

Developing a podcast series on batteries

Translating battery and energy technology into more manageable information



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Abstract

Oftentimes chemistry is conducted in jargon. That's to say that researchers can frequently lose themselves and forget what the work they're doing does to affect not only the bigger picture - such as the net zero goals of the various countries (e.g. **2030 for the UK**) - but also how it affects everyday life. With over 600 million blogs available and only 5 million podcasts available (952 science podcasts according to the Royal Society of Publishing), the project aim was to shed light on current issues, developments and theories on battery technology. **I believe** that this could **set a precedent** for **researchers** better showing their work in a **more consumable** format to the **public**.

Structure

The task was to record a minimum of 6 recordings to then be edited and published accordingly. Below shows the **editing process** in order:



Figure 2: Demonstrates the journalistic process for producing a podcast.

Scripting

[What is energy?: 6-8 mins]

- Textbook definition: The ability to do work, make reference to the fact that useful work is the part that chemists are largely concerned with.
- Wacky/ fun ways people have tried to develop energy sources... cars running on vegetable oil; nightclubs storing heat from attendees; jellyfish fluorescent proteins.
- Explain conservation laws to the audience? **Intermission**

[History of Batteries: 6-8 mins]

- A brief history of who initially developed them.
- How prototypes of batteries are different from now.
- Examples and anecdotes of how much it has changed in researchers' eyes.
- What would a pioneer of battery science think of today's progress?
- Where do you think they would be stumped?
- Similarly, if you were to redevelop batteries for the first time, which avenues would you find yourself down?

[What, where, how of Batteries: 15-20 mins]

- How impactful of an invention are batteries?
- What are the uses of batteries? Where do you envision them being used?
- How do (in audience appropriate language) batteries work - there can be an **intermission** in background explaining alongside recording.
- Different types - lithium ion, sodium, hydrogen...
- What are the current challenges of the above mediums?
- What are researchers currently working on that might change this? (Could be appropriate to use some published papers to case study and discuss)

Episode 4/5 – Alternative energy sources and energy conversion

Hosts: **Andy Abbott, Paul Anderson & Gavin Harper**

Audience: Mixed

Podcast Abstract:

The third in the Electrifying! Podcast series.

Join hosts Professor Abbott and Karl Ryder as they educate and navigate you through the changes occurring as we transition from carbon to renewable energy sources.

Today's episode guides you through the different types of renewable energy sources and balances the energy recovered with the energy needed to produce it. We look at the pioneers who developed the new technologies and the trials required to commercialise it.

A few suggested places to start **Andy, Karl, Guillaume, Al**

[Music Intro]

Example: Welcome to "Electrifying", a brand-new podcast aimed at shedding light on the most important topic in the Universe: **Energy**

Introduce ourselves here

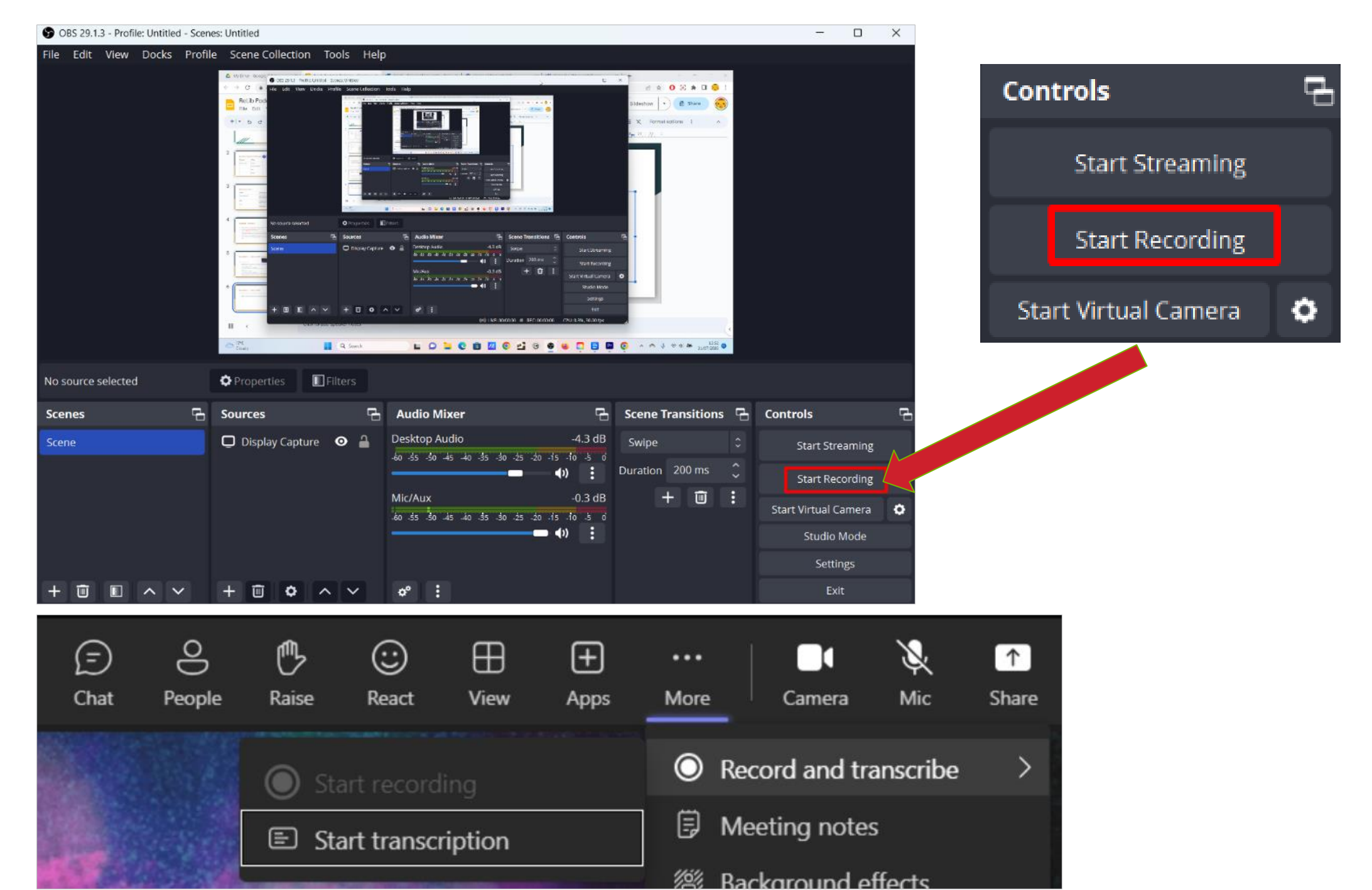
We now have a rough idea of how much energy we need to live and the amount we use every year. We know that most of it comes from carbon and what the consequences are of producing too much CO2. We know that we need to decrease our dependency on carbon and shrink our carbon footprint.

Figure 1: Shows two script alongside each other, where the left-hand one is the first iteration, and the right is the final iteration.

Original Script	New Script
Question-based	Key & Script based
Gives clear topics and little room to deviate	More scripted areas but room to deviate more
More content for longer podcast	Potentially less content for more consumable podcast

Table 1: Discusses the differences between the scripts and why the final iteration is an improvement.

Recording



OBS (Open Broadcast Software)

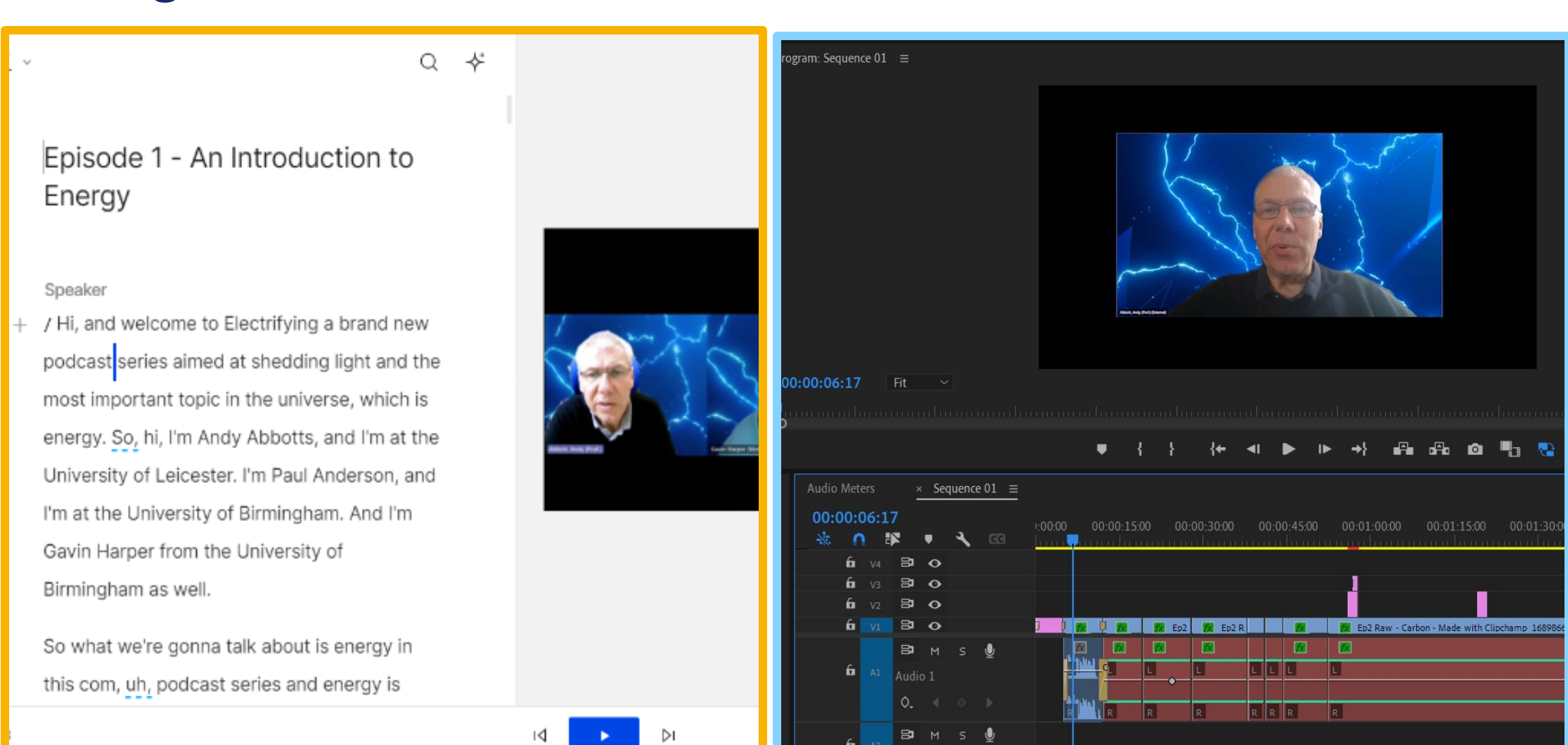
Higher quality recording options, allows for **audio filtering** and suppression. Allows for re-recording (exporting) from Adobe Premiere Pro

Microsoft Teams

Lower skill floor for starting recordings, allows for **meeting online** as well. This allows for the initial podcast recording.

Table 2: States the differences in recording software and why both are necessary.

Editing



"Rough" Editing

Displays like a script allowing trimming video to the word. This means there is **no multi-track** feature, uses the **Descript** software.

Provides a **review** of what's been said to make sure **content** is relevant and interesting.

Allows for **AI generation** (using the speaker's voice) of **new words** to fill in content & to **edit the transcript** for subtitles.

"Precise" Editing

Allows audio to be spliced, interpolated and audio adjusted. This is using a multi-track system – the program is **Adobe Premiere Pro**.

New audio (music & advertising breaks) can be introduced – potential income for research groups.

Allows for **equivalent video** to be made and posted on Youtube (video edits over the top of audio)

Table 3: Discusses the abilities and possibilities of both forms of editing.

Publishing

- The image displays **13 plays on release** – this is to say that the podcast **retained viewership** of those that listened to it.
- The idea is to release several (**8**) **pre-edited & recorded podcasts** fortnightly – ensuring **content for 16 weeks**.

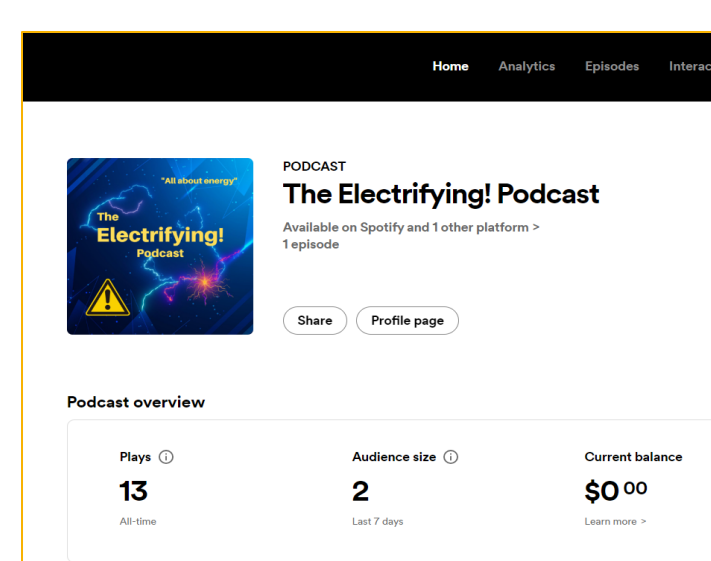


Figure 3: Podcast host website for Spotify showing analytics of 1st hour of release.

Conclusion

The **podcast** produced **demonstrates** to other researchers that the **layman** are **interested** in hearing about current work. In turn this **inspires students** to follow a career in energy.

INTERN BIO

Francis is studying Chemistry with a Modern Language at the University of Birmingham.

Interested in science communication and aspiring to make science more available to all, more specifically in energy.

