

# || WHAT DO ALL THESE WORDS HAVE IN COMMON?

AI (Artificial Intelligence)

The Cloud

Gamification

Data

VR (Virtual Reality)

IoT (Internet of Things)

Automation

# STEM Education Programme Digital Data Session

Name

Job role





# WHO ARE SSE?

# || SSE VIDEO

# Introducing our aims

This session provides an inspiring insight into the energy sector, the variety of roles and real life work tasks. SSE understands the benefit of inspiring everyone to consider the energy sector and wide range of skills, both technical and essential we will require.

## Today's aims:

1. Understand SSE and power generation (specifically focusing on digital data)
2. Understand the job roles and opportunities available within this part of SSE's business
3. Develop essential skills

There are 8 highly transferable skills one needs to be successful in any job and to support the application of technical skills and knowledge.





# Which essential skills will this session focus on?

- During this session, you will have the opportunity to apply these essential skills in particular:



*Working cooperatively with others towards achieving a shared goal*



*The ability to find a solution to a situation or challenge*



*Supporting, encouraging and developing others to achieve a shared goal*

- The Universal Framework breaks down these skills into 16 steps to help support an individual's development.

# DIGITAL TECHNOLOGY AND THE WORLD OF WORK



# The Age of Digital

- What's your favourite piece of digital technology?
- Why might SSE care about digital technology?

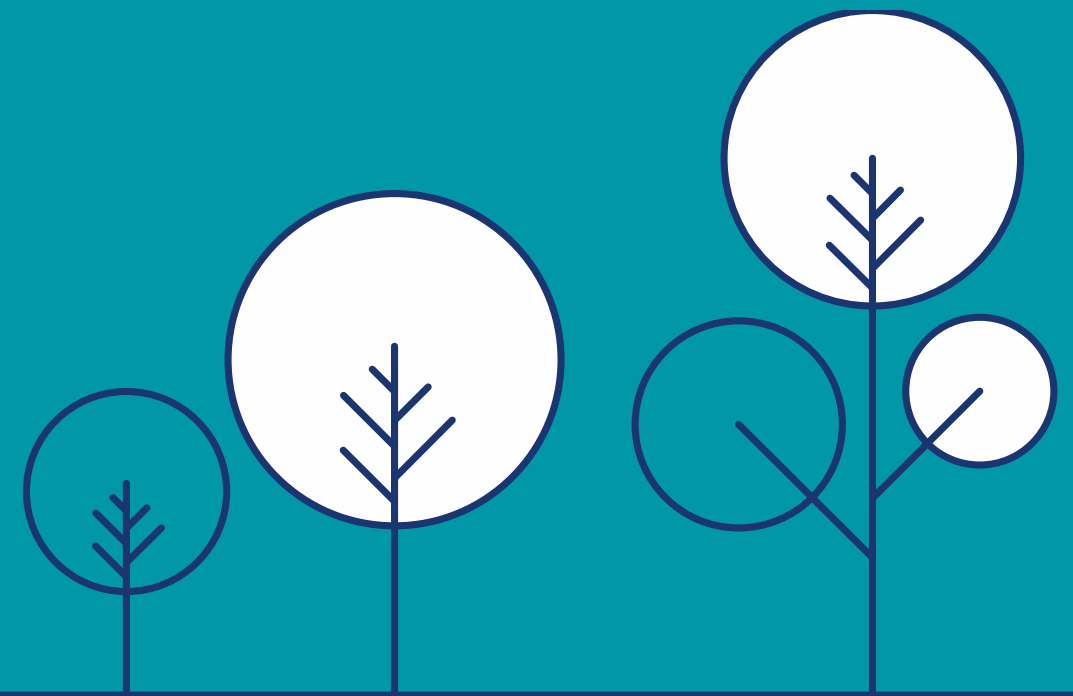


# The Future of Jobs

- Can you think of a job, a business or industry that doesn't use make use of digital technology is some way?
- Who are the people that develop technology? What jobs do they have?
- Would you like to have a job that involves digital technology in the future?



# TRUE OR FALSE?



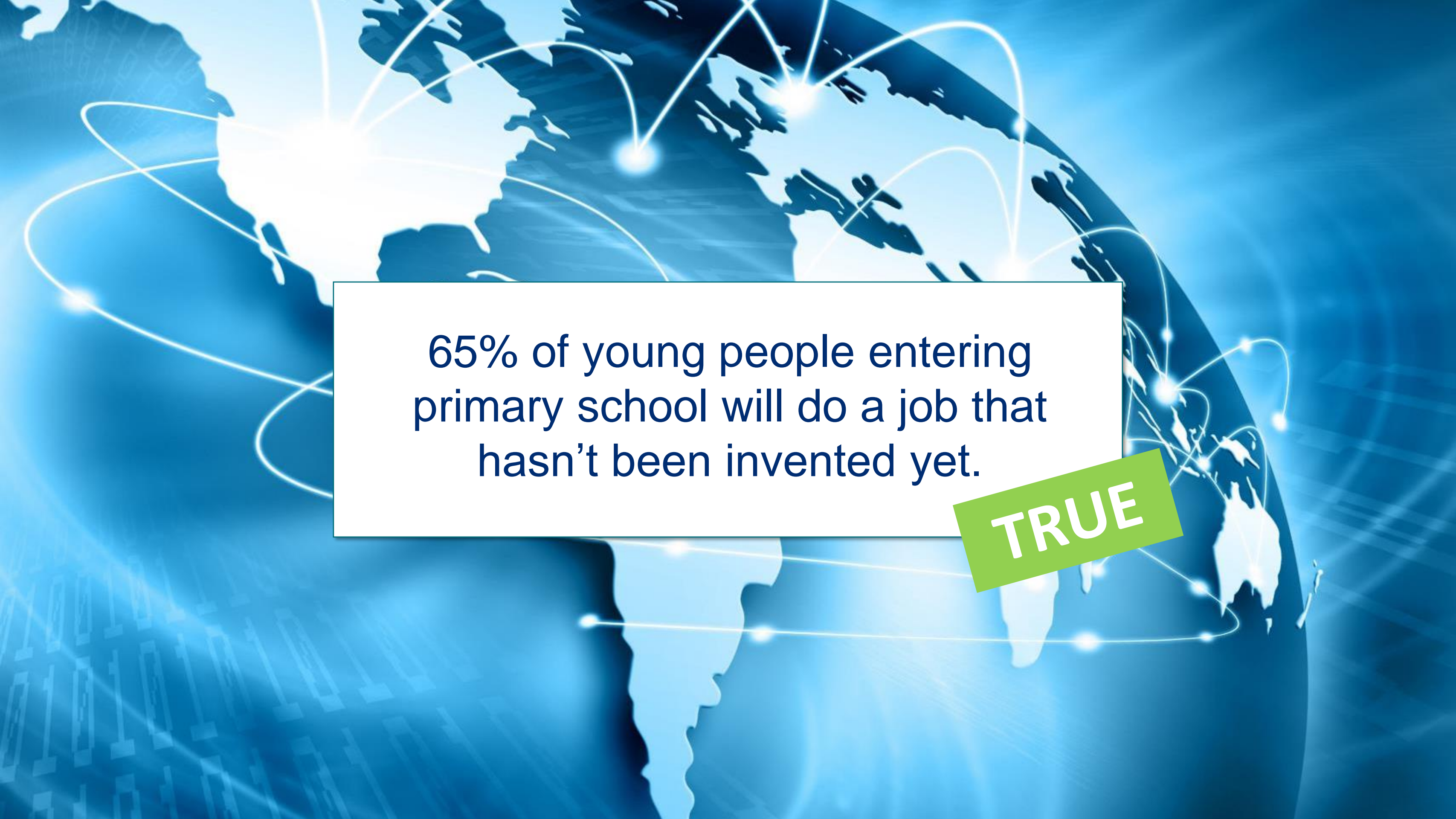




Technology will increase productivity  
by 40% by the year 2030

**TRUE**





65% of young people entering  
primary school will do a job that  
hasn't been invented yet.

**TRUE**





117,000 energy sector jobs need to be filled by the year 2030- many of these roles are related to technology

**TRUE**

# HOW HAS DIGITAL TECHNOLOGY IMPROVED BUSINESSES AND SERVICES?





# INTRODUCTION TO DATA

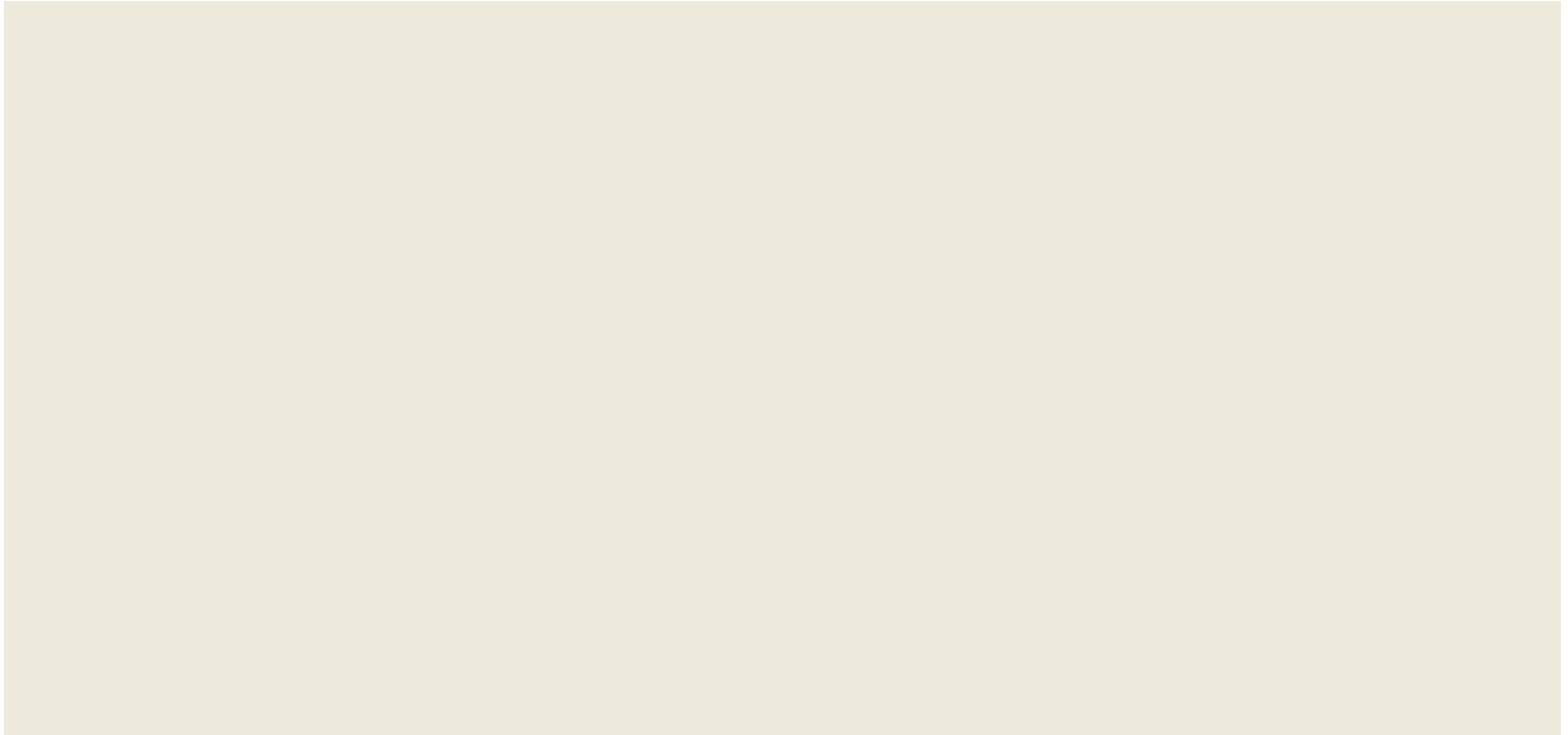
# WHAT IS DATA?

noun

facts and statistics collected together for reference or analysis.



# DATA VIDEO





# SSE AND DIGITAL TECHNOLOGY SPOTLIGHT



# SSE & AI – PROJECT SYNAPS

Artificial intelligence could halve the number of power cuts

- AI technology could help predict and prevent power cuts before they happen using new tech developed by SSE.
- The project will enable engineers to use a library of 'big data' taken from the network, in collaboration with AI to predict and locate a potential fault before it occurs.
- AI compares and analyses the data from the network and spots trends, patterns and irregularities.
- What is the impact for the company & consumer?



# SSE WIND FARM PLANNING

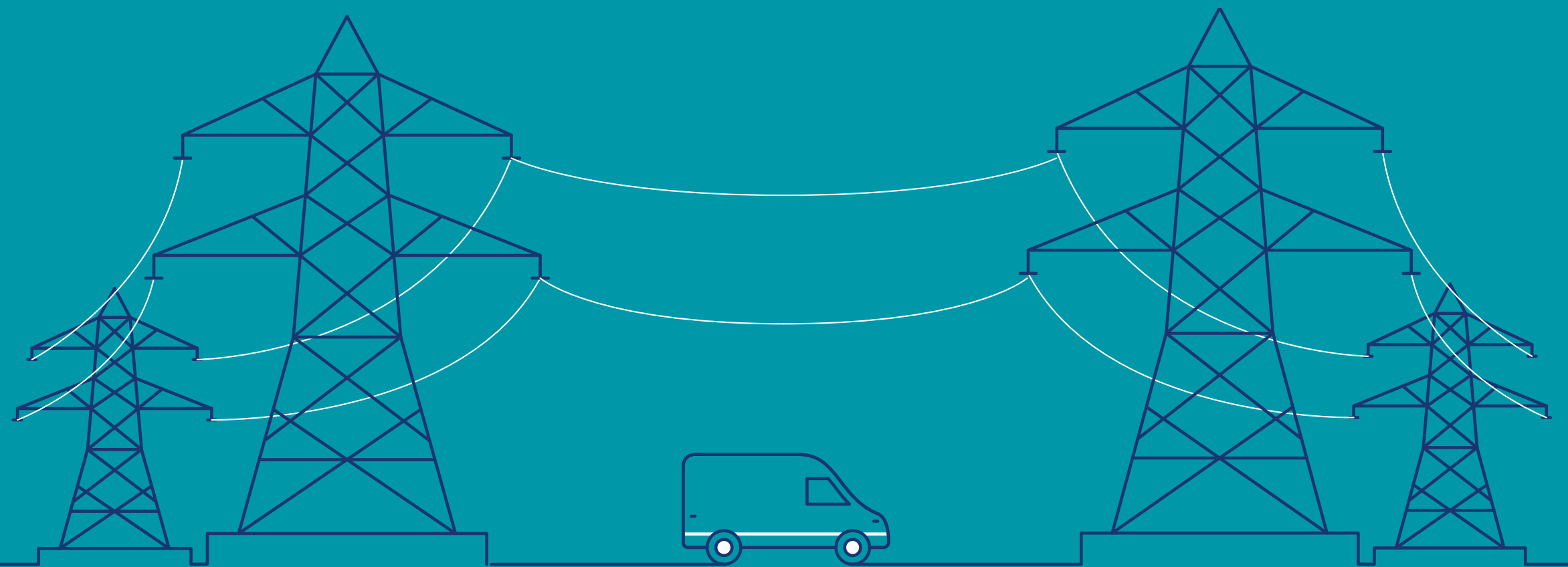
## Using Big Data to count puffins

- As part of the planning process to approve the construction of a new wind farm located in the sea, SSE used artificial intelligence technology to count the number of puffins that are part of the natural habitat in the area. Data was then used to indicate which areas would be most suitable for construction and not adversely impact puffins and other wildlife.
- Renewable energy is a priority for SSE. Infrastructure needs to be delivered in a way that does not negatively impact the environment.





# MEETING AN SSE DATA ANALYST



# MEET A SSE DATA SCIENTIST - RICHARD

## (1) What was your route into your current job?

For **A-Levels** I took maths, further maths, physics and design & technology.

For my **degree** I studied Electronic and Electrical Engineering at Imperial College. There's a strong focus on maths and programming. I continued on at Imperial College to complete a PhD in Digital Signal Processing. After the PhD I worked at a sports syndicate where we attempted to predict various future sporting events. **Finally, I joined the Data and Analytics SSE team in May 2020.**

## (2) What is the most enjoyable element of your job?

We work on many different and unique projects which present a good variety of challenges. At the start of each project, we generally don't know what direction to take to get to a solution, hence there is a lot of **problem solving and learning new skills**.

## (3) What advice would you give to a young person considering a job within the sector?

Data science uses skills from both **mathematics (particularly statistics) and programming**, so concentrating on both those areas would be essential. There are loads of excellent resources available online to help with both. I always find that working on projects in my own time particularly rewarding. The skills learnt are very **transferrable** so any learning around those subjects should treat you well in the future. Data science covers a wide variety of possible tasks, if you are interested in building machine learning models it is fairly common, but not essential, to gain a PhD first.



# DATA GENERATION



# DATA ACTIVITY



I contribute to group decision making, encouraging others to contribute

*What does this mean?*

Use the worksheet to discuss and record what data can be collected from:

- A TV streaming service
- A supermarket loyalty card

And what that data can be used for.





# WHAT IS THIS DEVICE AND WHAT DOES IT DO?

- Who has one of these at home?
- What data does it collect?
- What can be done with this data?



# SOLAR PANELS AND DATA TEAM ACTIVITY



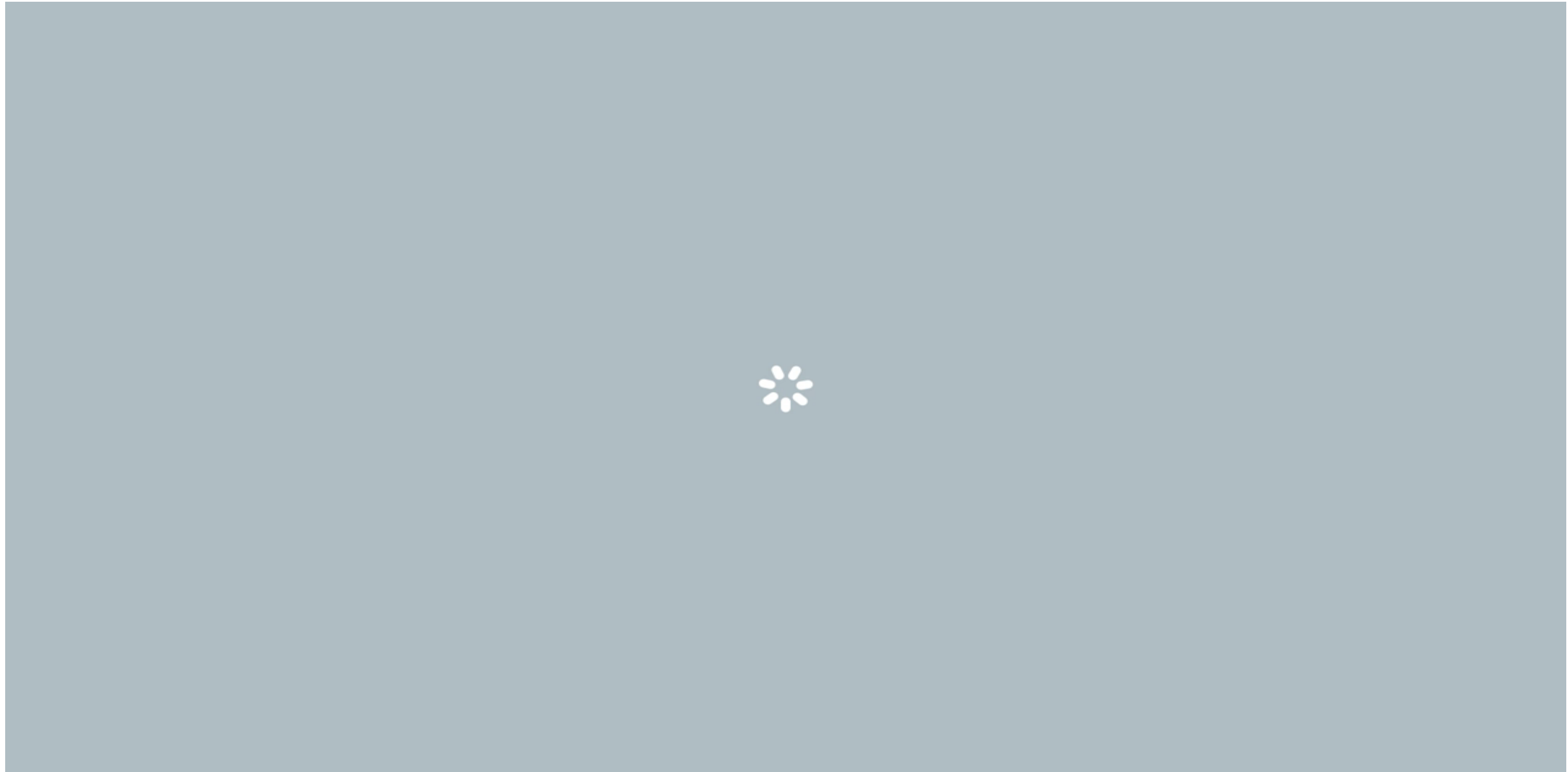


# WHAT ARE THESE AND WHAT ARE THEY USED FOR?





# || SOLAR PV VIDEO



# YOU ARE NOW A TEAM OF SSE DATA ANALYSTS!

## Working as a team

- Assign roles and decide a process
- Analysing smart meter data
- Helping SSE decide who would benefit most from Solar Panels
- Presenting back your decision and reasoning

20 minutes



I explore complex problems by building my understanding through research

[What does this mean?](#)



I recognise the strengths and weaknesses of others in my team and use this to allocate roles accordingly

[What does this mean?](#)



# HEARING BACK FROM TEAMS



# Plenary

- Based on today's session, explain one way that digital technology is transforming businesses or peoples lives?
- How did you demonstrated your essential skills today?



- How did you make good contributes to group decision making?
- Why might you need to encourage others to contribute their ideas?
- Did you do this effectively? How?



- Why is research an important part of exploring a problem?
- How did it help you today?



- What are some of the roles you needed within your team?
- How did you understand what you needed from people carrying out different roles in your team?

Activity	Time Allocation Guide
Digital technology in pictures	As the students arrive (Starter activity) 3 minutes to discuss
SSE introduction (volunteer intro where applicable)	5 minutes
Digital Technology and the world of work	10 minutes
Technology and the world of work ‘true or false’?	5 minutes
How does technology improve businesses and services? (carousel)	20 minutes
Introduction to data	5 minutes
Spotlight on SSE and data	5 minutes
Meeting an SSE Data Analyst	5 minutes
Data generation	10 minutes
Solar panels and data team activity	30 minutes
Plenary	3 minutes

# HOST FEEDBACK LINK

[Host Feedback](#)

