



Programme Area: Bioenergy

Project: Public Perceptions

Title: 2016 - Presentation to the Energy Institute

Abstract:

Presentation to Energy Institute at launch of Insights paper

Context:

To complement its existing analysis of the bioenergy sector, the ETI wanted to find out more about current public opinion of bioenergy in the UK and the potential drivers behind those opinions. To do this the ETI developed a survey which was carried out by YouGov in 2015. An extended version of the survey was repeated in 2016.



www.eti.co.uk

Public Perceptions of Bioenergy in the UK

Hannah Evans, Strategy Analyst



What is the ETI?

- The ETI is a public-private partnership between global energy and engineering companies and the UK Government
- Increasing energy demands and stringent GHG emission targets out to 2050 (> 500 MtCO₂e to 105 MtCO₂e)
- This will require significant change to our energy system
- ETI was set up to identify and accelerate the development and demonstration (and de-risking) of an integrated set of low carbon technologies to deliver this step change

ETI members



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Department for
Business, Energy
& Industrial Strategy



Innovate UK

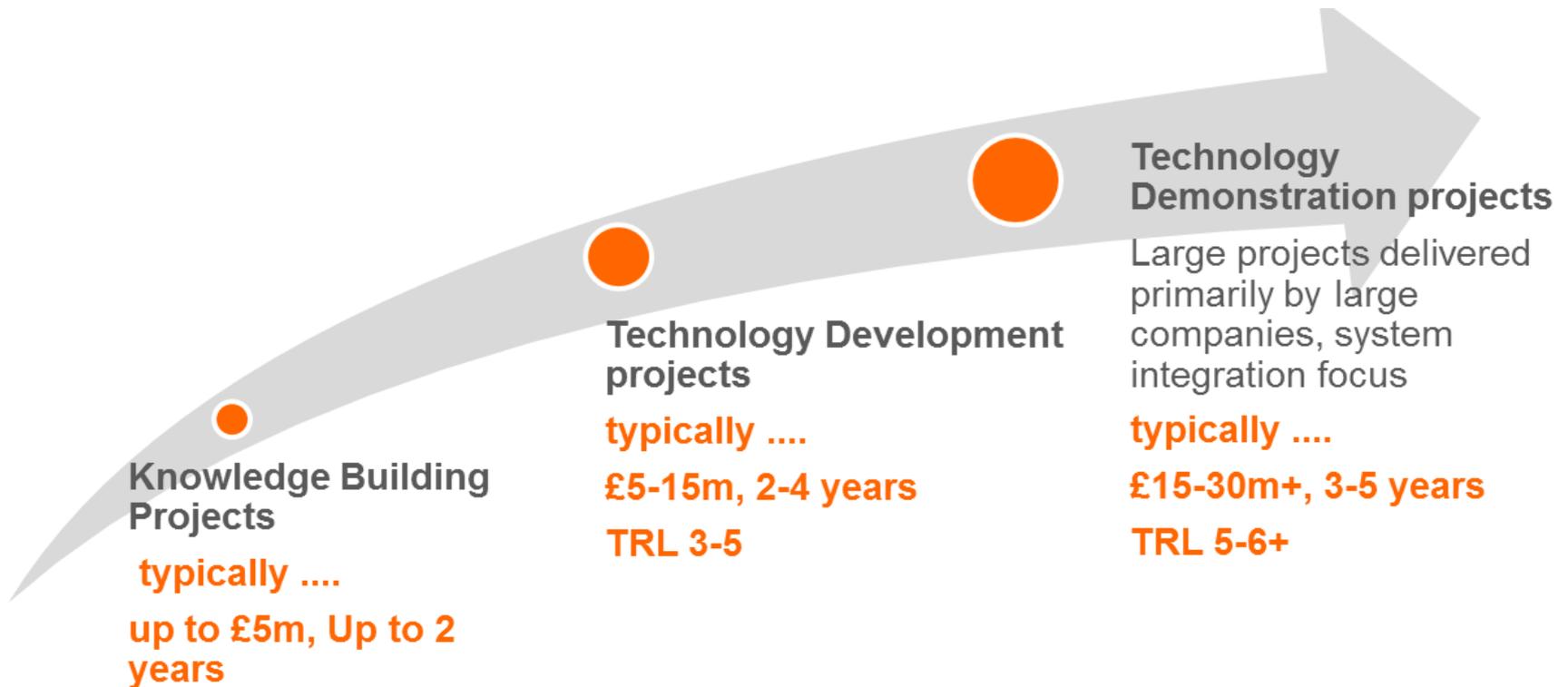
ETI programme associate

HITACHI
Inspire the Next



ETI Technology Programmes

We commission three types of projects:

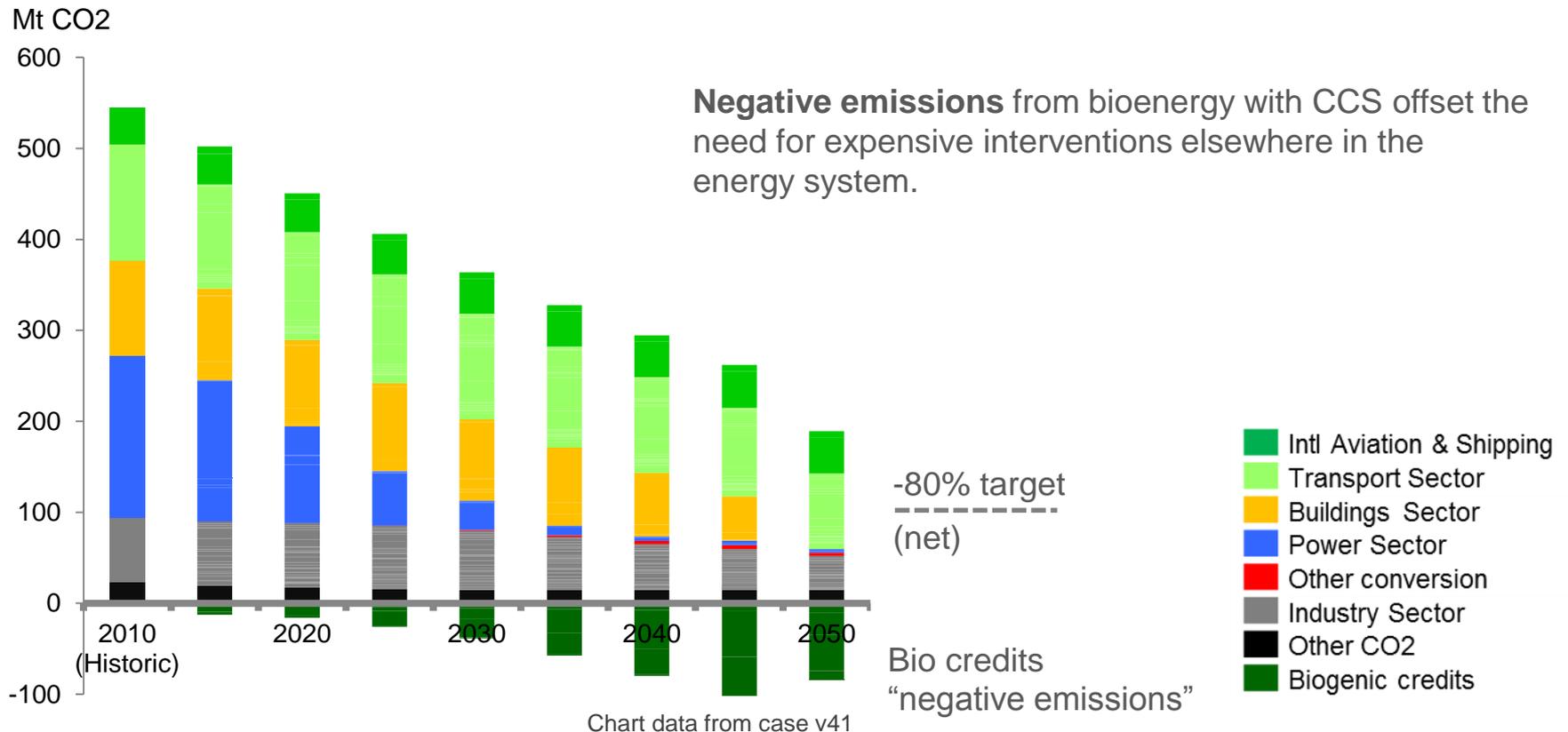




ETI's 'ESME' model indicates an important role for bioenergy in the UK



A national energy system design tool with sufficient spatial and temporal detail to understand system engineering challenges.





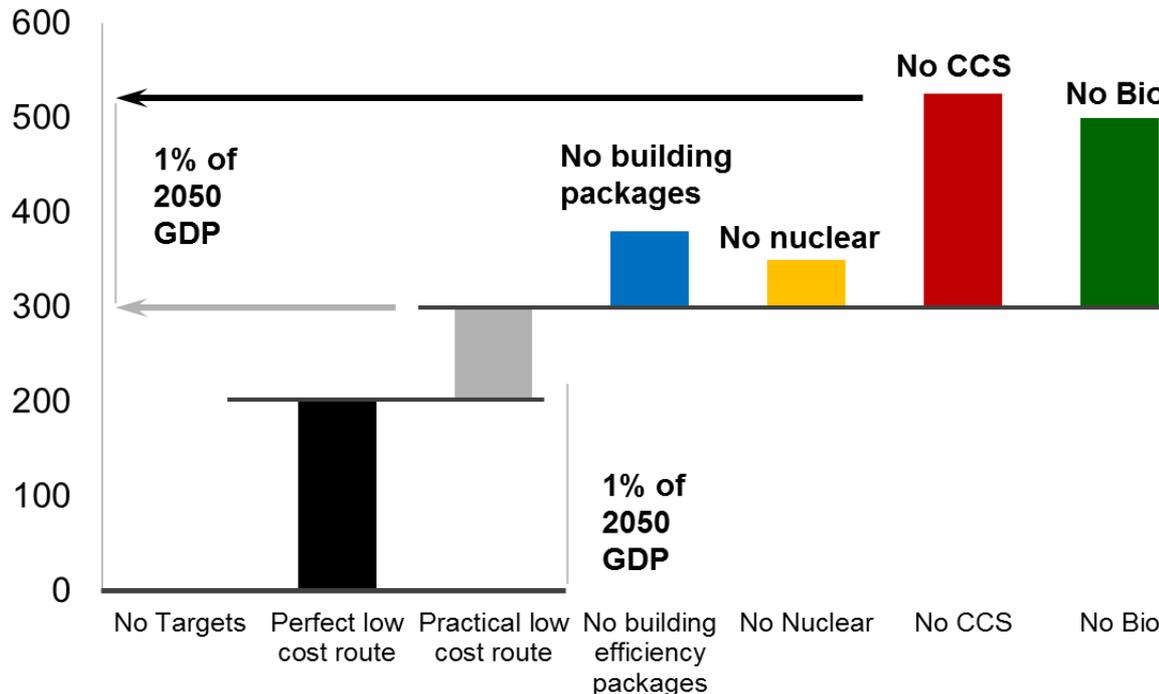
ETI's 'ESME' model indicates an important role for bioenergy in the UK



A national energy system design tool with sufficient spatial and temporal detail to understand system engineering challenges.

Additional cost of delivering 2050 -80% CO₂ energy system

NPV £ bn 2010-2050



- It is likely to be very hard to deliver an *affordable* low carbon energy system without Bioenergy or CCS
- Without both, it becomes very hard to meet our 2050 GHG targets

Chart data from case dc14



ETI Bioenergy Programme – key questions

How much negative emissions could be realised through bioenergy deployment in the UK?



What would be the best ways to use this bioenergy in the future UK energy system?



What are the right combinations of feedstock, pre-processing, and conversion technologies?



Enabling policy, regulatory and market frameworks. Understanding public perception



The survey

2015

21st – 24th August

3,105 respondents

2016

7th – 12th September

5,307 respondents



Results weighted for GB
population

Online survey carried out by

YouGov[®]
What the world thinks

Key themes

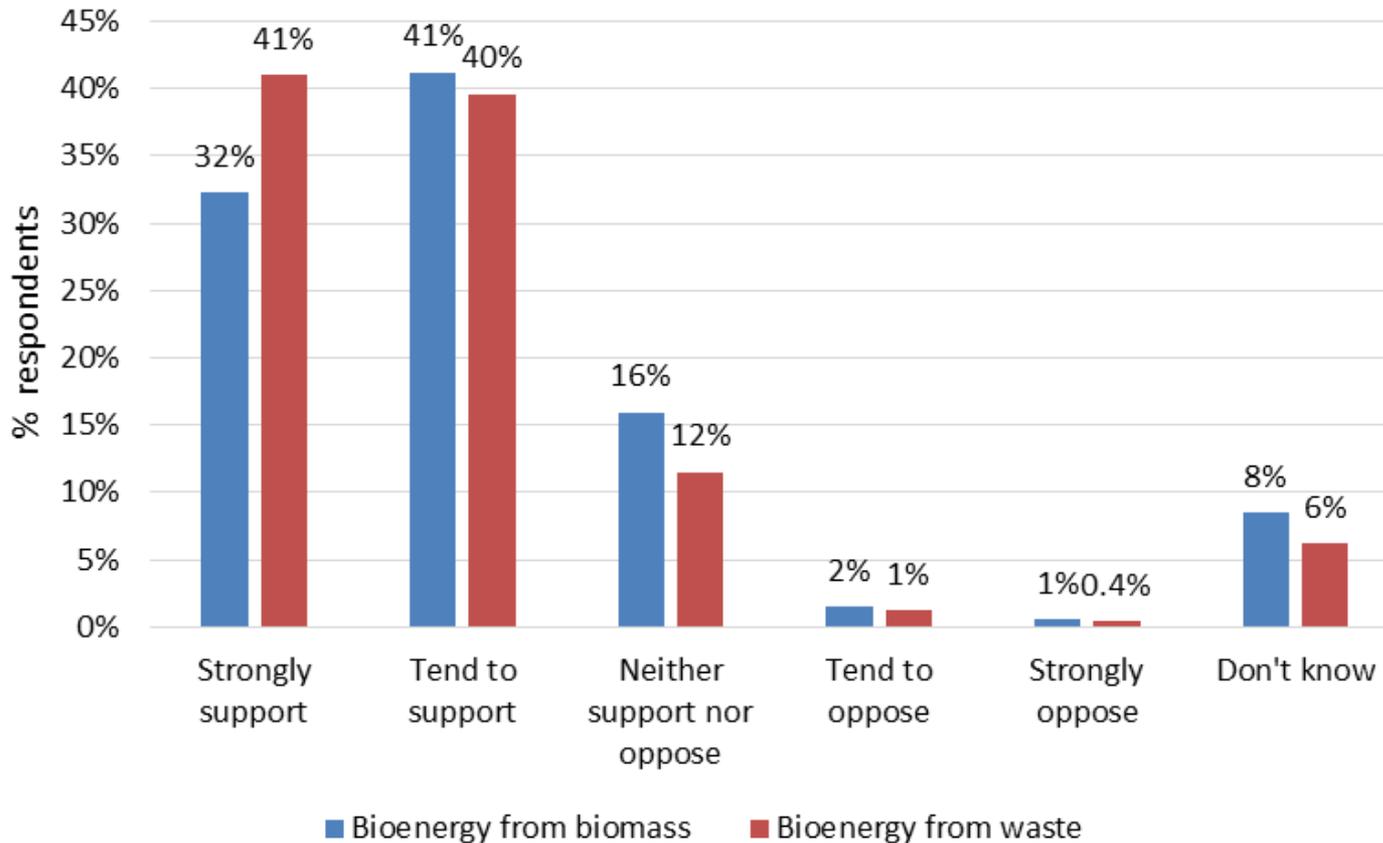
- **Support** - to what extent are the public supportive of bioenergy in the UK and why?
- **Awareness** – how many people have heard of bioenergy and what do they know about it?
- **UK Production** – attitudes towards land use in the UK
- **Imports** – attitudes towards imported biomass
- **Deployment** – is there any preference for bioenergy to be deployed in a particular location or at a particular scale.



There is strong public support for producing bioenergy in the UK from both biomass & waste

Q: In general, to what extent do you support or oppose the use of [biomass/waste] to produce bioenergy in the UK?

Support
 Awareness
 UK production
 Imports
 Deployment



Base: All GB adults (5,307)

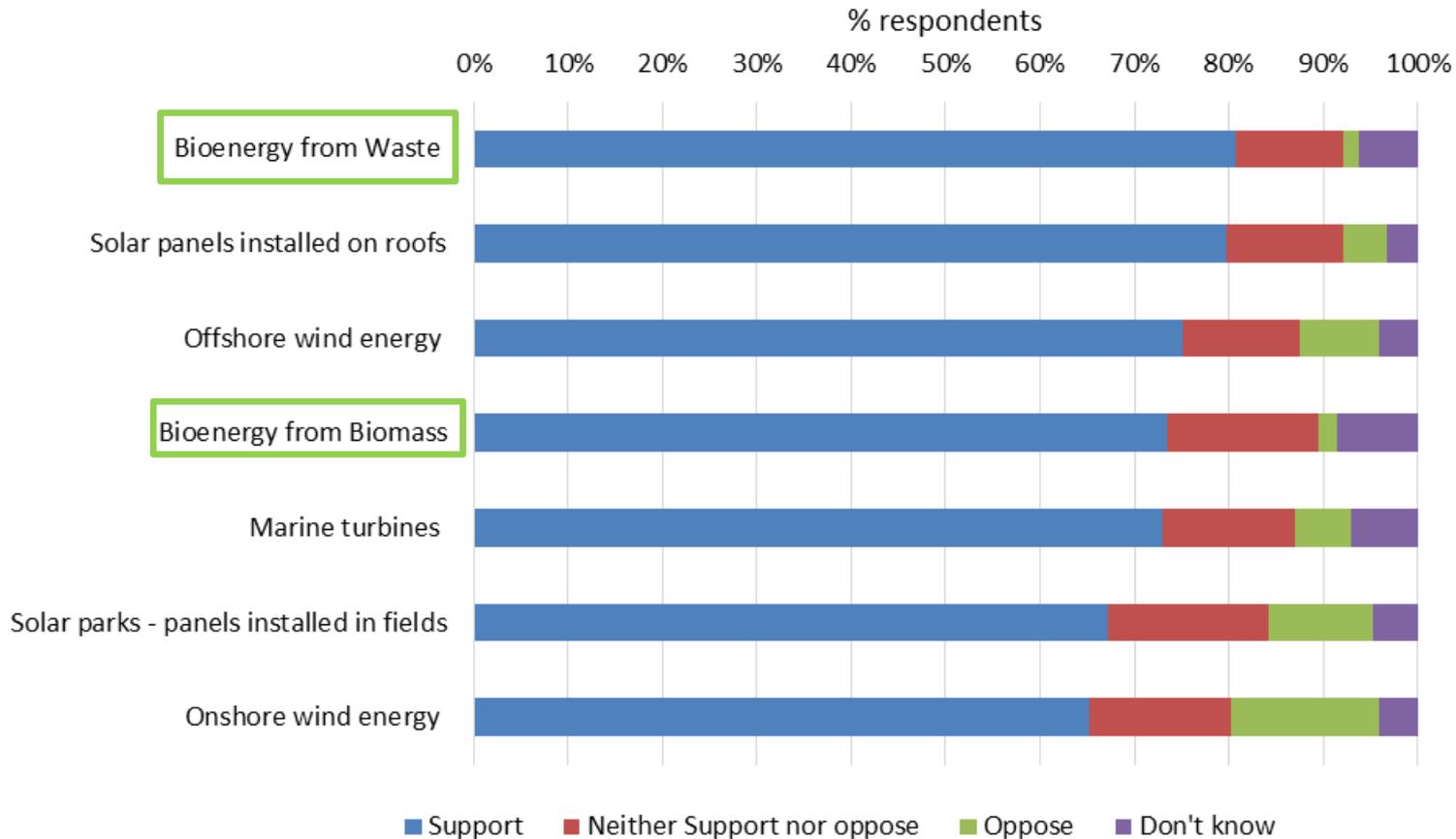
Source: YouGov plc 2016 © All rights reserved



Support for bioenergy compares favourably with other renewables

Q: In general, to what extent do you support or oppose the use of each of the following renewable energy technologies to produce energy in the UK?

Support
 Awareness
 UK production
 Imports
 Deployment



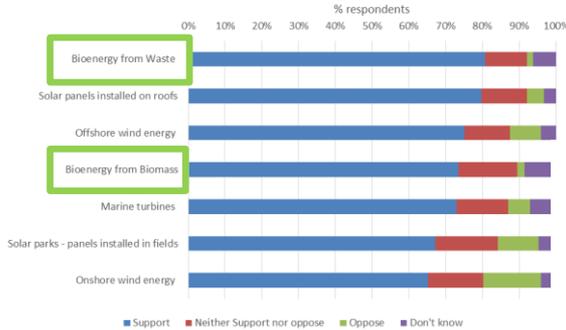
Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved



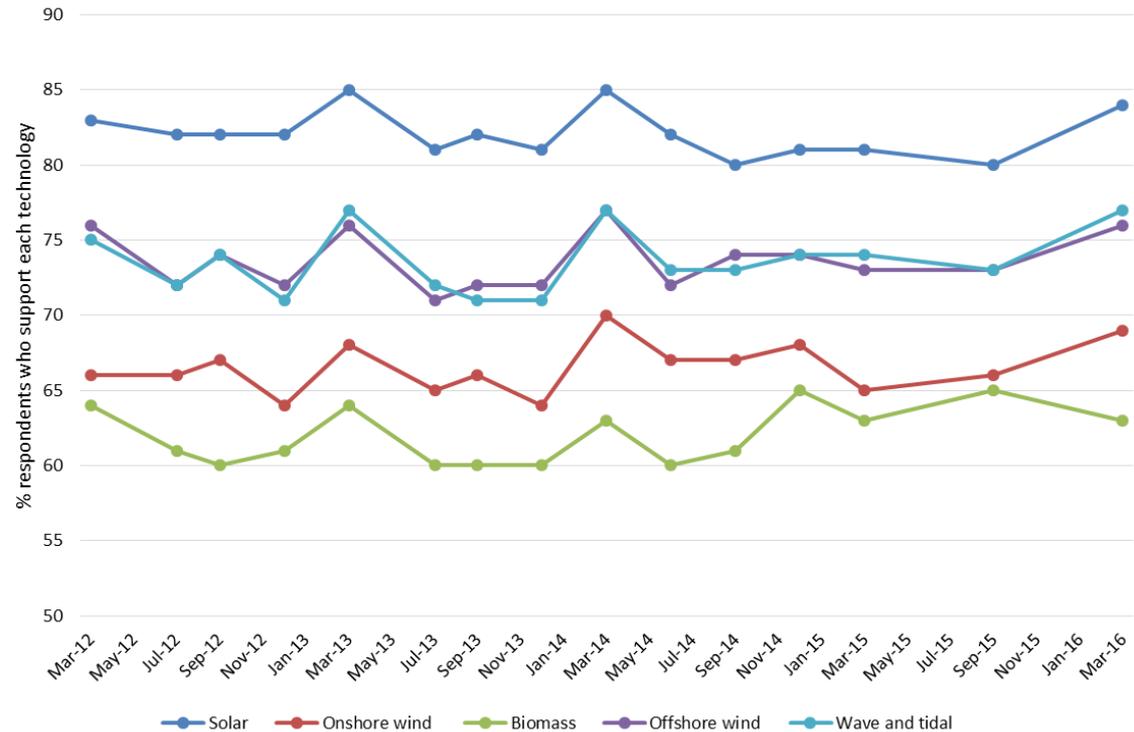
Support for bioenergy compares favourably with other renewables

Q: In general, to what extent do you support or oppose the use of each of the following renewable energy technologies to produce energy in the UK?



The BEIS public attitudes tracker indicates lower levels of support for bioenergy

Support
 Awareness
 UK production
 Imports
 Deployment

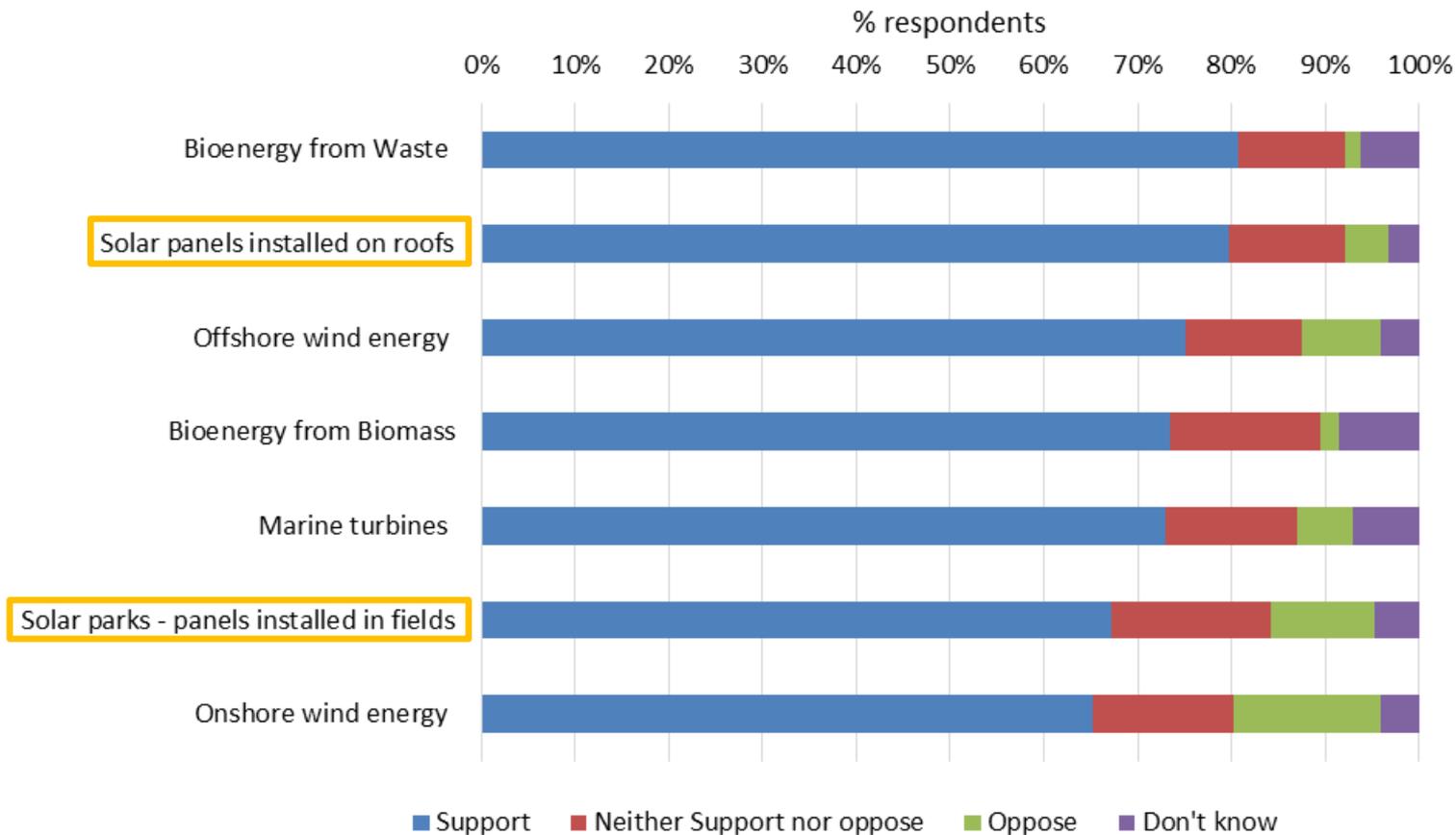




Support for bioenergy compares favourably with other renewables

Q: In general, to what extent do you support or oppose the use of each of the following renewable energy technologies to produce energy in the UK?

Support
Awareness
UK production
Imports
Deployment

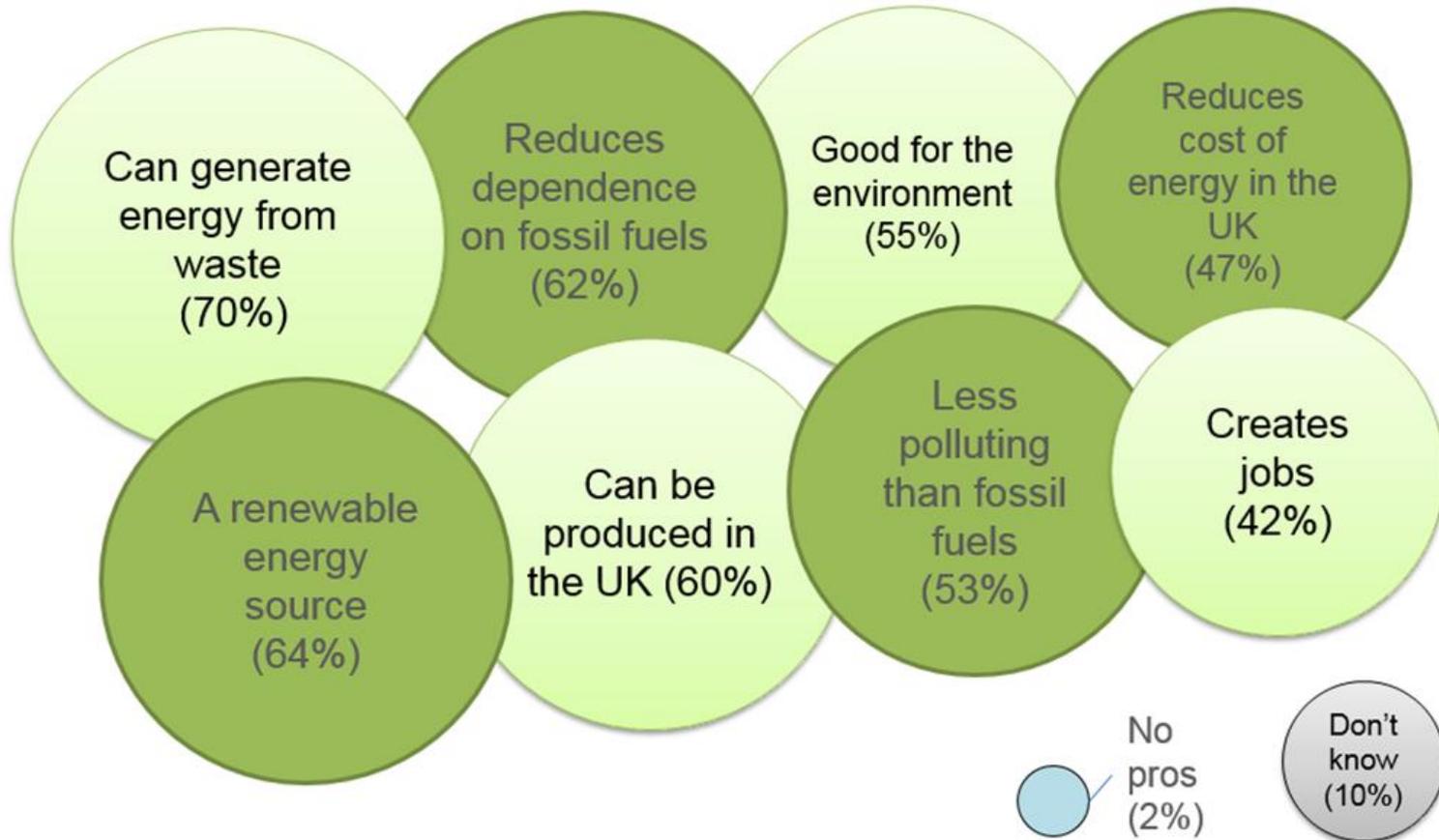


Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved



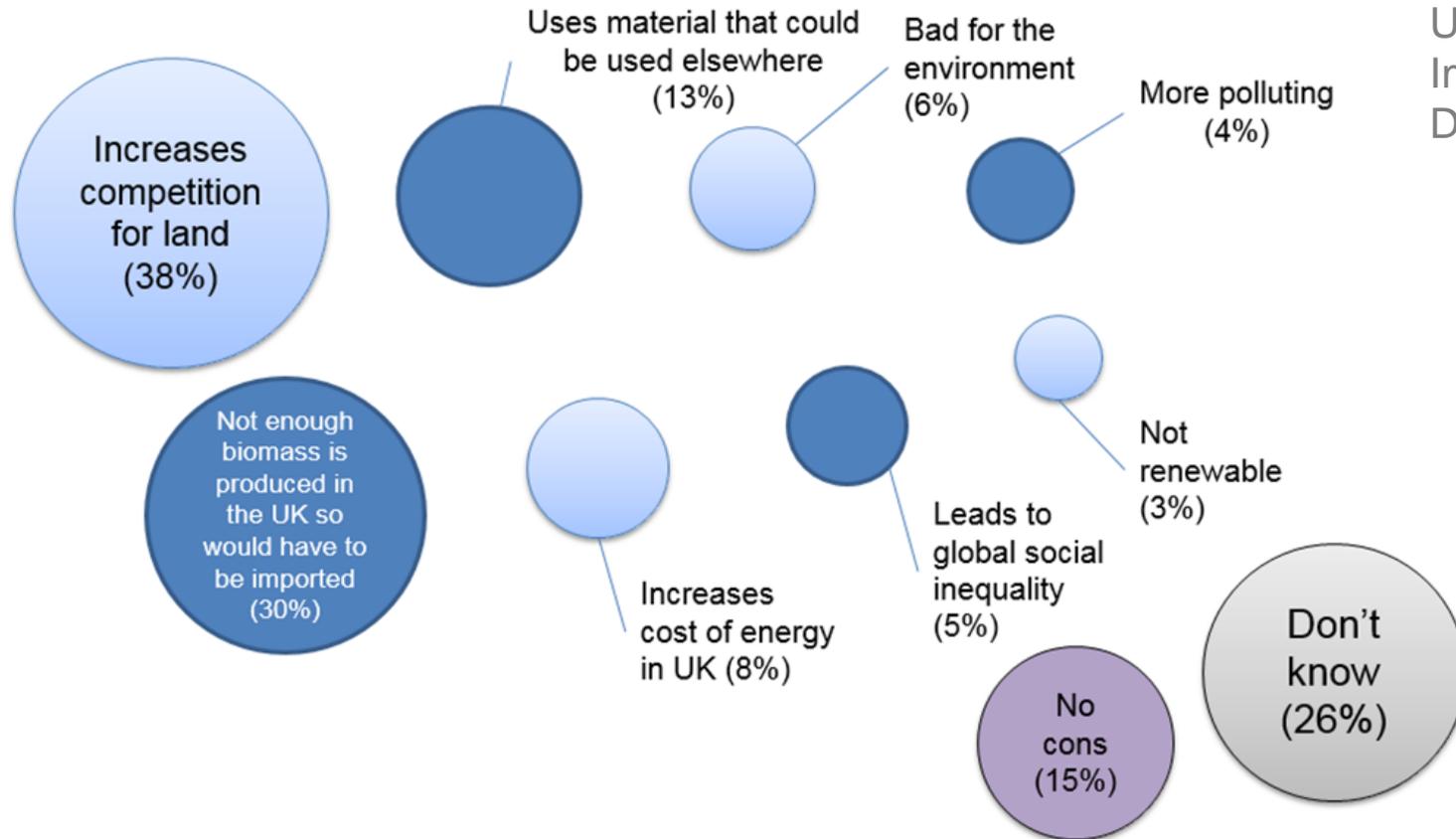
The public associate bioenergy with several positive features...



Support
Awareness
UK production
Imports
Deployment



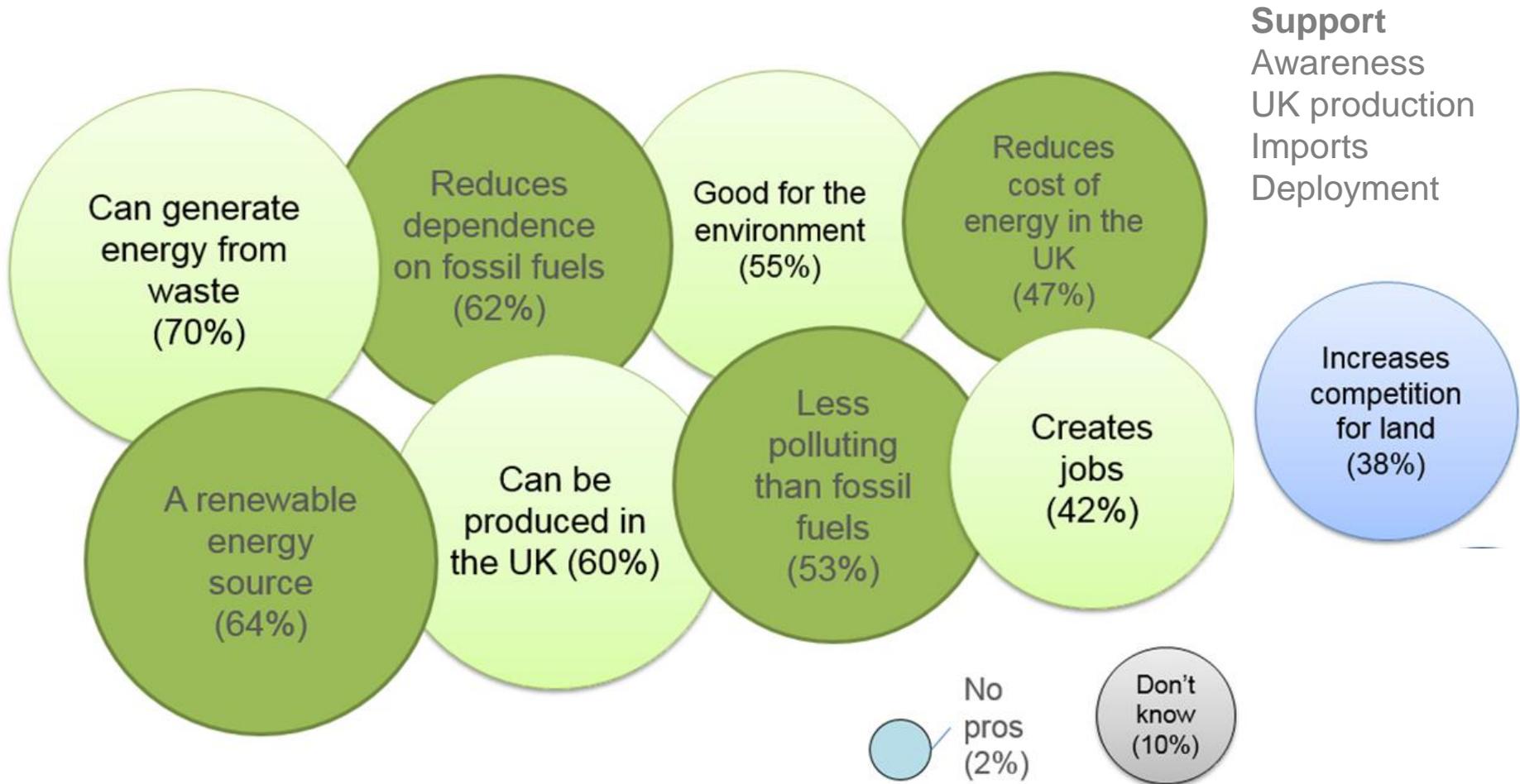
...but had two key concerns



Support
Awareness
UK production
Imports
Deployment



The most selected concern was chosen by fewer people than the least selected positive feature

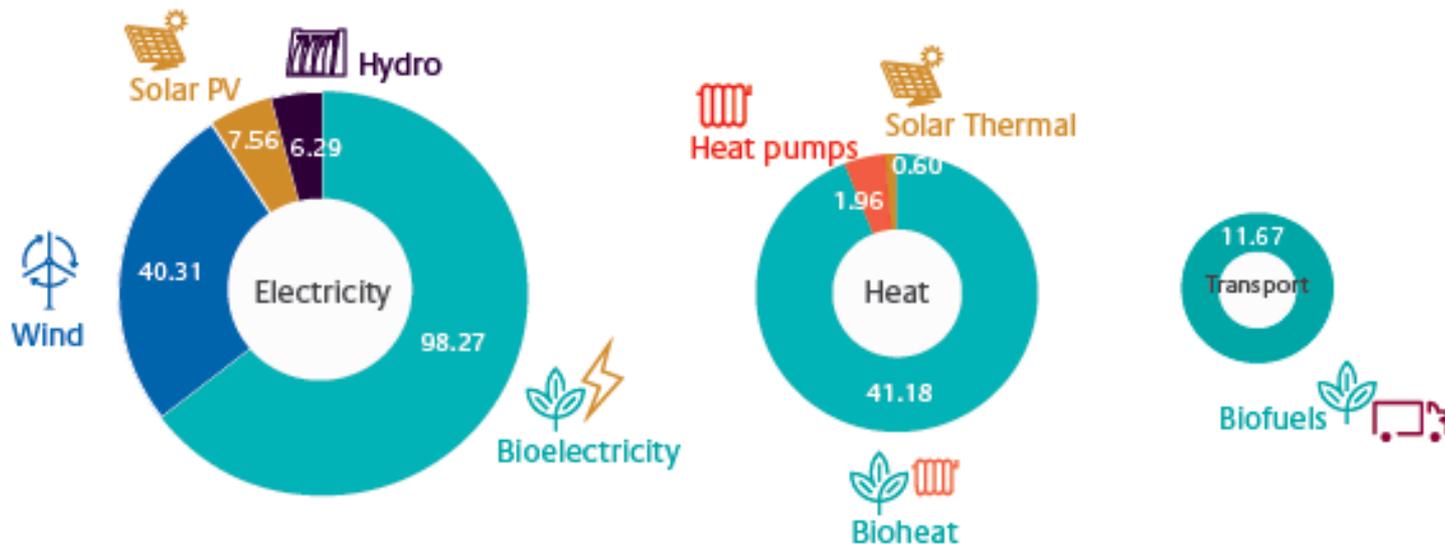




Most people were unaware of the importance of bioenergy to the UK renewable energy mix

- 62% of respondents thought that bioenergy contributed 0-10% of renewable energy in the UK
- Only 2% of respondents thought bioenergy contributed more than half of the UK's renewable energy
- In 2015, bioenergy made up 73% of renewable energy sources and 59% of renewable energy produced

Support
Awareness
UK production
Imports
Deployment



Source: DUKES (2016), Table 6.1 Renewables and Waste Commodity Balances 2015 / Summarised by the Energy Technologies Institute LLP

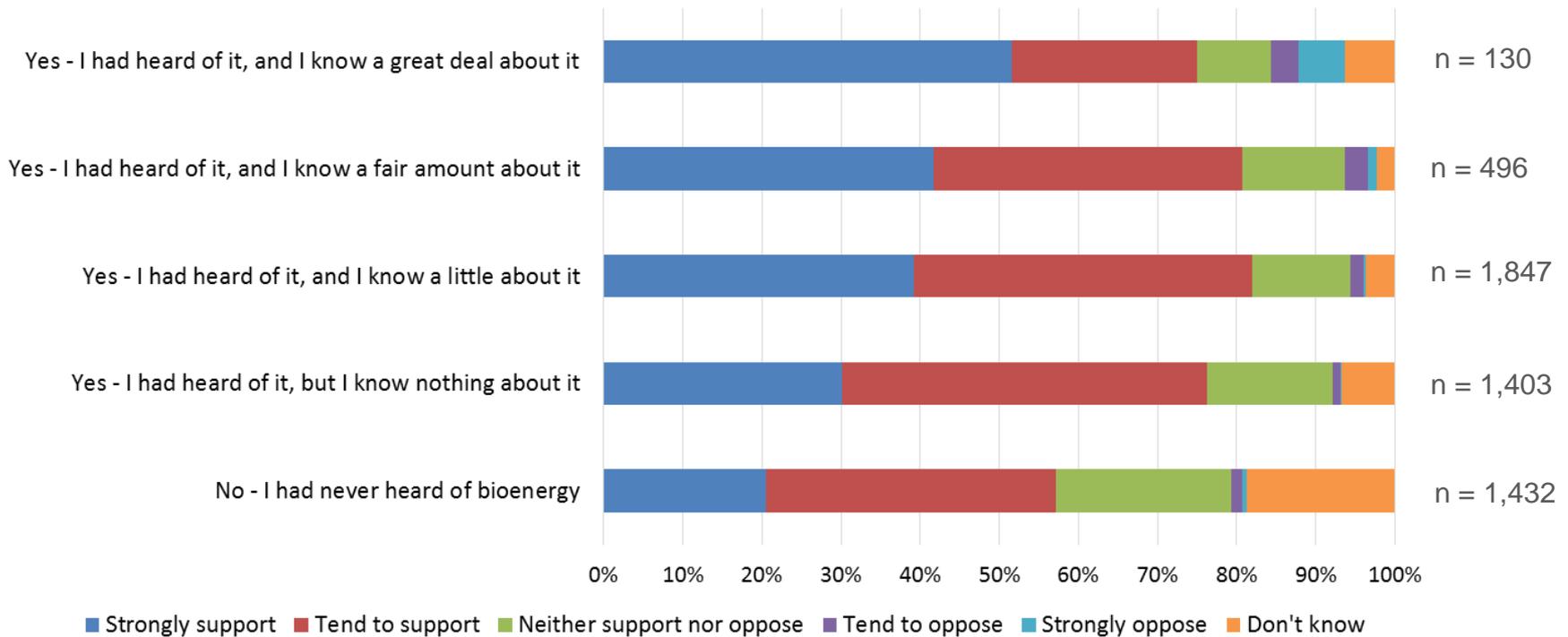
Figures represent Total Supply (used for energy) in TWh



People who had heard about bioenergy were more likely to support it

Q: In general, to what extent do you support or oppose the use of biomass to produce bioenergy in the UK? Results shown by level of pre-existing knowledge of bioenergy.

Support
Awareness
 UK production
 Imports
 Deployment



Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved

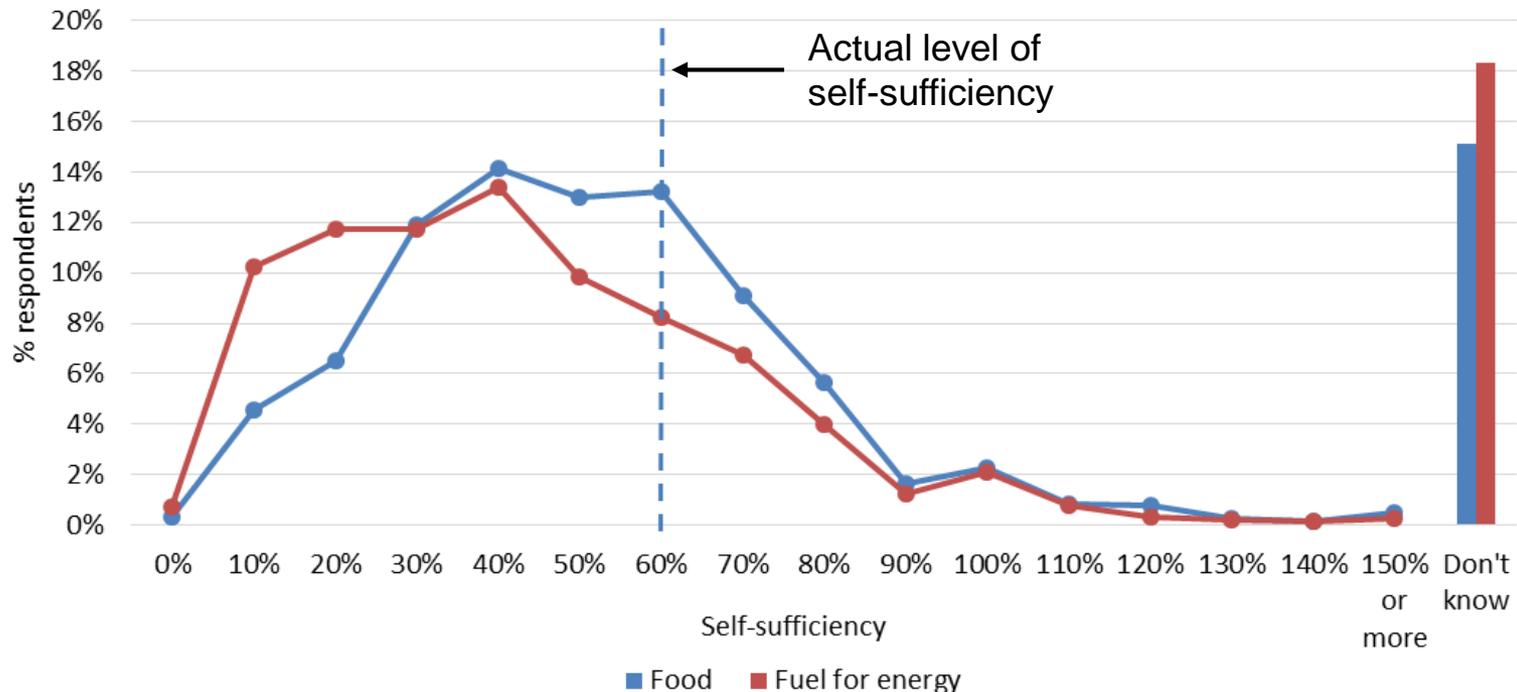


Food and fuel self-sufficiency are important, but respondents think there are opportunities to increase productivity

- 38% of respondents thought that ‘increases competition for land’ was a negative feature of bioenergy
- Respondents generally underestimated the UK’s levels of both food and fuel self-sufficiency

Support
Awareness
UK production
Imports
Deployment

Q. Approximately, which ONE of the following percentages do you think represents the [food/fuel for energy] self-sufficiency of the UK?



Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved



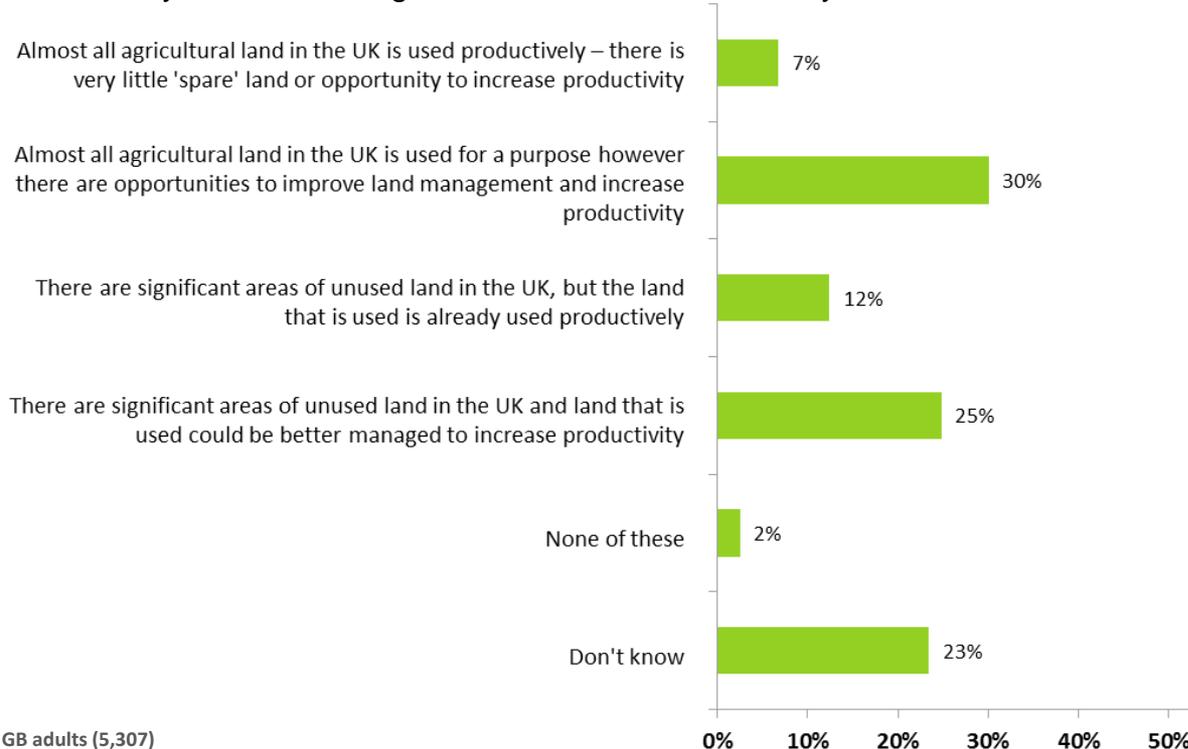
Food and fuel self-sufficiency are important, but respondents think there are opportunities to increase productivity

- Food self-sufficiency matters to respondents and around 70% would like to see the UK produce more food and fuel for energy
- 55% of respondents thought that there are opportunities to increase the productivity of land in the UK

Support
Awareness
UK production
Imports
Deployment

Q. Still thinking about agricultural land availability in the UK...

Which ONE, if any, of the following statements BEST describes your view?



Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved

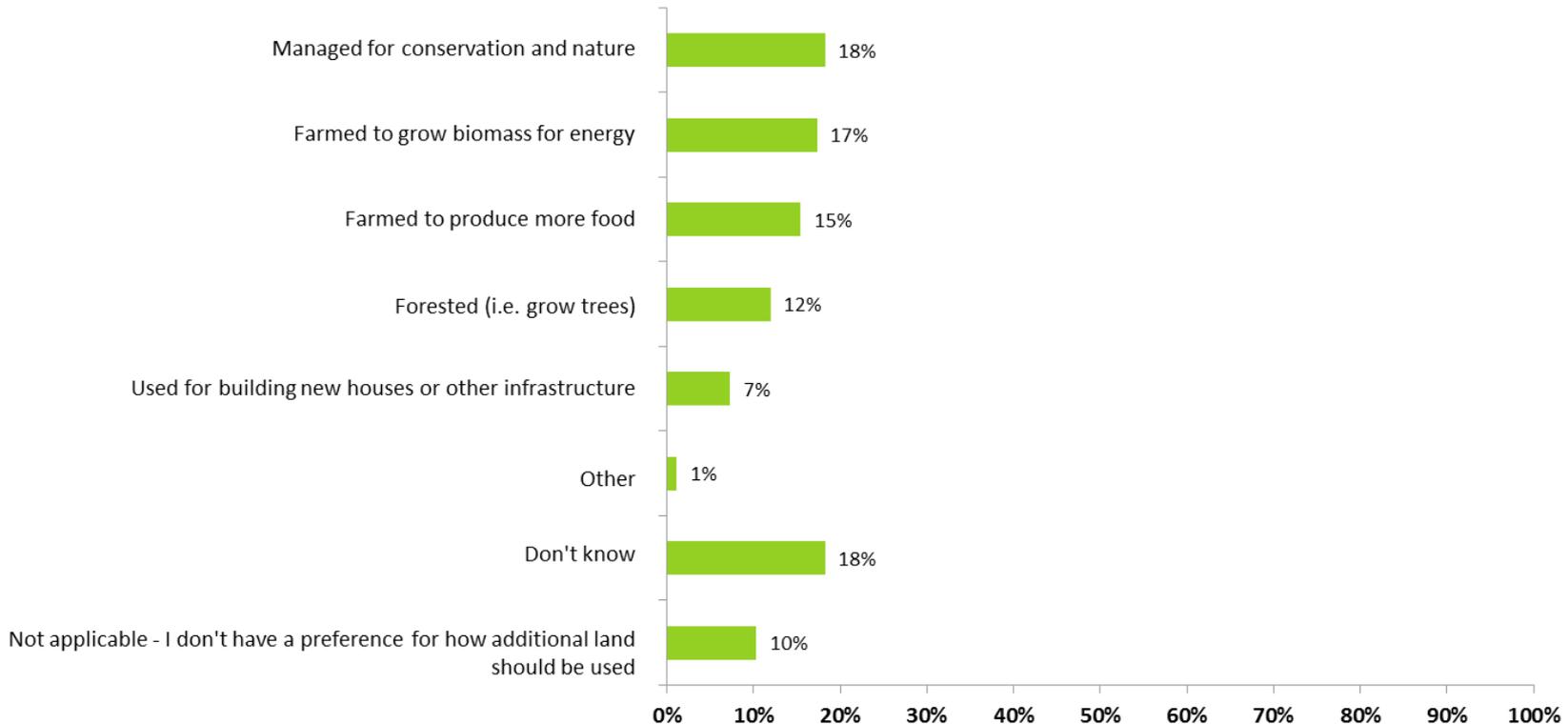


Food and fuel self-sufficiency are important, but respondents think there are opportunities to increase productivity

- There is no clear preference amongst the public for how 'spare' land should be used

Support
Awareness
UK production
Imports
Deployment

Q.... Which ONE, if any, of the following statements BEST describes how you think that additional land should be used?



Base: All GB adults (5,307)

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Case studies have shown that planting biomass feedstocks can complement, rather than compete with, food production



- Planting bioenergy crops on economically marginal land (e.g. low-yielding or under-used) can increase whole farm productivity
- Siting bioenergy crops considerably minimises any food production impacts
- Bioenergy crop planting enables farms to diversify their incomes and increase the profitability of land

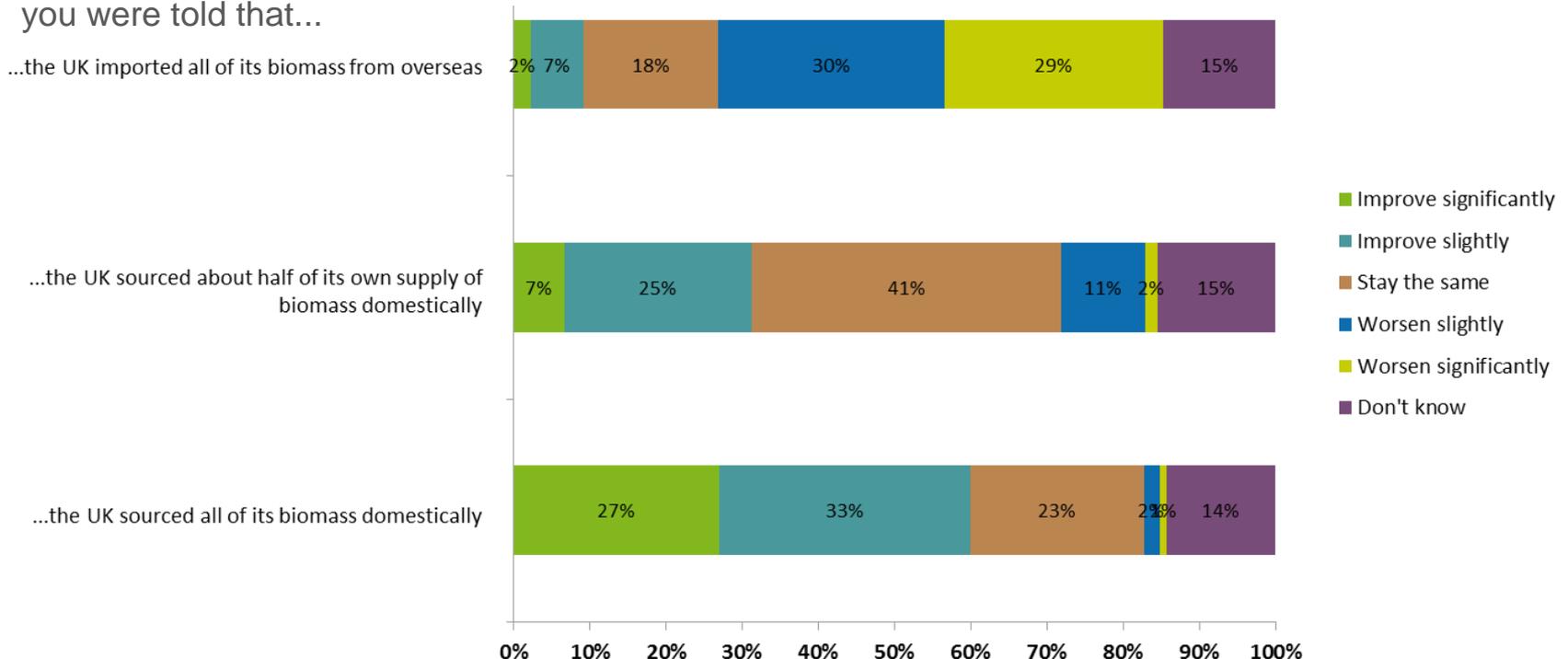


Respondents didn't want to rely solely on imports

- Concerns over imports were not limited to biomass for energy. Respondents were similarly concerned about the impact of importing food and fossil fuels
- The results suggest that the majority of respondents would accept a mix of imported and domestic biomass, providing at least current levels of food self-sufficiency are maintained

Support
Awareness
UK production
Imports
Deployment

Q. Would your opinion of the use of bioenergy in the UK improve, worsen or stay the same if you were told that...



Base: All GB adults (5,307)

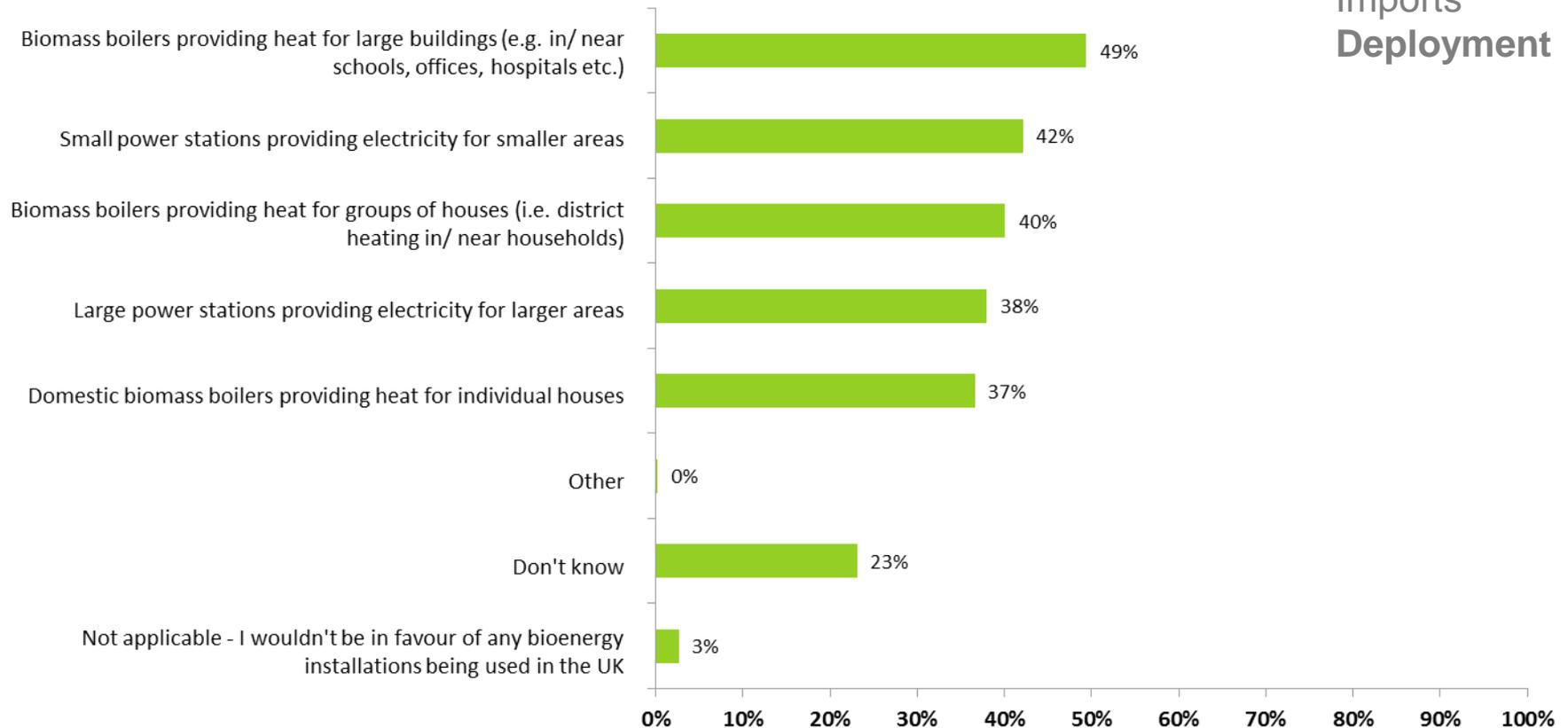
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There was no strong preferences for bioenergy to be deployed at a particular scale or location

Q. Bioenergy installations that generate electricity or heat come in various sizes. Which, if any, of the following bioenergy installations would you be in favour of being used in the UK? (Select all that apply)

Support
Awareness
UK production
Imports
Deployment



Base: All GB adults (5,307)

Source: YouGov plc 2016 © All rights reserved

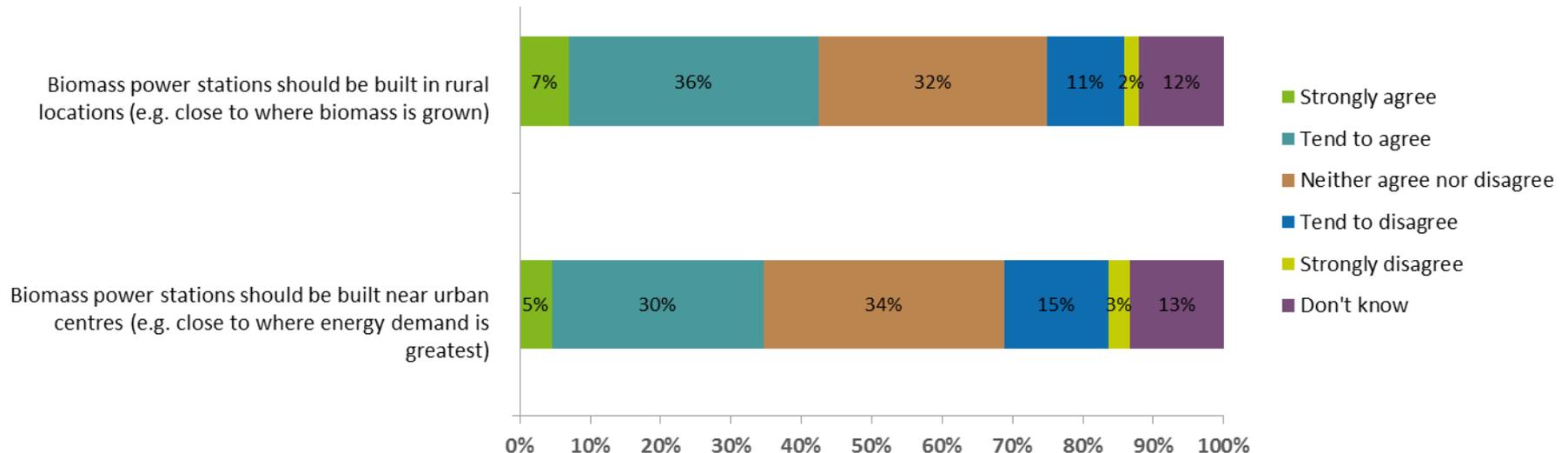


There was no strong preferences for bioenergy to be deployed at a particular scale or location

- 3% of respondents disagreed with building biomass power stations in both rural *and* urban locations
- Success of individual projects will depend on local support

Support
Awareness
UK production
Imports
Deployment

Q: Thinking about the construction of new biomass power stations... To what extent do you agree or disagree with the following statement?





Summary

- **Support** - There is strong public support for producing bioenergy in the UK from both biomass and waste
- **Awareness** – Respondents who had heard about bioenergy were more likely to support it
- **UK Production** – Land use competition was the biggest concern amongst respondents. However, the results indicate that people are willing for land to be used for a variety of purposes provided levels of food self-sufficiency aren't compromised
- **Imports** - Respondents didn't want to rely solely on imported biomass but results suggest that they would be comfortable with a mix of imported and domestic feedstocks
- **Deployment** - There was no significant preference for bioenergy to be deployed at a particular scale or location



Building the bioenergy sector in the UK – next steps



x3

ETI analysis indicates that meeting 2050 targets cost effectively will require three times more bioenergy to be produced by 2050s



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The Government was the most popular choice to lead the bioenergy sector amongst respondents but...

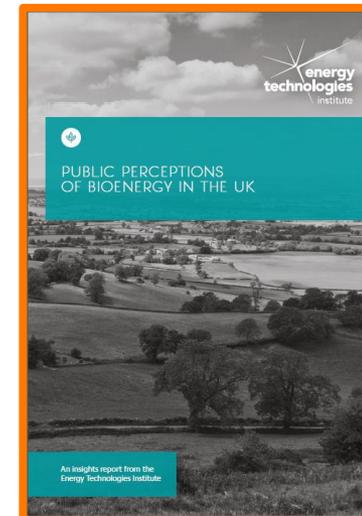
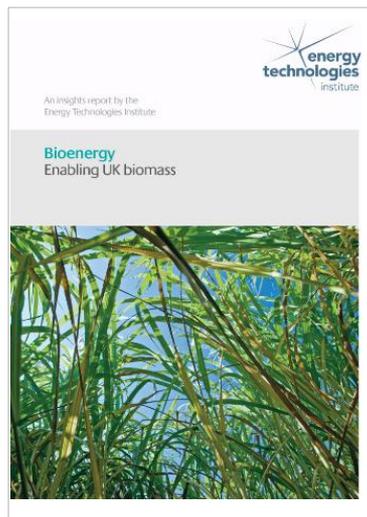
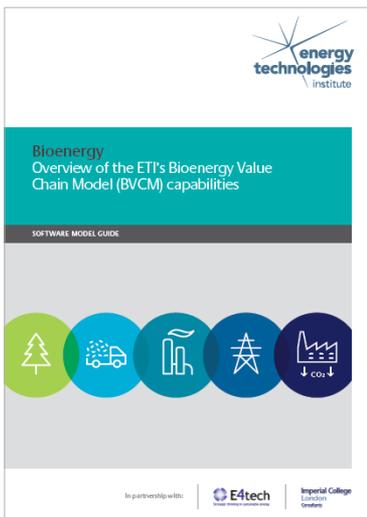
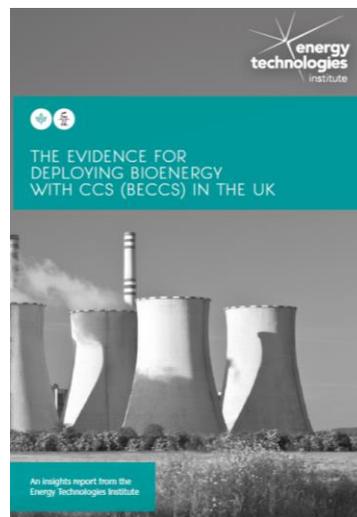
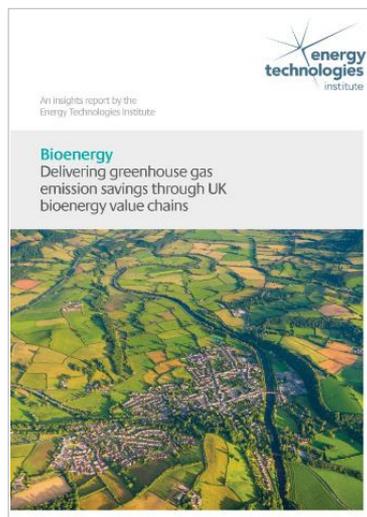
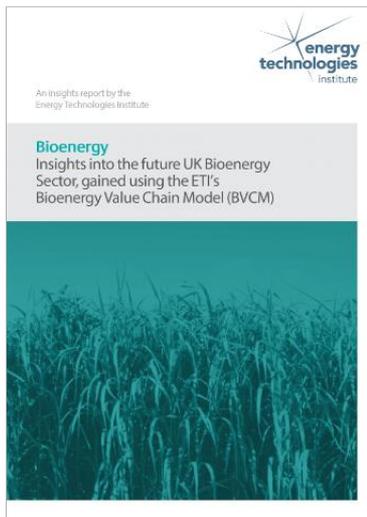
...respondents trust scientists/academics, independent consumer/industry watchdogs and environmental groups more to provide reliable information.



A role for independent organisations like the ETI to work with Government and other stakeholders to provide robust evidence to help shape and grow the bioenergy sector.



Thank you for listening – any questions?



<http://www.eti.co.uk/library>



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Annex - Bioenergy explanation

Bioenergy is the name given to the different types of energy produced from biomass or waste. Bioenergy can be in the form of electricity, heat, transport fuels (e.g. biodiesel or bioethanol) and gases such as bio-methane, which is similar to natural gas.

'Biomass' is any purpose-grown material (e.g. crops, forestry or algae). 'Waste' can include household, food and commercial waste, waste from agriculture or forestry, or sewage sludge.

Bioenergy can be produced on different scales, from domestic biomass boilers up to large power stations that produce electricity for more than one household.