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# Evidence-informed policy making for local net zero – a case study of the West Midlands, UK

Laurie Duncan

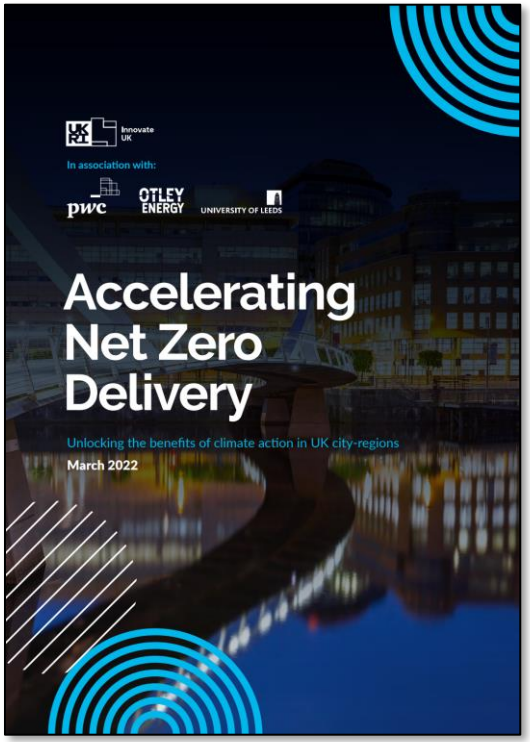
PhD researcher, Energy Systems and Policy Analysis

Supervisors: Dr Jonathan Radcliffe, Dr Louise Reardon

Email: lxd006@student.bham.ac.uk

# Background

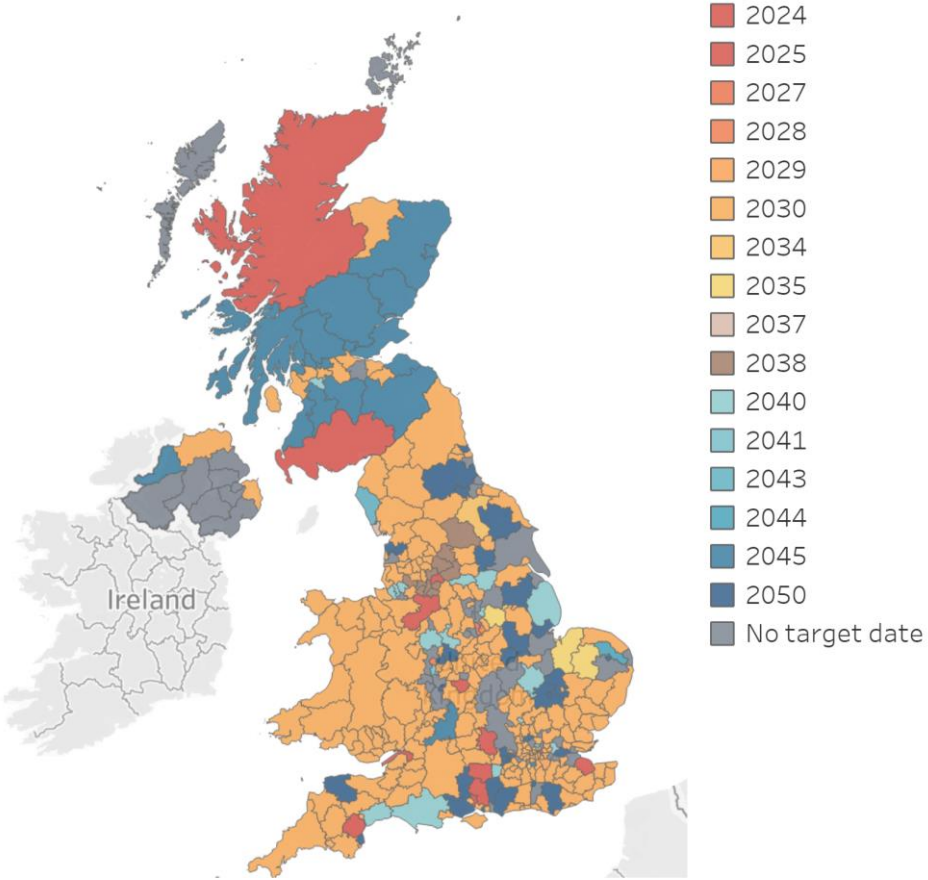
- Innovate UK (2022) – place-specific approaches to net zero can reduce cost by factor of three and double the co-benefits compared to place-agnostic approaches
- Climate Change Committee (2020) say local authorities* have a significant influence on emissions, especially using softer powers (communicating, partnership brokering etc.)



# Background (2)

- 308 out of 409 authorities have declared climate emergencies
- Many have also set target dates/written policies for reaching net zero

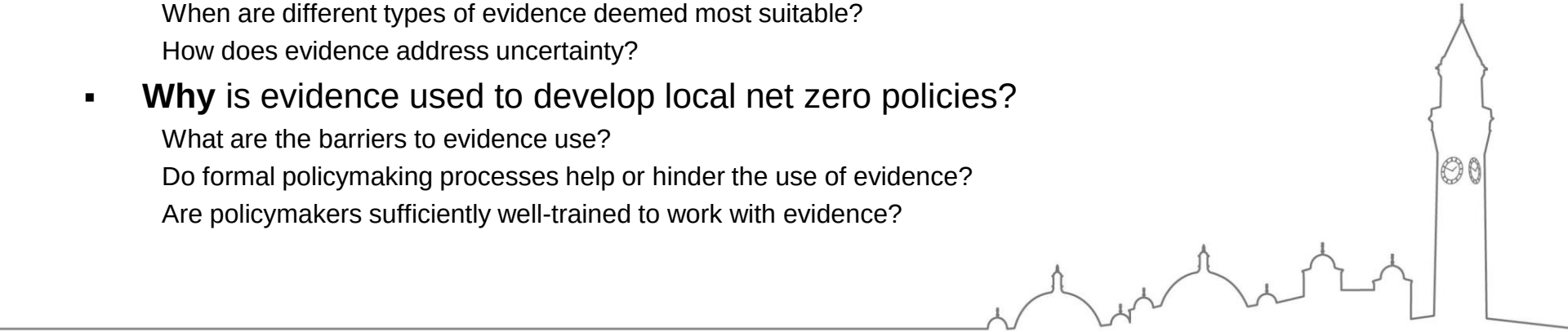
  Council estate vs. area-wide
- Most built around a carbon reduction pathway
- Climate Emergency UK (2021) found that only 37% of LA plans say how they're going to work with business and industry




*Aether (2022) - Progress towards UK local carbon neutral targets*

# Research Questions

- **What** evidence is used to develop local net zero policies?
  - What is considered to be good evidence for energy policy in local government?
  - Where does good evidence come from?
  - Are any types of evidence missing?
- **How** is evidence used to develop local net zero policies?
  - At which stage(s) of the policymaking process is evidence used?
  - When are different types of evidence deemed most suitable?
  - How does evidence address uncertainty?
- **Why** is evidence used to develop local net zero policies?
  - What are the barriers to evidence use?
  - Do formal policymaking processes help or hinder the use of evidence?
  - Are policymakers sufficiently well-trained to work with evidence?



# Evidence in policy

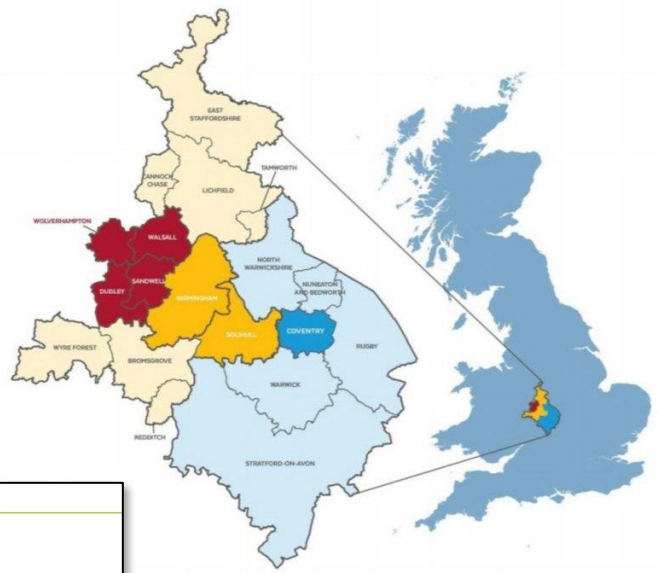
| Evidence-based | Evidence-informed |
| --- | --- |
| “What works?” | “What works, for whom, in what context?” |
| Instrumental use | Interactive use |
| Evidence hierarchy | Evidence principles |
| Increase supply/utilisation | Improve mobilisation |

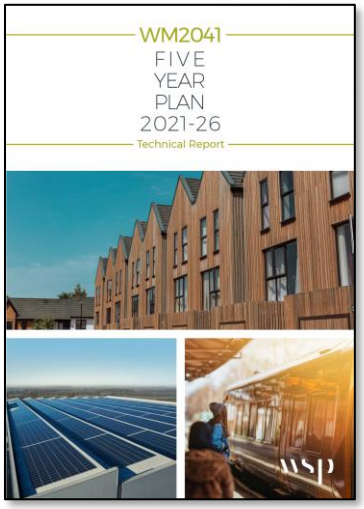
# Research design

Single case study of the West Midlands, UK

Main focus: WM2041 Five Year Plan (Net Zero Strategy) for WMCA

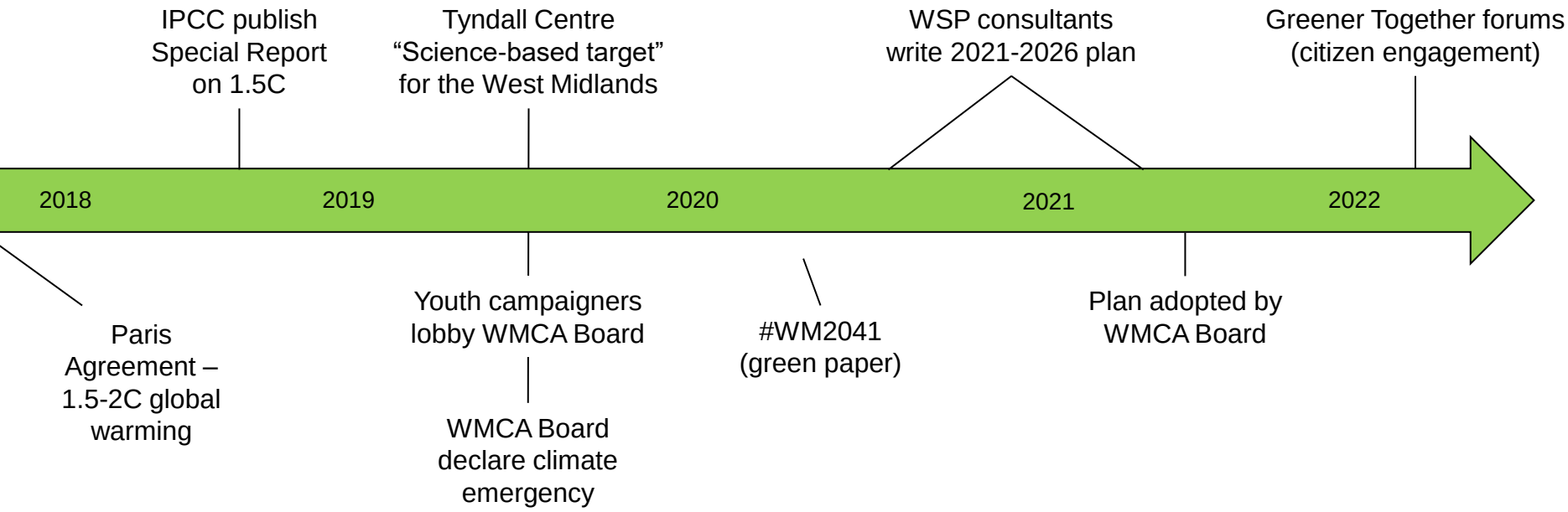
Semi-structured interviews with 26 stakeholders (councillors, officers, consultants, engineers) and documentary analysis



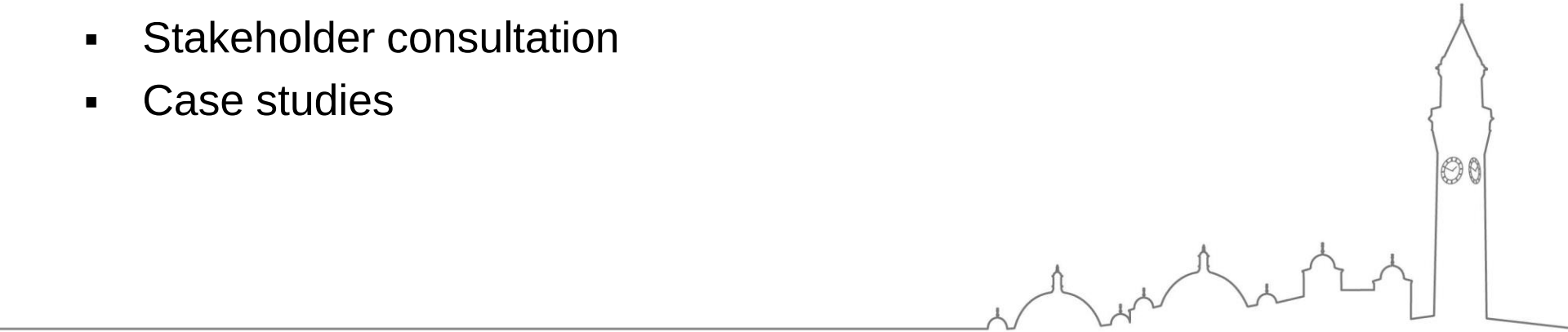

West Midlands Combined Authority

# Timeline


IPCC publish Special Report on 1.5C
Tyndall Centre “Science-based target” for the West Midlands
WSP consultants write 2021-2026 plan
Greener Together forums (citizen engagement)
2018
2019
2020
2021
2022
Paris Agreement – 1.5-2C global warming
Youth campaigners lobby WMCA Board
WMCA Board declare climate emergency
#WM2041 (green paper)
Plan adopted by WMCA Board

# What counts as (good) evidence?

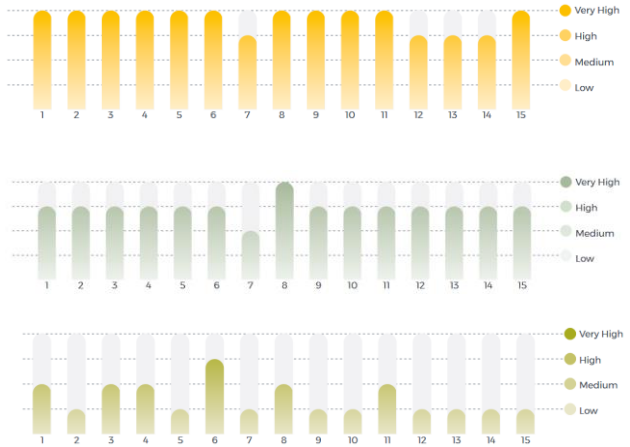
- Modelling
- Previous policies
- Data
- Expertise
- Stakeholder consultation
- Case studies



# Five Year Plan energy and carbon model

- Business as Usual baseline – what's already been committed
- 15 actions across 5 sectors – Very High, High, Medium, Low ambition goals translated into carbon savings (via energy)
- Three scenarios:

  Maximum – in line with Tyndall Centre
  Accelerated – "technically feasible"
  Moderate – net zero after 2050



# Modelling

- Different interpretations of scenarios

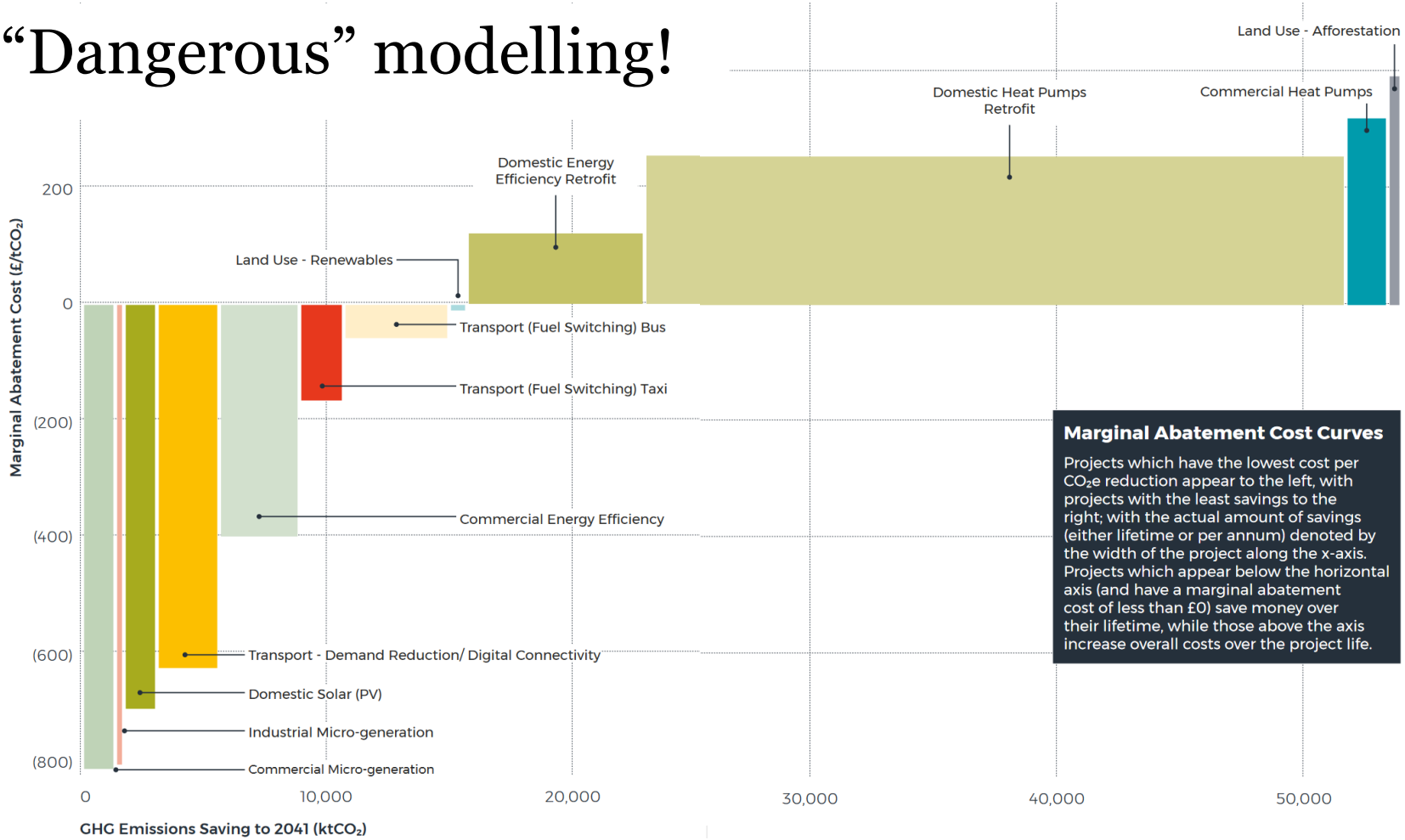
  WMCA Board “adopted” the Accelerated scenario – typically modellers use scenarios to explore futures

- Consultants were aware that the low-medium-high framing led to choosing a scenario – but felt that the fact that they had explored the other options was satisfactorily rigorous (“realpolitik of modelling”)

  “**The scenario sort of picked itself**” (WSP)

  “there is a risk that politicians can say, **we just paid you a load of money to tell us how to do it**, not how *not* to do it” (WSP)

# “Dangerous” modelling!



# MACC modelling

- Seen by some as overly simplistic/misleading

  “the data they capture and present back is **misaligned to the policy decisions** and sphere of influence and activity of the people for whom they're providing the data, so **it's a waste of money** . . . telling West Midlands politicians that, say, solar panels are cheaper than fuel cells, is **not only useless, it's really dangerous and irresponsible and professionally wrong**, it's just not a good use of data.” (Energy Capital/Consultant)

  “the **main determinant of the economic value** [of these technologies] **is actually place-based** quite often, it's contextual to the particular application and the infrastructure that exists in that in that location” (Energy Capital/Consultant)

# Output of previous policy processes

- Previous policies/targets become the starting point for new policies

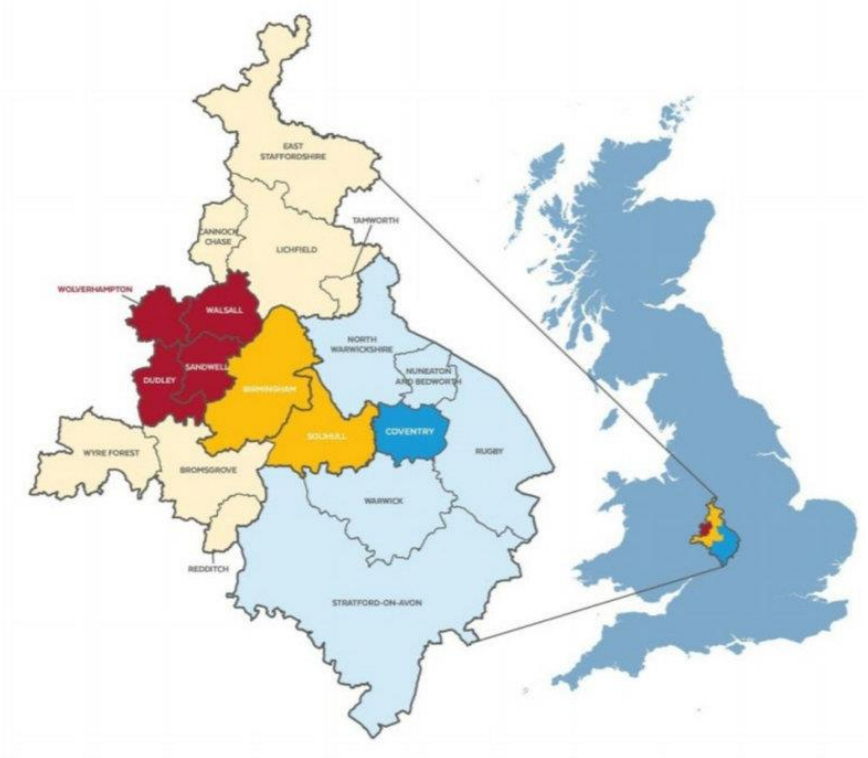
  IPCC report → Tyndall Centre report → WM2041 report → Five Year Plan

- But previous assumptions are glossed over

  What is a “science-based target”? Compliant with Paris Agreement

  Inherent ambiguity to net zero: "I have a feeling myself, that **this will gradually migrate towards minimising carbon usage, rather than saying eliminating it all together**, because I think there will be some users that will need carbon" (Councillor)

  Boundary differences: Tyndall Centre analysed 3-LEP geography, Five Year Plan only covers the seven metropolitan boroughs



# Data

- A lot of dependence on UK Government's annual local authority greenhouse gas emissions data – seen as insufficient
  - Published with a two-year lag – makes monitoring very challenging
  - "one of the big problems that we face is that . . . **local data sets** on energy and net zero are particularly poor." (BEIS)
  - "you also need access to the really detailed data that exists about the **state of the networks and the infrastructure and demands** and everything in [a particular place]" (Energy Capital/Consultant)

- Issues identified applying national data to local contexts
  - "**a lot of [relevant] data sets are national, they are then cut**, and we all know what happens to data when you give it to a scientist to cut… what's the expression, statistics, lies, damn lies, and statistics . . . I cannot remember how many times I've seen in various devo deals containing the expression, "we have the highest level of fuel poverty in the UK", **claimed by dozens of different places**, because **they've just cut the data in a way that suits that claim. All of them are factually accurate**" (BEIS)

# Data (2)

- Data that is available for the local context is not presented spatially

"[WPD] go to a local authority and they'll say, this is what your data looks like, but **it's not represented in a spatial way, it's a table** of how many air source heat pumps are you going to have, how many EVs . . . [etc.] . . . it's a list of low carbon technologies, **it's really hard to engage with that data and know whether it's right or wrong**" (Energy Capital)

# Expertise

- Reliance on external expertise to deliver this type of model-based plan

  “I think **the WMCA were pretty dependent on us**, as in they were happy that we were the experts in this kind of stuff, and therefore we could do the analysis.” (WSP)

  “to be quite honest, **none of these local authorities**, apart from perhaps Coventry, and maybe Solihull, **had very strong track records** in anything to do environment. So effectively, **you're starting from quite a low base**.” (WMCA)

- Experts are trusted to make realistic assumptions

  “that's really what you get paid for in our job, it’s not to be a mathematician, but **because we've been doing this for so long**, I know where the evidence bases are, and **I know the evidence bases that are realistic**” (WSP)

# Stakeholder consultation

- Lots of people spoke about the importance of feedback from a range of stakeholders (e.g. electricity grid engineers, ecologists)

  “we actually **spoke to about a hundred organisations to get their feedback** on what they were doing, what they thought would work, what they didn’t think would work . . . we were **aiming very much to bring everyone with us**, all that kind of stuff. So the consultation was important.” (WSP)

- Particularly helpful for qualitative inputs

  “Housing associations were saying, well you know, **it's all very well you coming up with this plan, but our tenants don't know how to use heat pumps**, and it will be us that will deal with the problems when they can't heat their home” (WSP)

# Stakeholder consultation (2)

- Feedback not necessarily reflected in the modelling

  "I think it’s going to be a lot easier than we think [to balance the electricity grid], it's just it's very difficult to model." (WSP)

  “because **you’re having to do it quite simple and high level**, and you don’t really know much about ecology . . . we did the whole [greening target] as tree planting . . . but the Wildlife Trust said the problem with that is, **you don't pick up on the really important stuff**, which is the smaller projects. It's not all about trees, it's about hedges, and things like that, which is just too small and bitty to get into . . . but then **they don't get the finance, because we've spent the billion pounds on trees.**” (WSP)

# Case studies

- Used by Net Zero Hub officers responsible for planning policies and implementation

  “real twin” vs. digital twin

  “you [can] become obsessed with finding more and more data, when really the best thing that you have is **a case study that someone’s done before on something similar** where the data might not match to the kilowatt hour.” (NZH)

- Contrasted with the modelling approach as more appropriate for local context:

  "I don't find a lot of the [modelling] tools useful at the moment, just because they're either **over-complicated**, in terms of what you've got to put into them, or **their outputs aren't exactly what I'm looking for** . . . I'm sure there's probably some brilliant ones that I’m missing, but **very often, I just want one slide in one presentation**" (NZH)

# Why is evidence used - empirically

- Reputation

  "**it sounded technical and impressive**" (NZH)

  “our policy is **based on science**” (Councillor)

- To justify the level of ambition

  “they were **worried, politically, that they would be criticised** for lacking ambition . . . so they said, if you create the high scenario, say in your professional opinion this is . . . very challenging, we recommend the central scenario - that gives them that wiggle room” (WSP)

- To de-politicise

  "There was a lot of political pressure from some quarters to **just go one better than [Mayor of Greater Manchester] Andy Burnham**, but the Mayor wanted to have . . . **the evidence-based route** . . . because **otherwise it starts becoming very posturing**." (WMCA)

- To get more funding

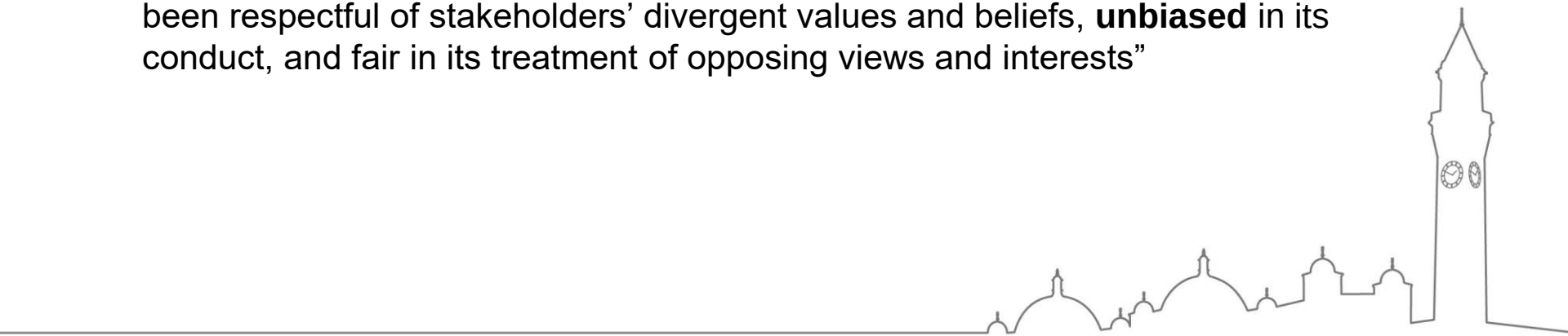
  “we need a billion pounds, **because that's what our consultant said we need**” (WSP)

  “they can say to government . . . we want to do our bit, and more, but **we're not going to be able to do it with the resources that we’ve got**, in terms of personnel and funding” (WSP)

# Why is evidence used - theoretically

Framework from Cash et al. 2003:

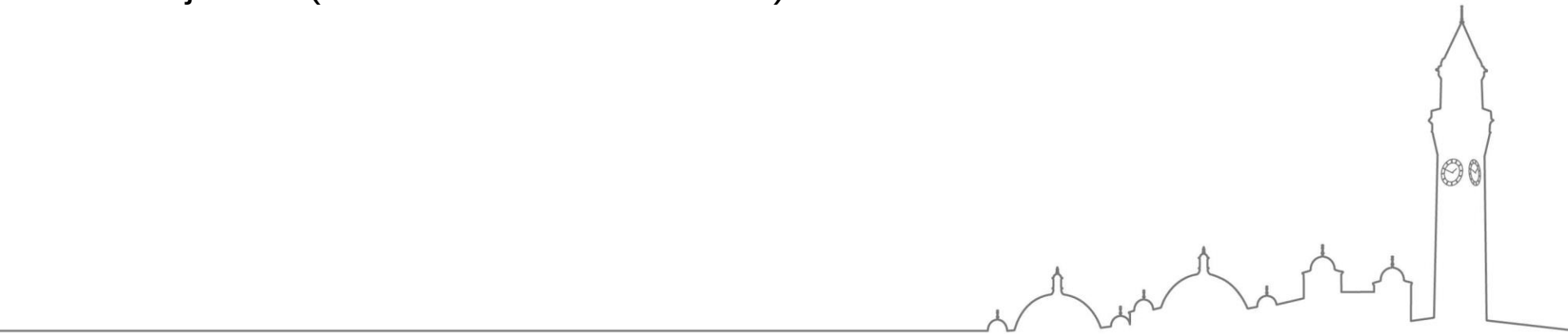
- **Credibility** – "**scientific** adequacy of the technical evidence and **arguments**"
- **Salience** – "relevance of the assessment to the **needs of decision makers**"
- **Legitimacy** – "**perception** that the production of information and technology has been respectful of stakeholders' divergent values and beliefs, **unbiased** in its conduct, and fair in its treatment of opposing views and interests"



# Credibility

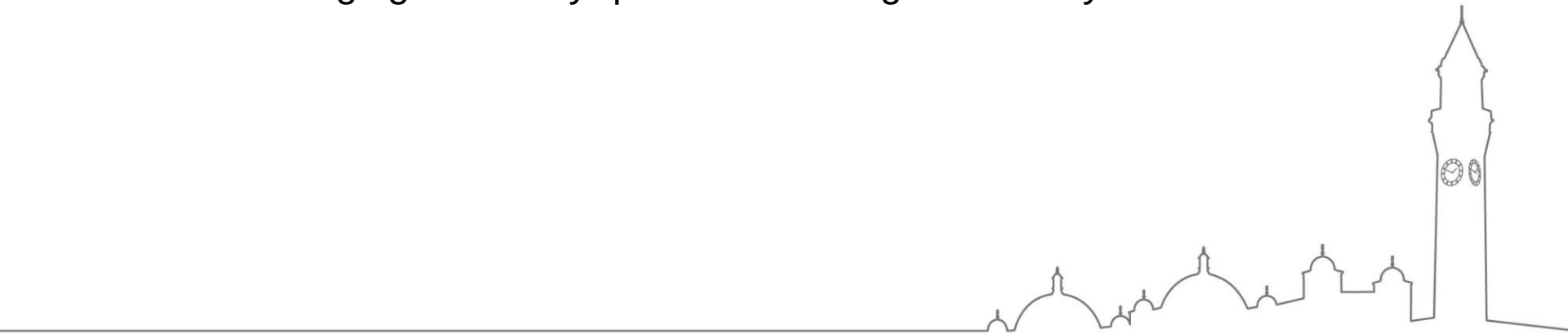
- Credibility comes from reputation of consultants

- But the adopted scenario no longer in line with the underlying scientific objective (limit cumulative emissions)



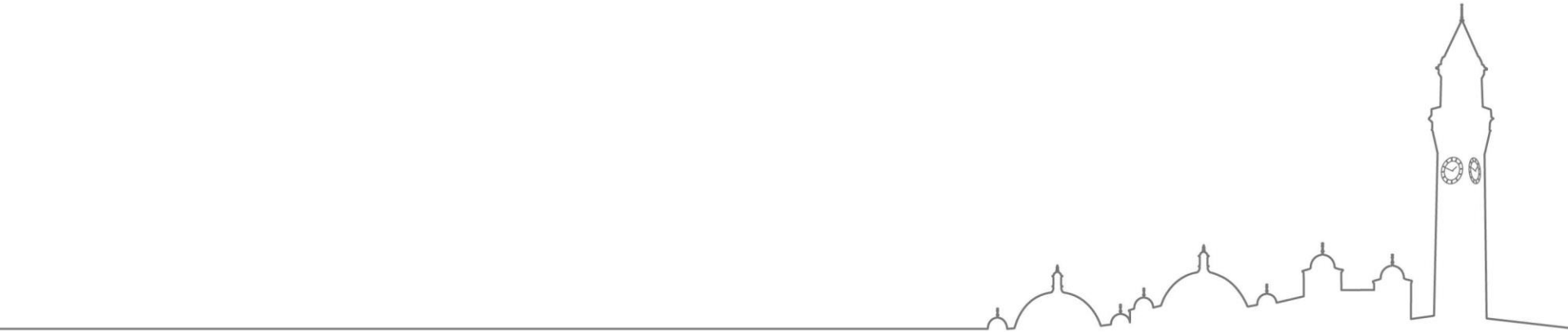
# Salience

- Trade-off between what different stakeholders perceive to be salient for politicians
- MACC modelling diverts from a place-based approach
- But challenging to convey qualitative findings succinctly



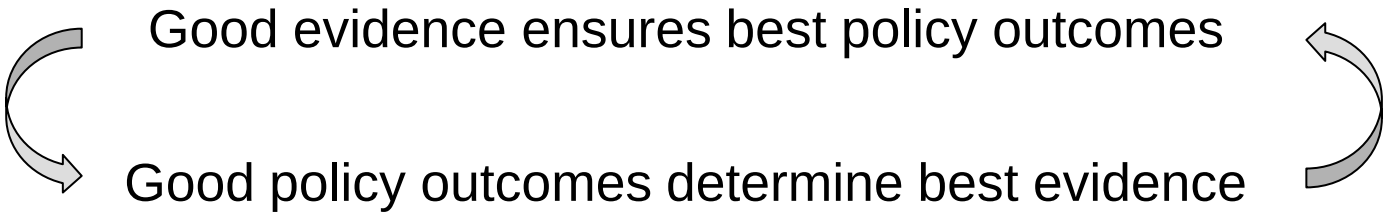
# Legitimacy

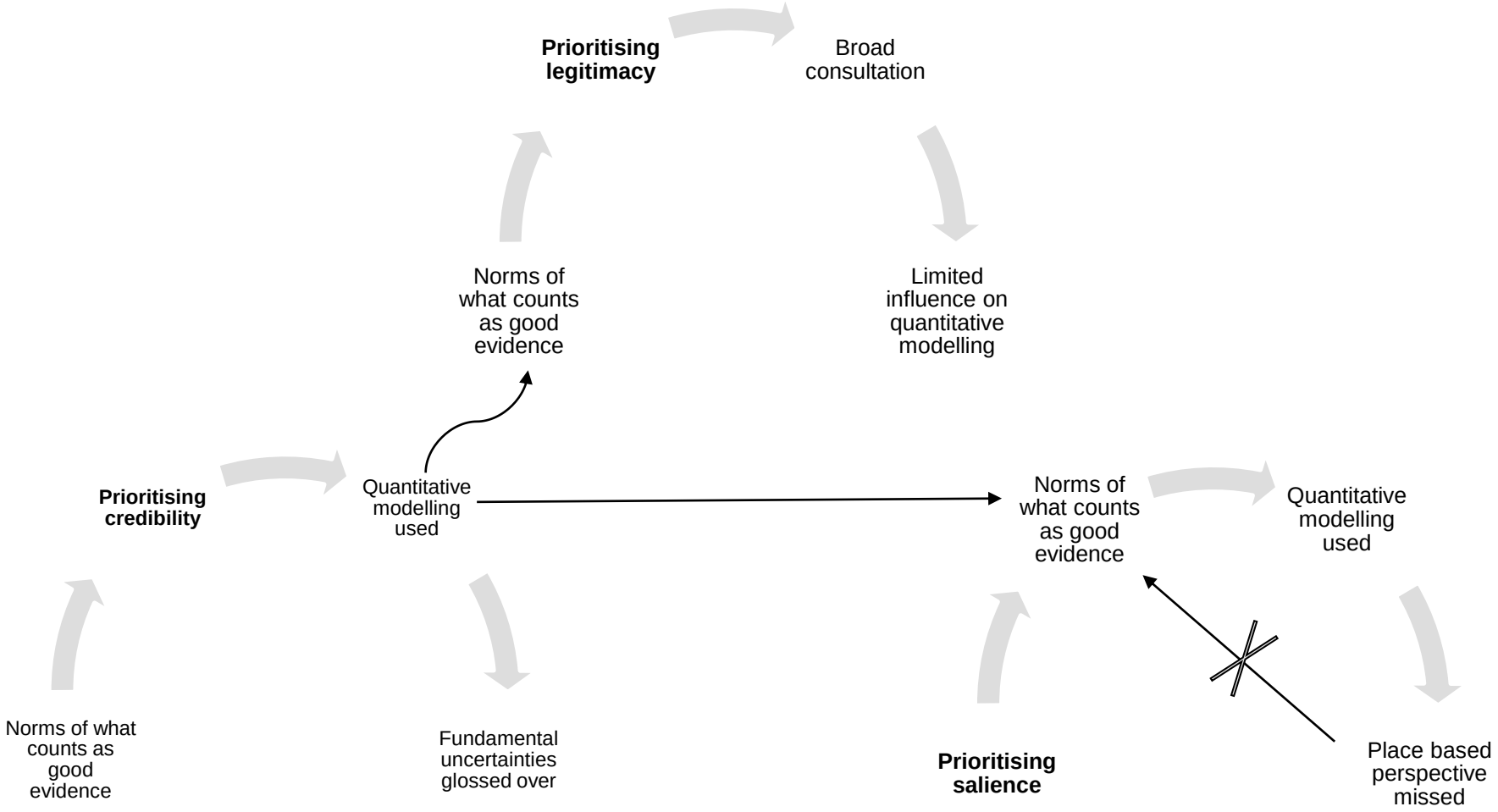
- Broad stakeholder consultation – but not taken into account in modelling
- Politicians can point to due process being done



# Ordering of questions matters

- Supply side vs. demand side



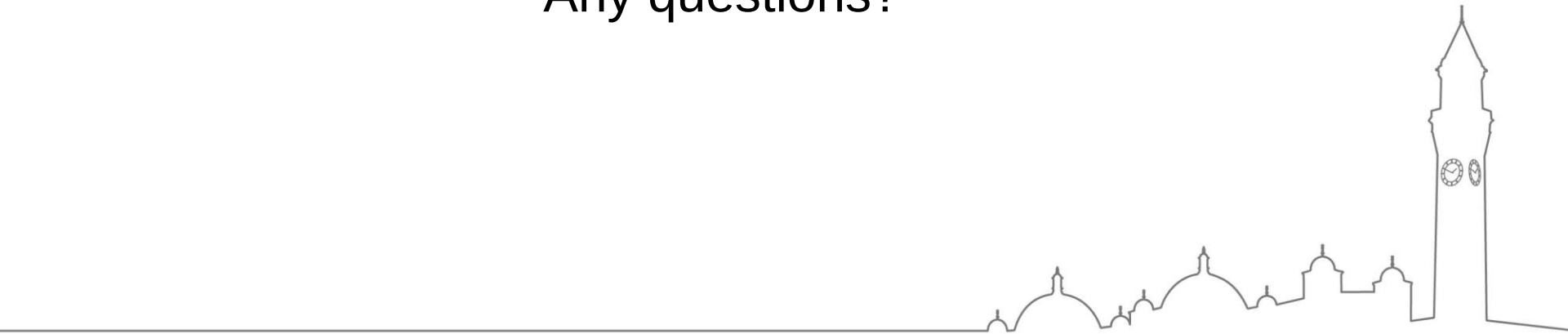

Prioritising legitimacy
Broad consultation
Norms of what counts as good evidence
Limited influence on quantitative modelling
Prioritising credibility
Quantitative modelling used
Norms of what counts as good evidence
Quantitative modelling used
Norms of what counts as good evidence
Fundamental uncertainties glossed over
Prioritising salience
Place based perspective missed

# Conclusions

- Modelling is a dominant form of evidence in local net zero policymaking
- A lot of people locally think evidence is better contextualised than it really is (due to hidden modelling assumptions, and separation of expertise from local authorities)
- Spatial considerations need to be prioritised – especially for energy infrastructure
- If high-level modelling is to be useful, emphasis should be placed on the process, not the output

Thank you for listening!

Any questions?



# How could modelling be used more effectively?

- Better approach taken to Tyndall Centre report?

  “before it went to the politicians, **we did a workshop with local authority officers and the Tyndall Centre** saying, here is the draft, here's what it looks like, and **got the officers to ask lots of questions**, of which then Tyndall revised their report, mostly on points of clarification, i.e., what's in, what isn't, what does this mean, **what caveats are there**, how's shipping included or not. So that was a really useful process, because the officers then were more comfortable that they’d been involved in the process, they tested it.” (WMCA)