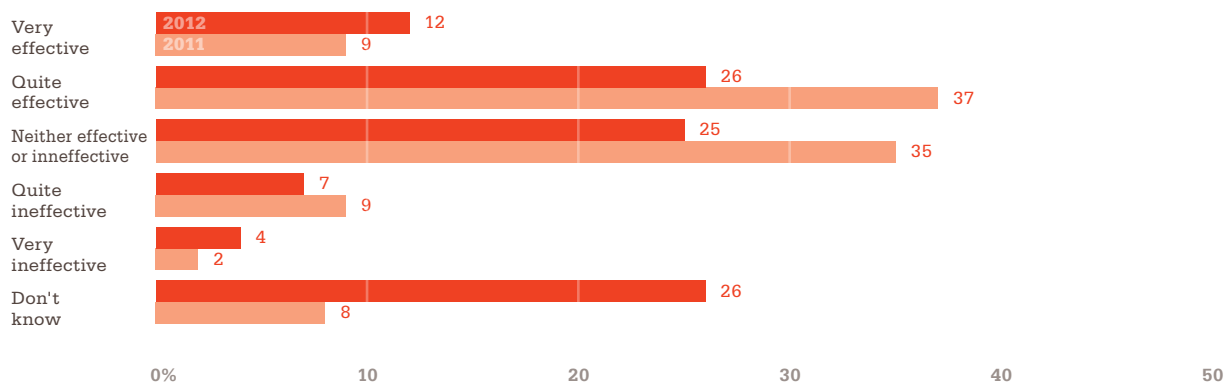


Q.  
A.

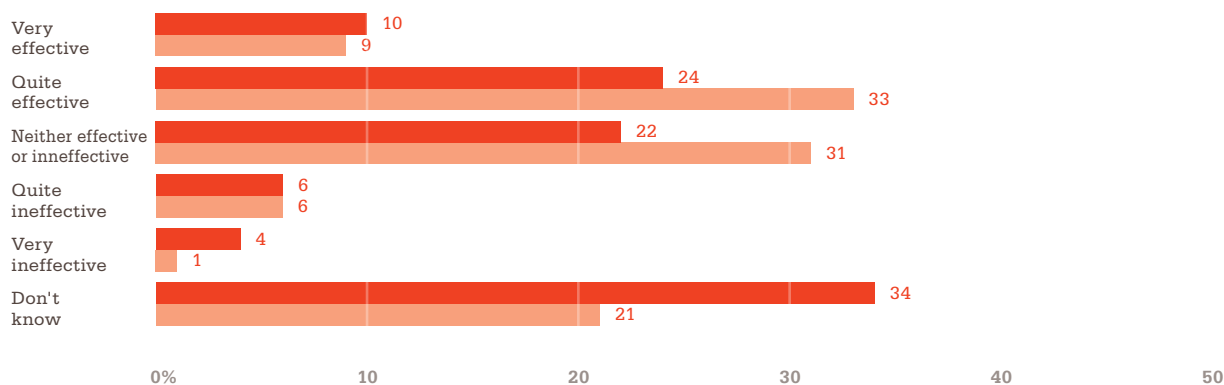
9. How effective would each of the following be to encourage you to invest in your business?

*Manufacturers only*

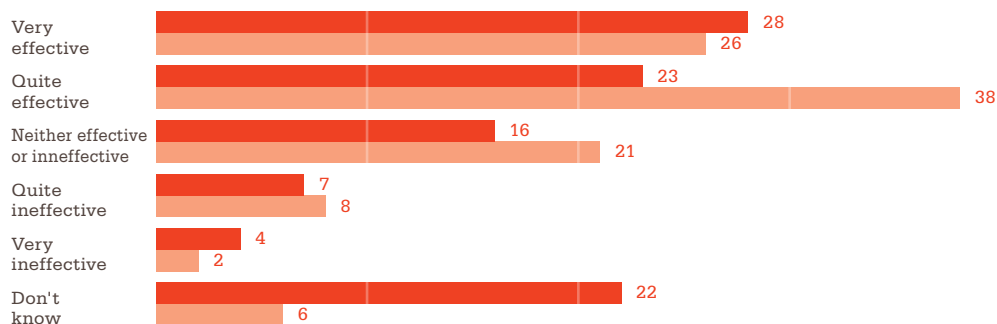
### CUTS TO CORPORATION TAX



### INCREASE TO THE CAPITAL ALLOWANCE



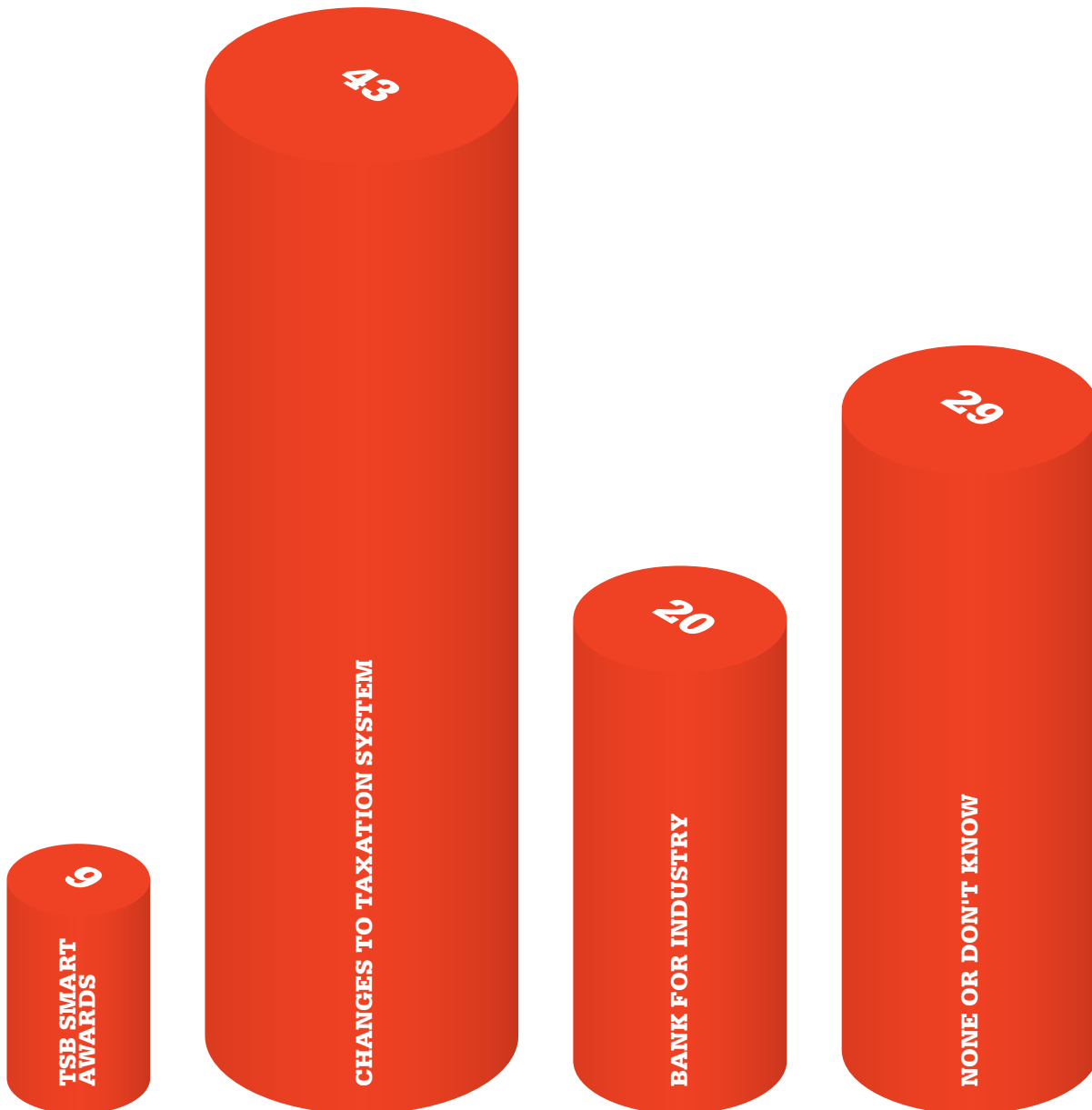
### R&D TAX CREDITS



Q.  
A.

10. What financial incentives and support from Government would you prefer?

*Manufacturers only*



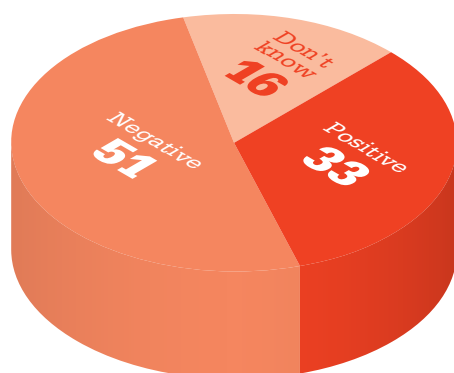


**Q.**  
**A.**

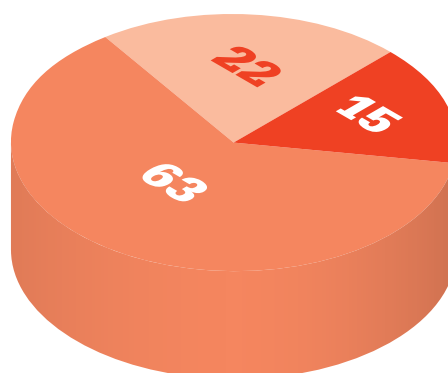
11. Which of the following do you think are either positive or negative to investment in UK manufacturing?

*Manufacturers only*

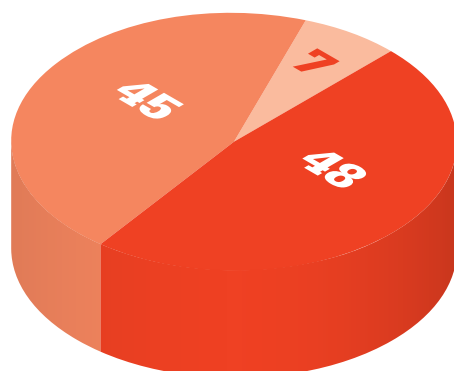
**REGULATORY ENVIRONMENT**



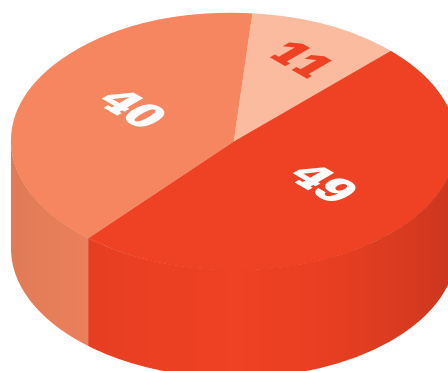
**TAX REGIME**



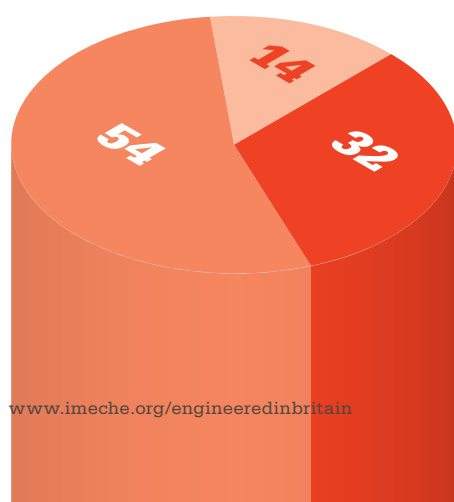
**SKILLS**



**INFRASTRUCTURE**



**LABOUR COSTS**



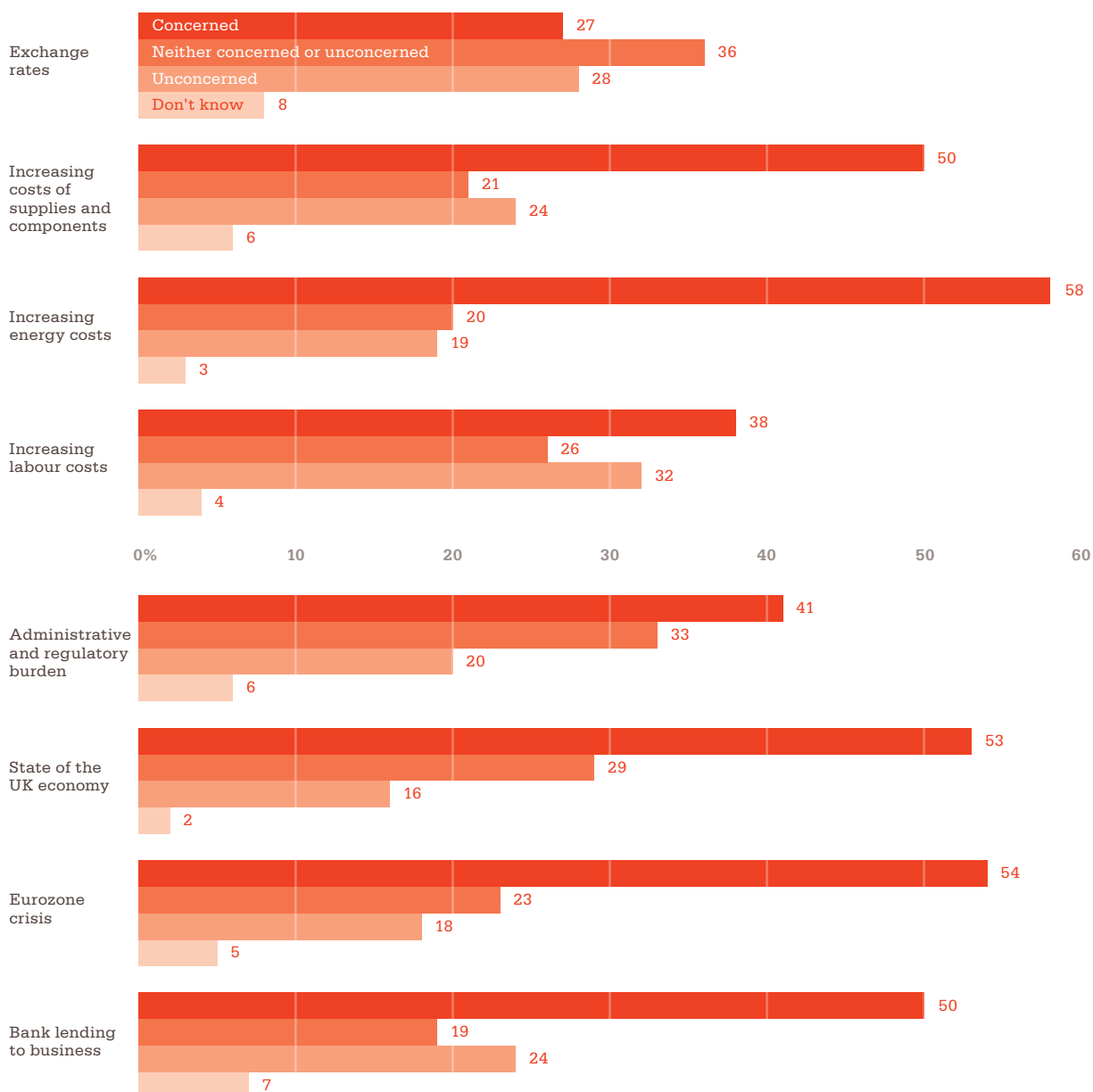
**EXCHANGE RATES**



# Q. A.

12. How concerned are you about the following to your business?

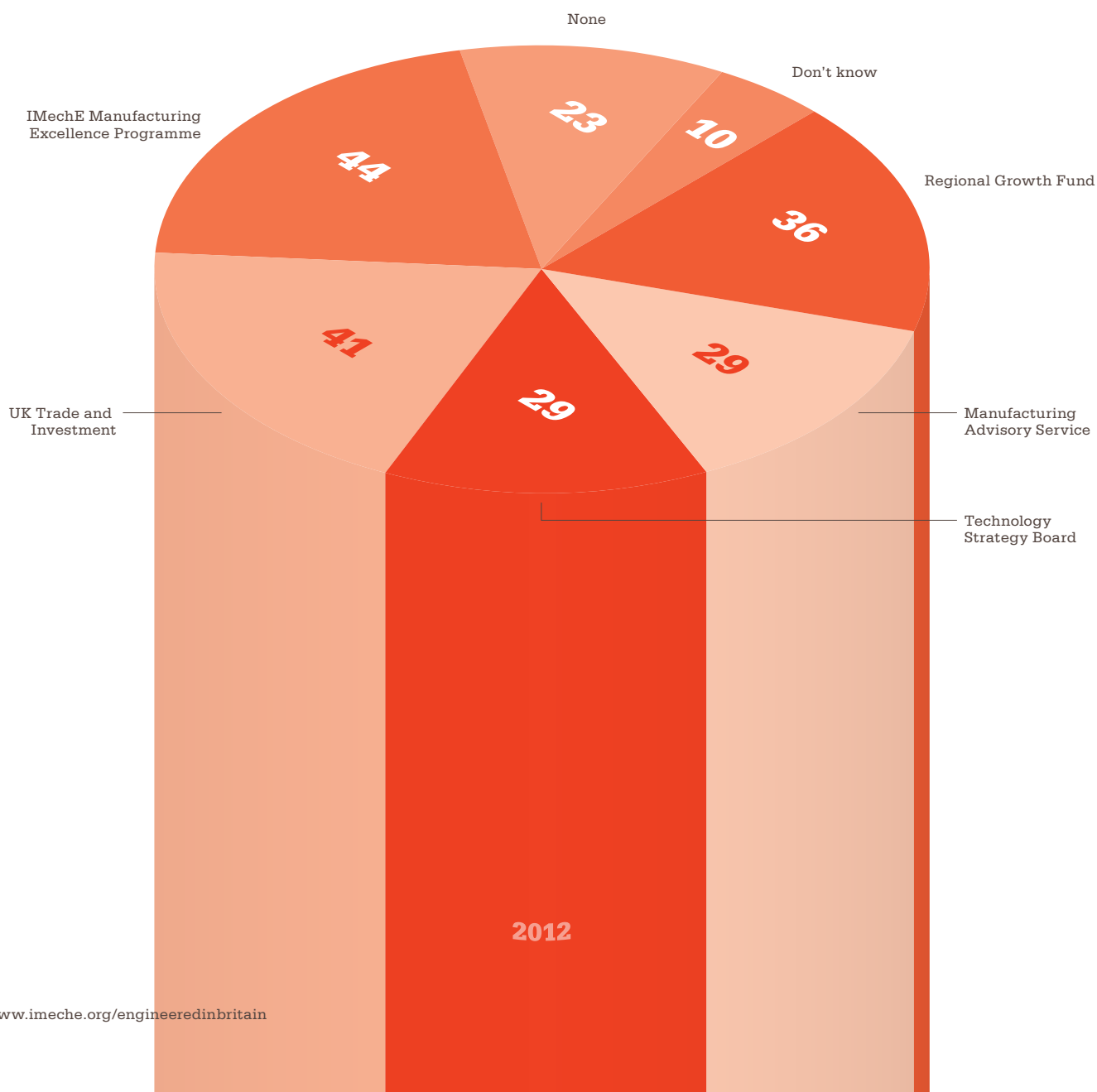
*Manufacturers only*



**Q.**  
**A.**

13. As a manufacturer, are you aware of the following funding and advice options open to your company?

*Manufacturers only*





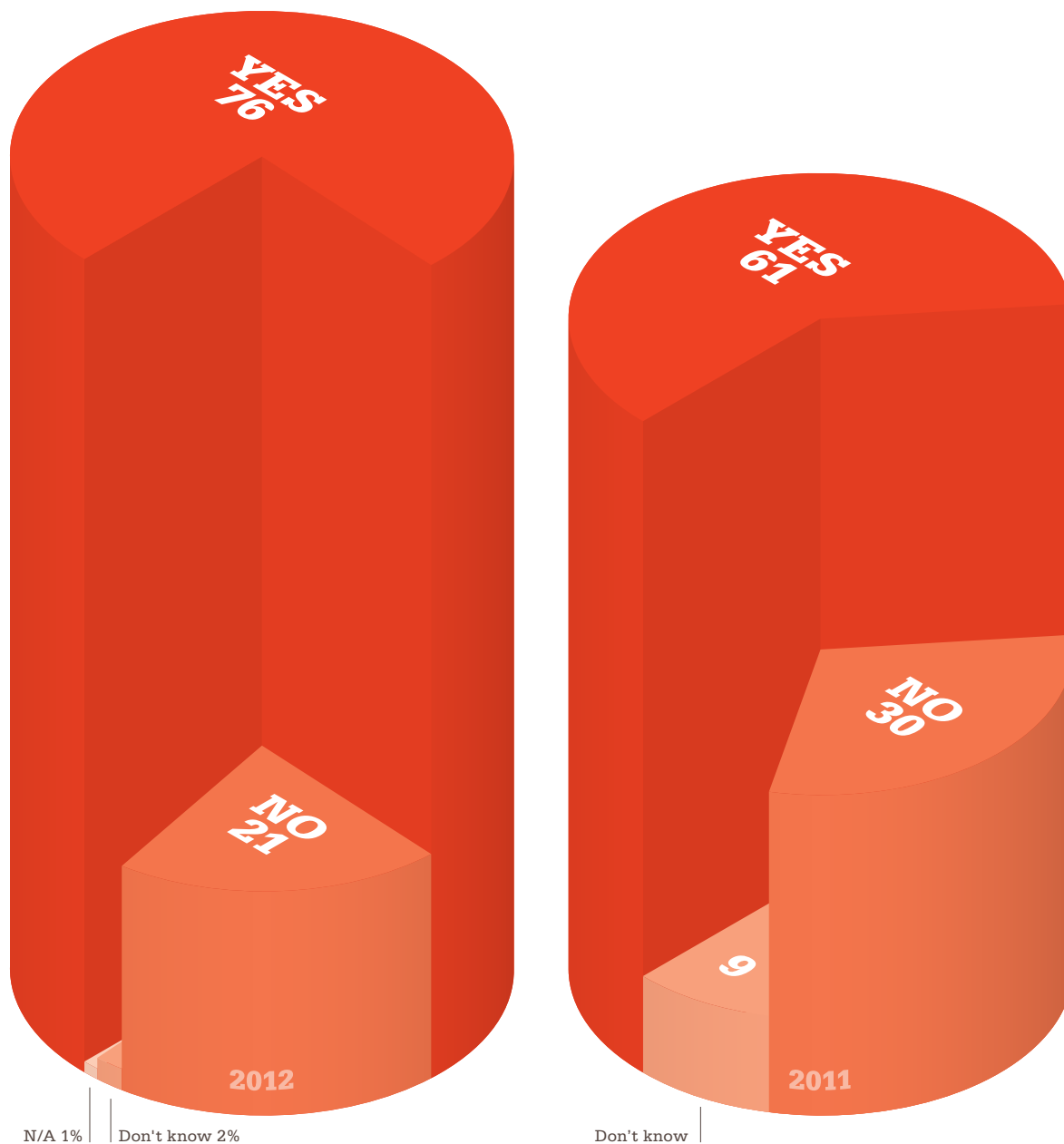


**The next generation of engineers:  
Nicola McClatchey IEng MIMechE.  
Nicola became the 100,000<sup>th</sup> member  
of the Institution in January 2012**

Q.  
A.

14. Is your company currently recruiting?

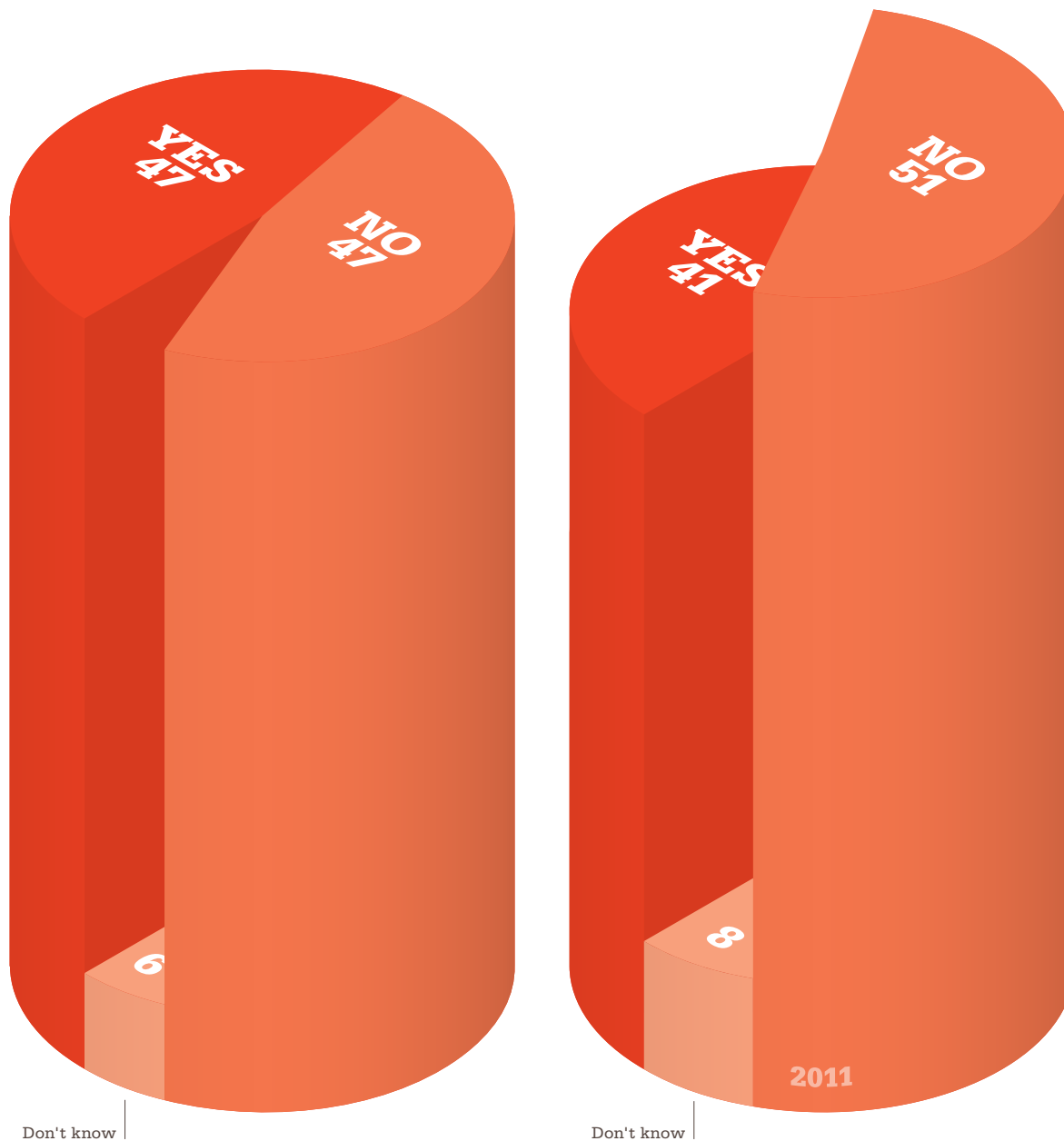
*Manufacturers only*



Q.  
A.

15. Are you finding prospective employees with the right skills?

*Manufacturers only*

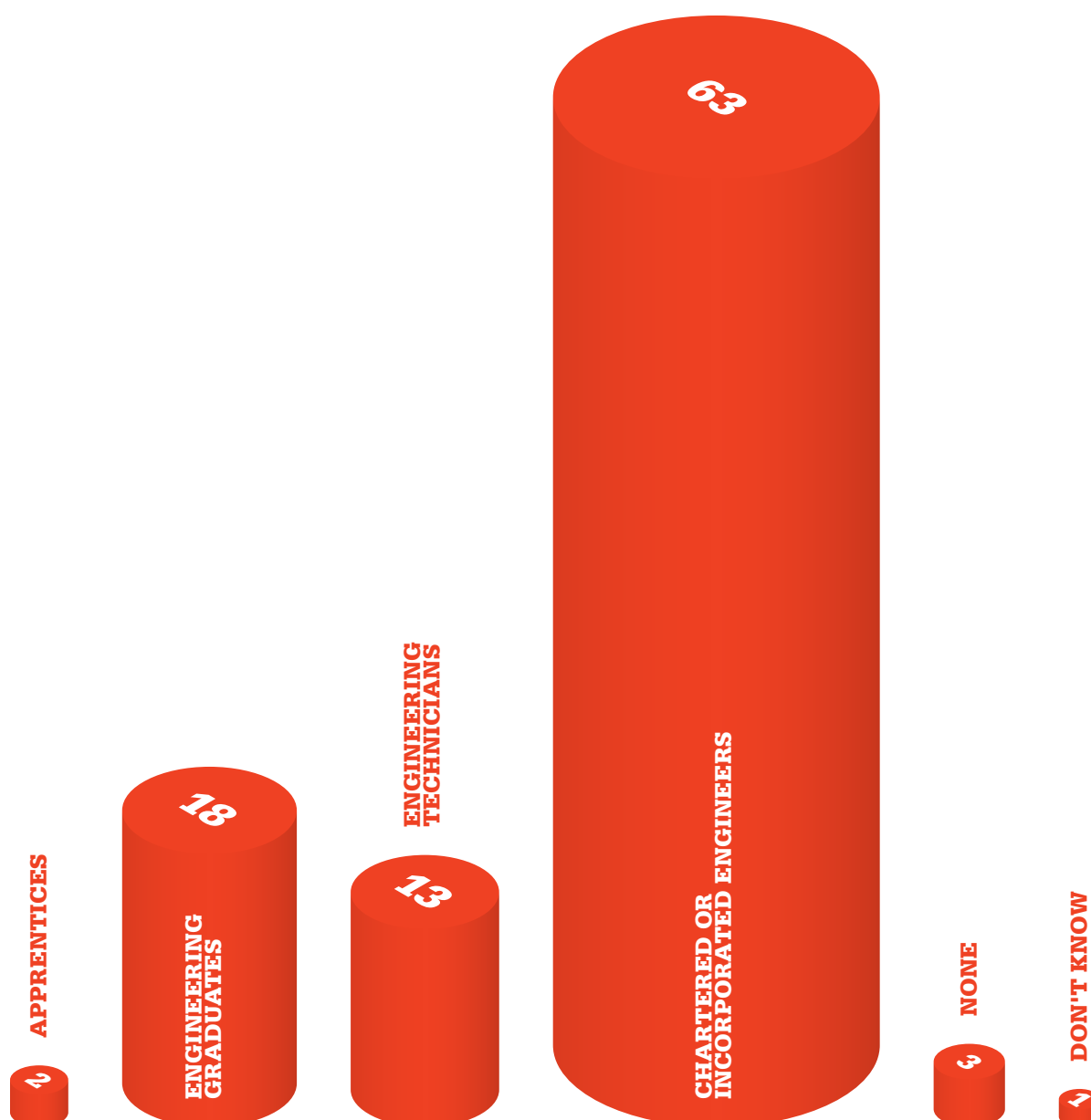




Q.  
A.

16. Which of the following engineering skill levels are you finding hardest to recruit?

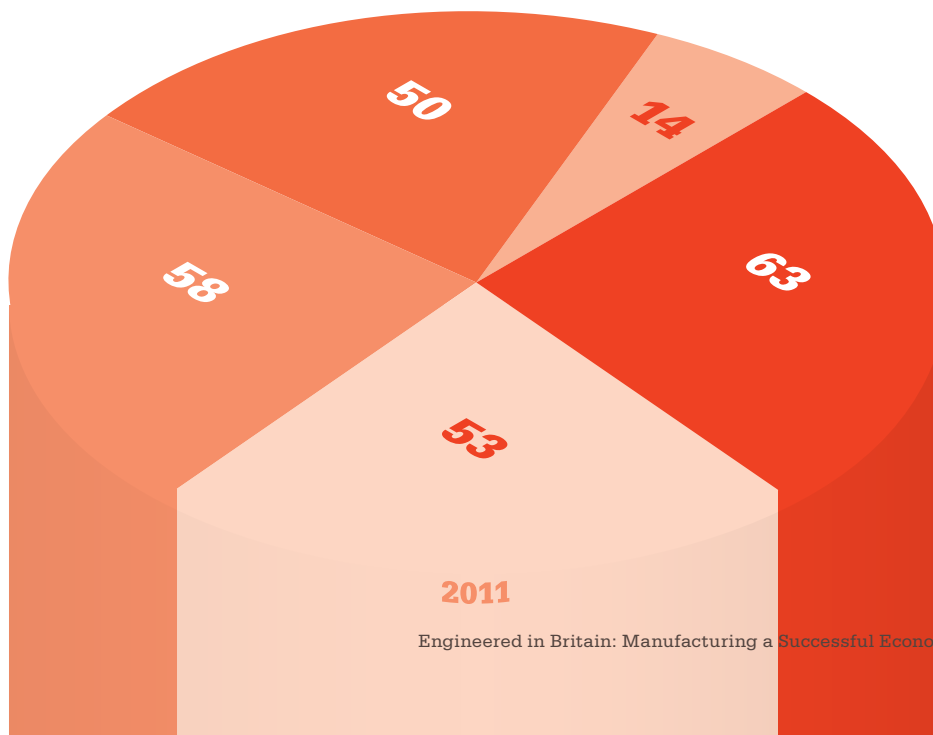
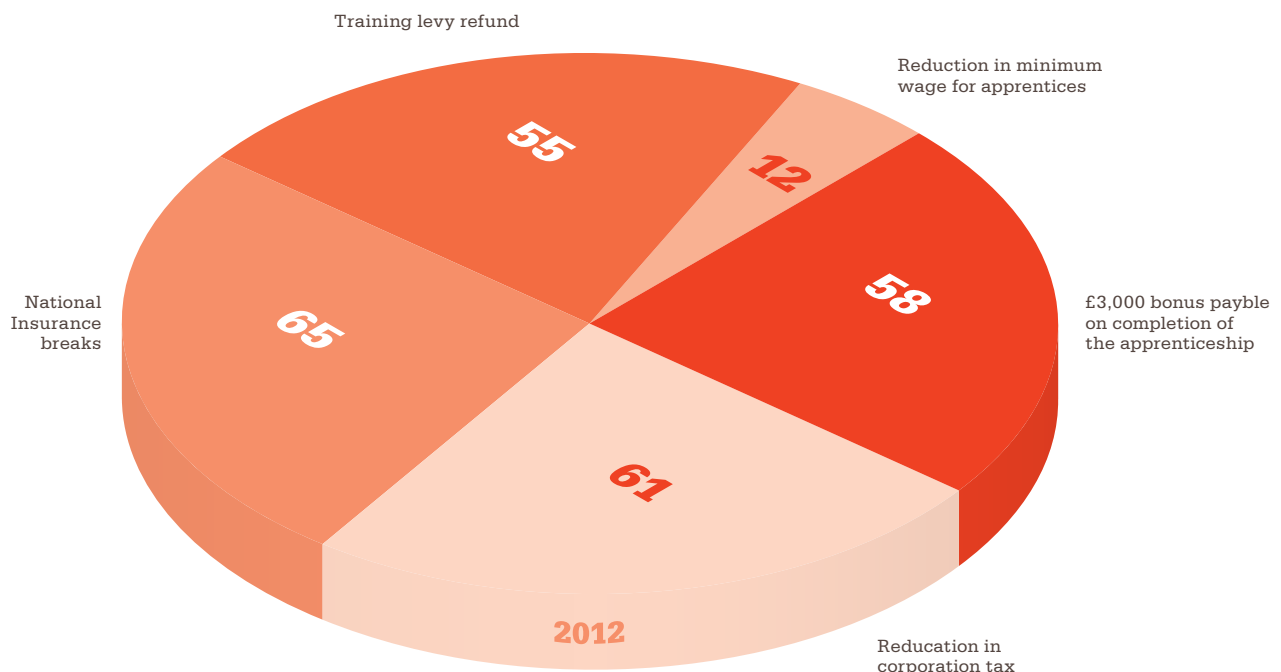
*Manufacturers only*



# Q. A.

17. Which of the following would incentivise you to take on apprentices?

*Manufacturers only*



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