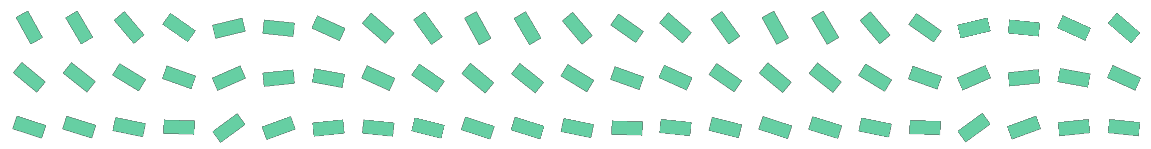


SUSTAINABLE ENGINEERING

The energy footprint of BBC radio services: now and in the future

Chloe Fletcher – Sustainability Data Scientist

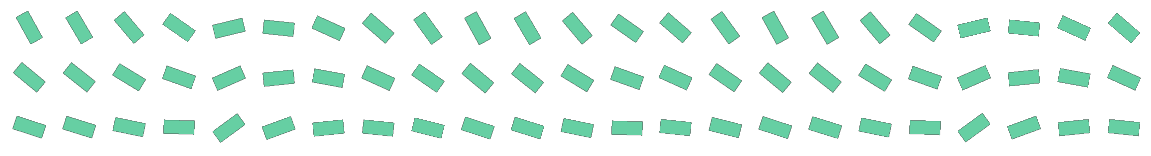
WorldDAB General Assembly, 3rd Nov 2020



THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Objectives

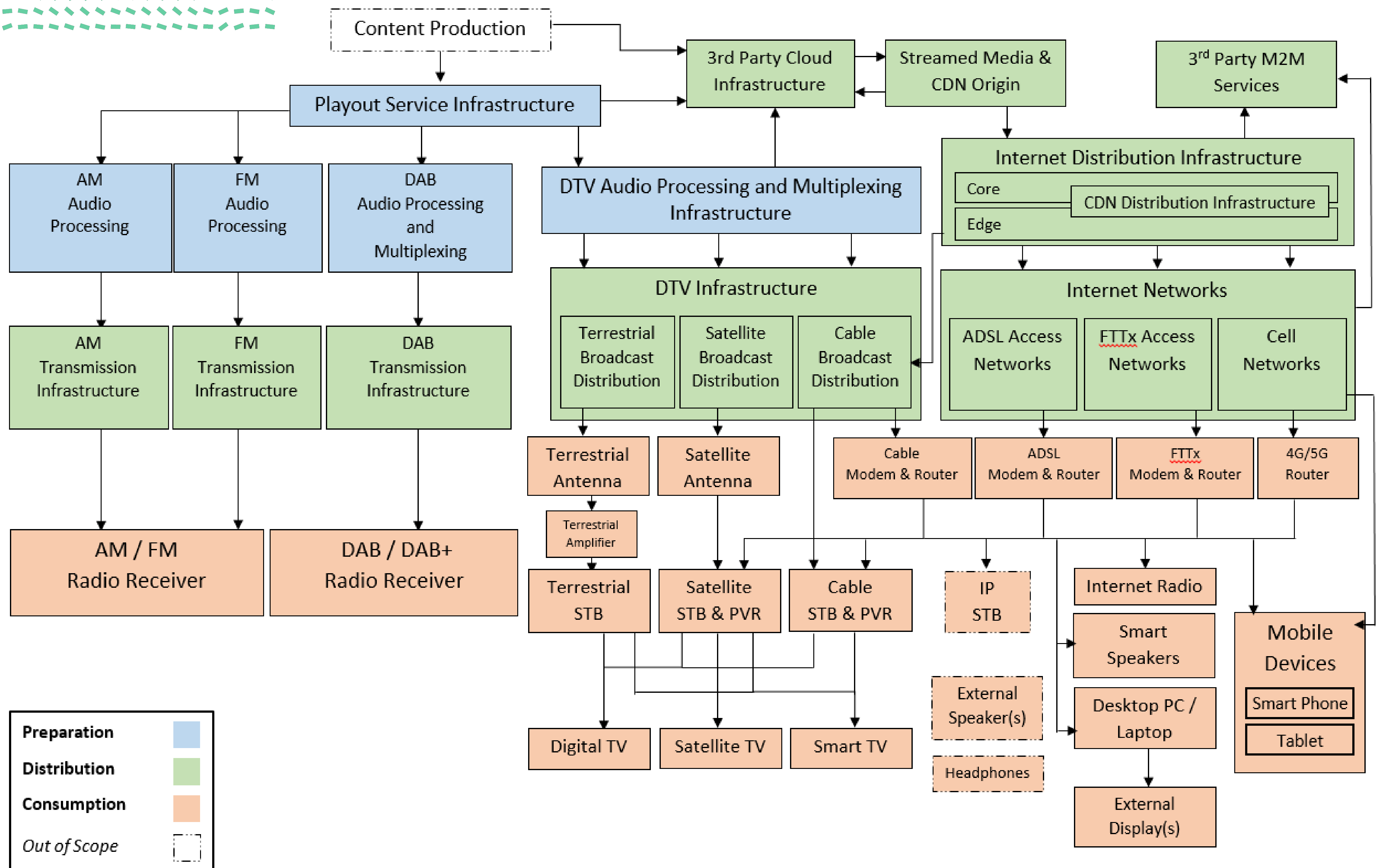
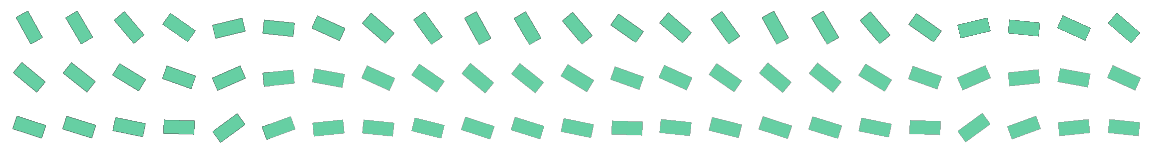
- To quantify the current energy required to prepare, distribute and consume BBC radio
- To model how energy consumption may change over time under various scenarios
- To identify largest drivers of electricity use



THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Scope of Study

- Reference year used was 2018
- Scenarios modelled over 20 years
- Radio defined as live content, podcasts and listen again
- Only **UK context** considered



Preparation ■

Distribution ■

Consumption ■

Out of Scope

THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

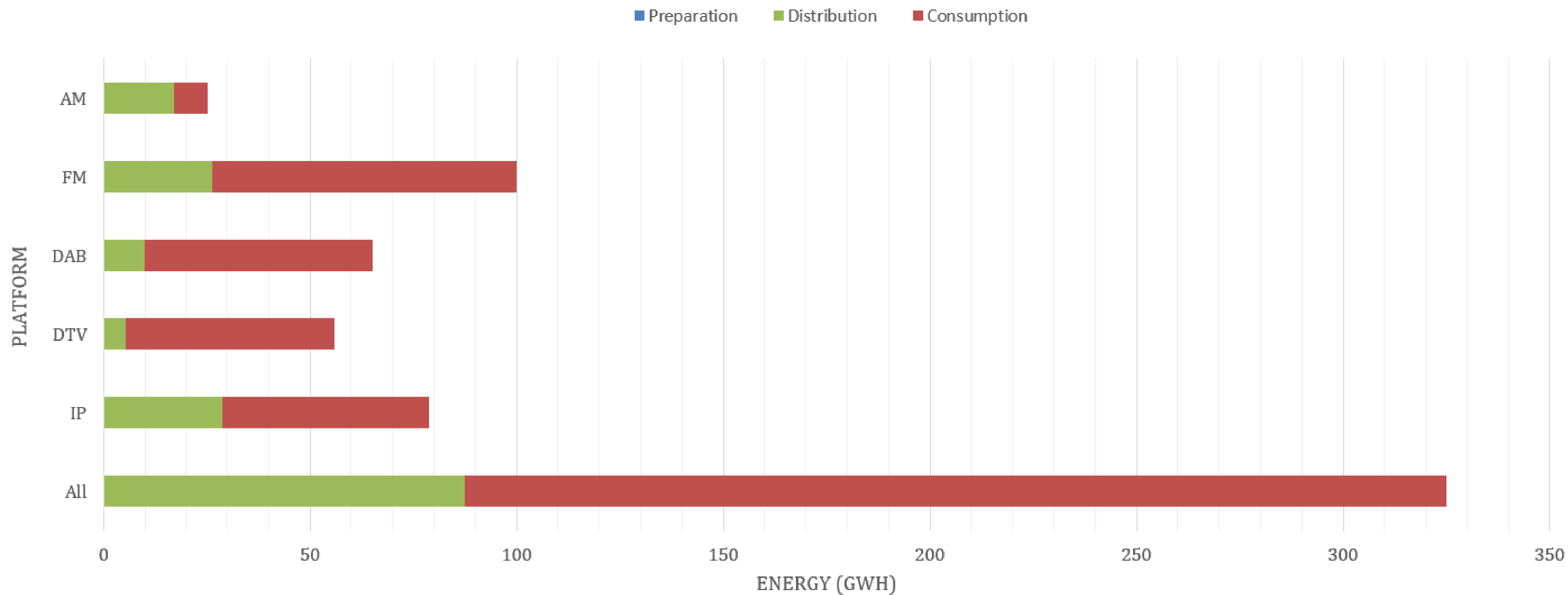
Baseline Results

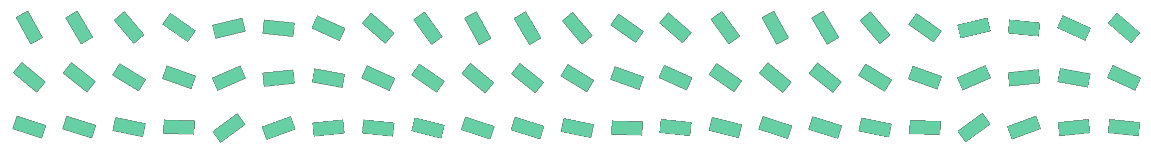


THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Annual Energy Use by Radio Platform

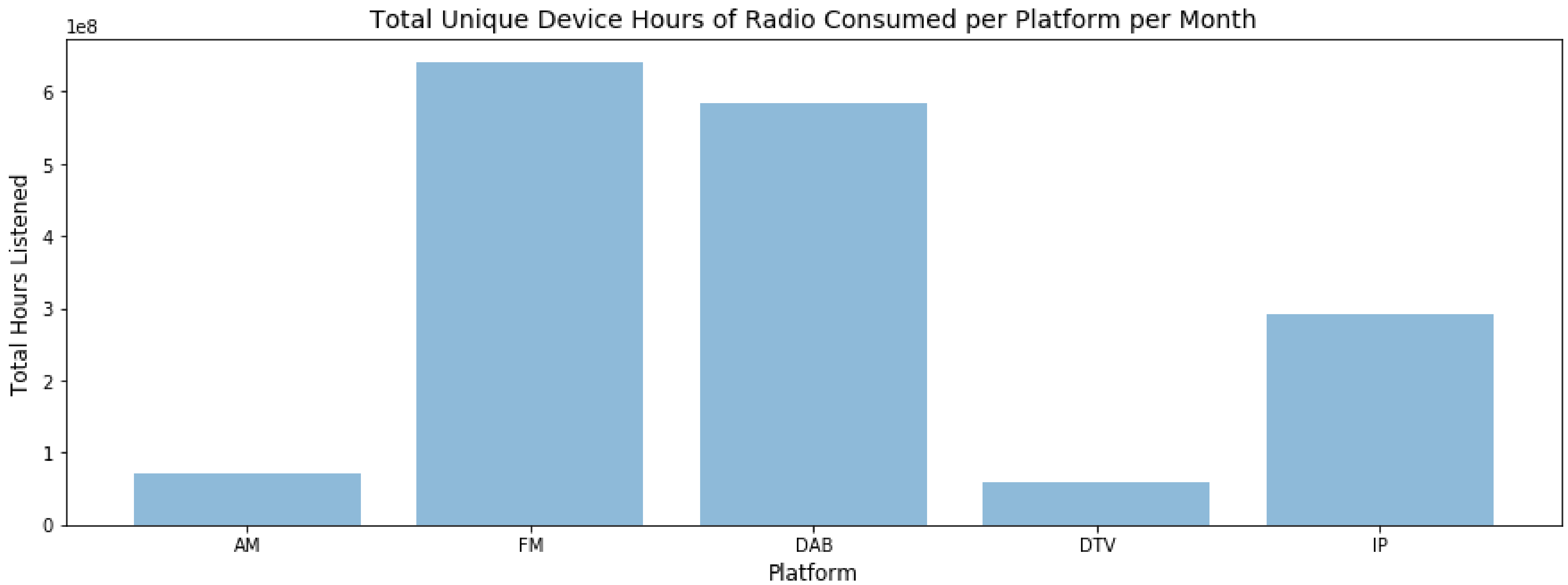
Annual Energy Use by Radio Platform (2018)





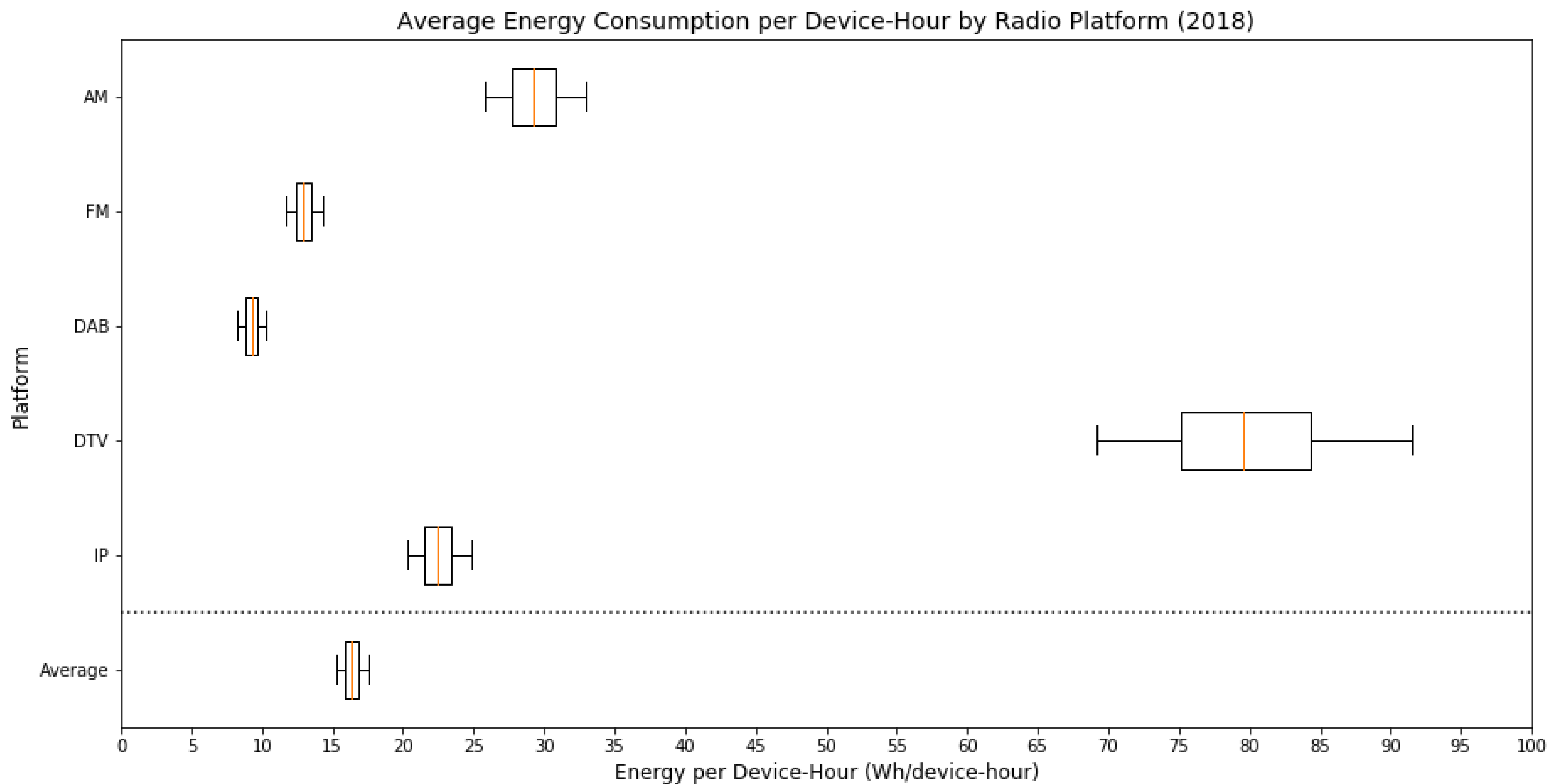
THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

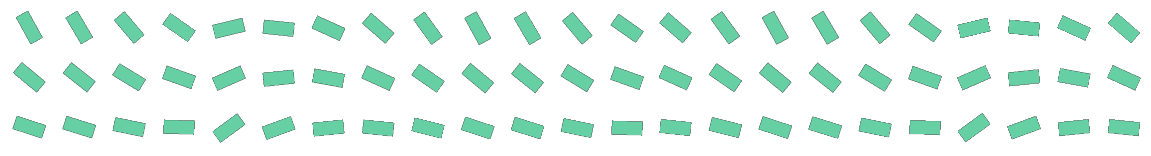
Device Hours per Platform



THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Average Energy per Device-Hour





THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

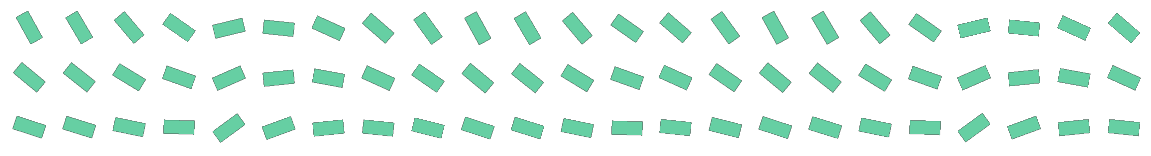
Key Findings – Baseline

- **BBC radio** utilised **325 GWh** in 2018 (approx. **0.1%** of **UK energy**)
- **Consumer devices** used the **largest** amount of **energy**
- **DAB least** energy intensive platform
- **DTV most** energy intensive platform
- Radio device **standby power** was the **biggest energy driver**

THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Scenario Results

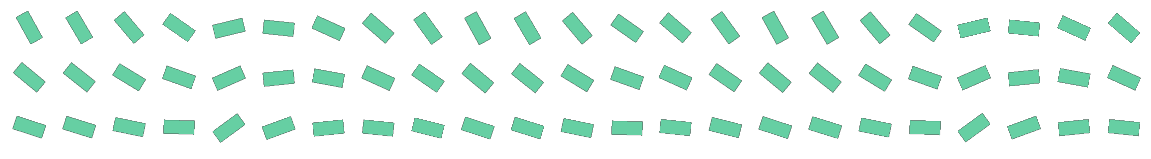




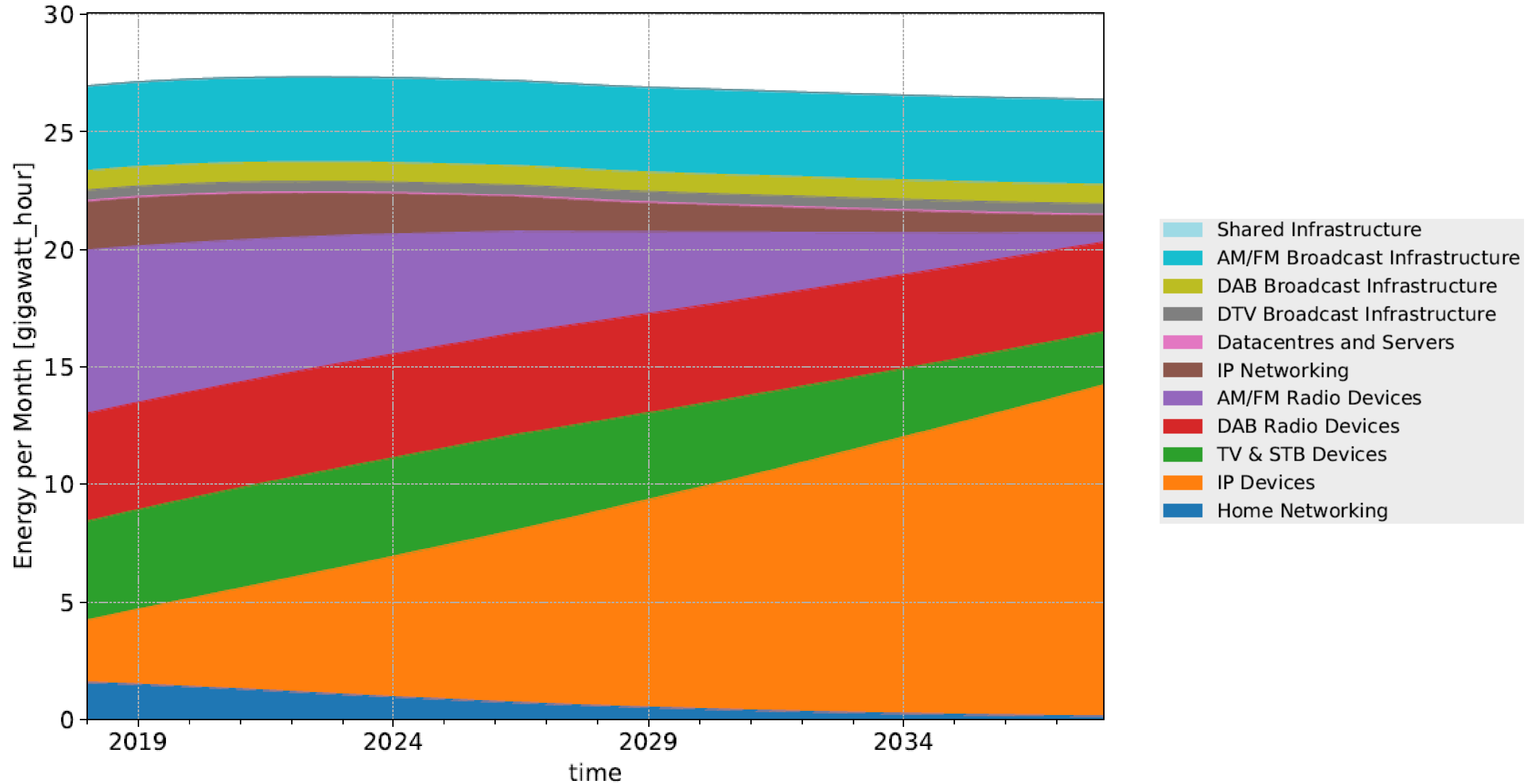
THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

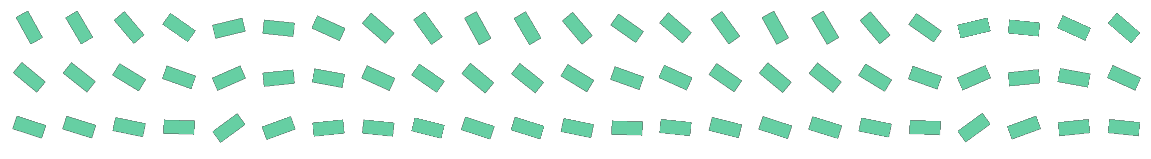
Scenarios

0. Business As Usual – All Platforms Retained
1. Digital Only – Switch Off LW/MW/FM (2030)
2. DAB/IP Only – Switch Off Analogue & DTV (2030)
3. IP Only – Switch Off Analogue, DTV & DAB (2030)

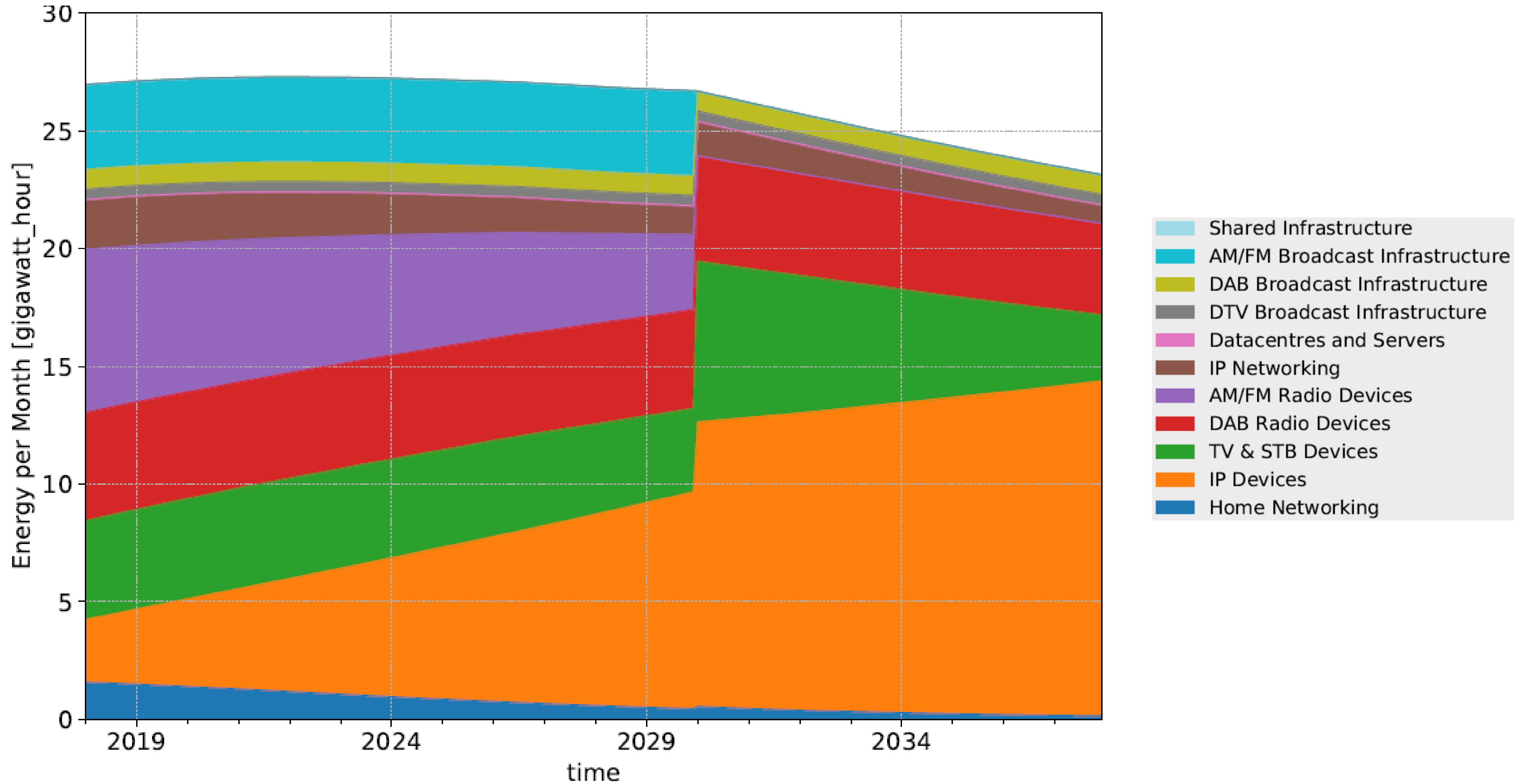


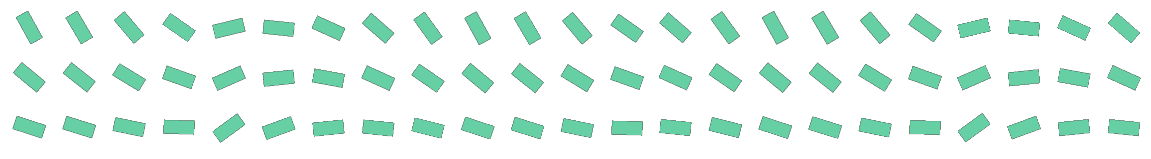
Scenario 0: Business As Usual



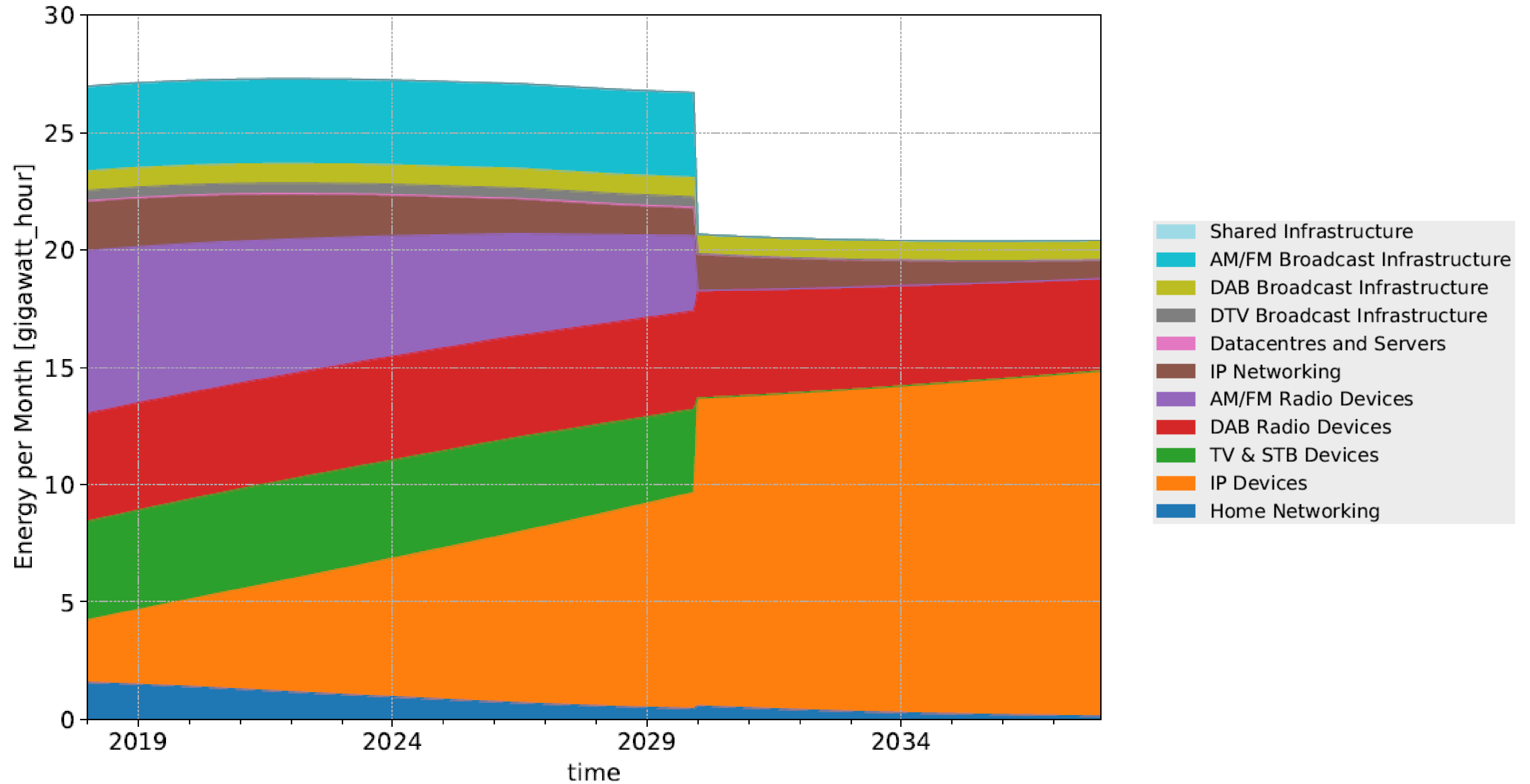


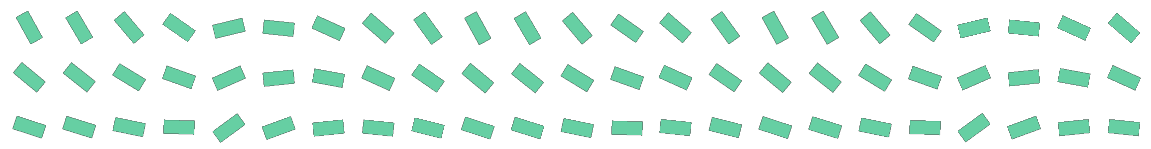
Scenario 1: Switch Off LW, MW and FM (2030)





Scenario 2: Switch Off Analogue and DTV (2030)



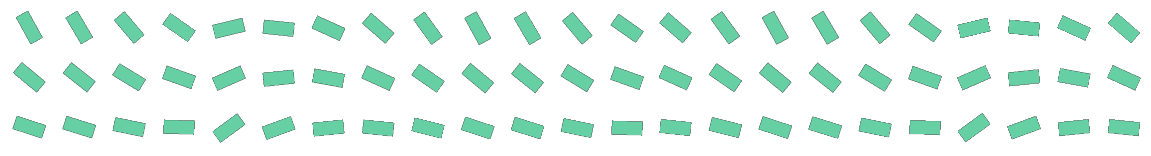


THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Standby power is really significant...

If people turned off devices when not in use, energy could drop by:

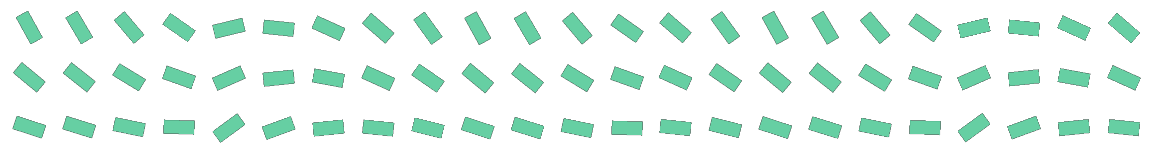
- **38%** (radio devices and smart speakers)
- **21%** (smart speakers only)
- **17%** (radio devices only)



THE ENERGY FOOTPRINT OF BBC RADIO SERVICES

Key Takeaways

- **All scenarios** showed energy saving **potential**
- Retaining **DAB and IP** led to **largest energy saving**, twice as much as IP only
- **Results dependent** on which **devices** consumers switch to
- Radio set and smart speaker **standby power** are **significant**



Thank you

Chloe Fletcher
Sustainability Data Scientist, BBC R&D
chloe.fletcher@bbc.co.uk

Paper

Fletcher, C. and J. Chandaria (2020) 'The energy footprint of BBC radio services: now and in the future', *BBC Research & Development White Paper*

Sustainable Engineering

<https://www.bbc.co.uk/rd/projects/sustainable-engineering>

