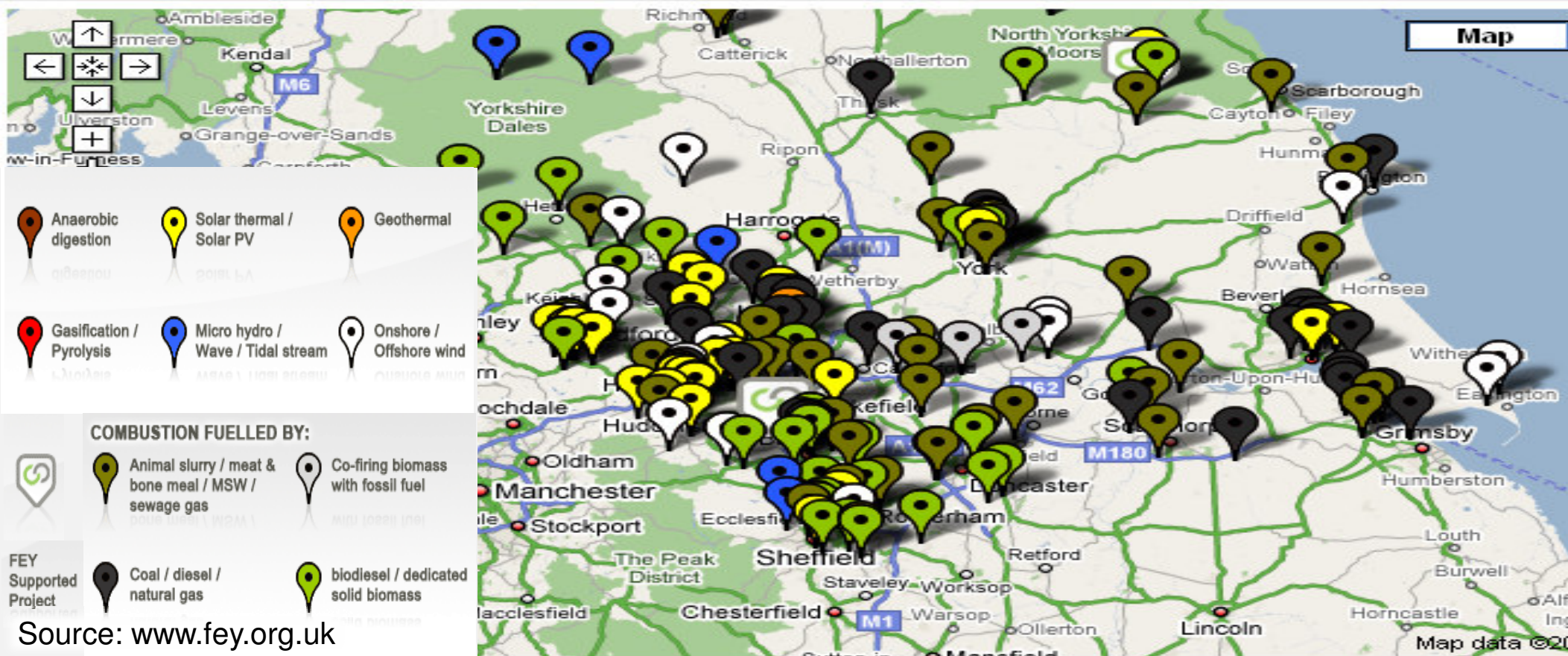


# Renewable Energy Toolkit

## Workshop Introduction

Martin Elliot, YHRA & John Pilgrim, YF

### Energy Generation Map



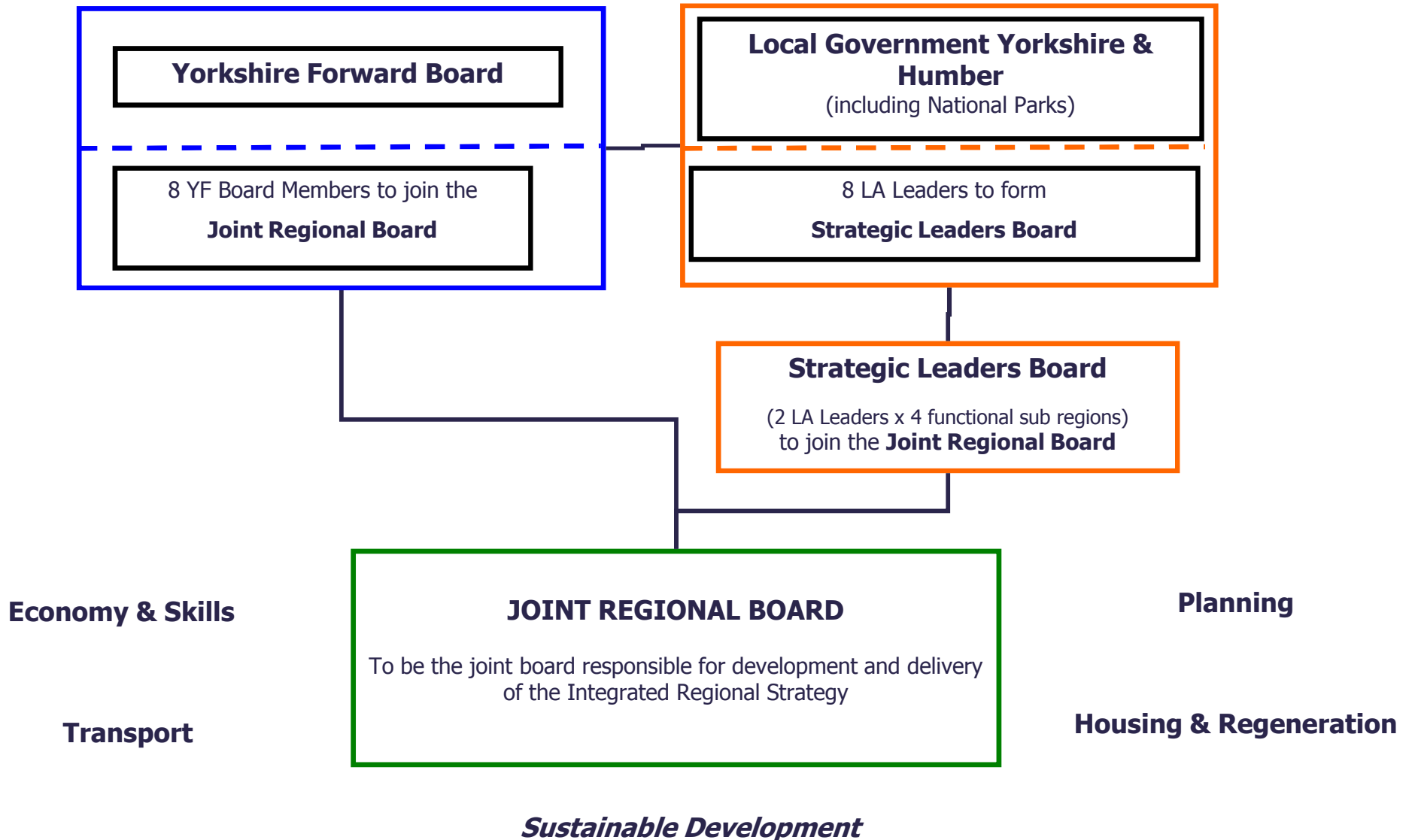
## Agenda for the afternoon

- |               |  |
|---------------|--|
| 12.00 – 12.20 | Drinks and introductory presentations  |
| 12.20 – 13.15 | Workshop session 1 <ul style="list-style-type: none"><li>▪ Current problems and key issues</li><li>▪ How things work currently; tools and guidance used at present</li><li>▪ Recent planning applications; good and bad examples</li></ul> |
| 13.15 – 13.30 | Lunch  |
| 13.30 – 13.50 | Preliminary Ideas on Structure, Style & Content  |
| 13.50 – 14.50 | Coffee and workshop session 2 <ul style="list-style-type: none"><li>▪ How the toolkit can help</li><li>▪ Proposed style and format</li><li>▪ How best to share and spread the message</li></ul>  |
| 14.50 – 15.00 | Summary/Next Steps   |

# Why Regional Planning

- Cross-boundary working
- Can help avoid local political rows
- Allows for a reflection of diverse range of interests
- Enables links with other regional players
- Some issues are bigger than local and smaller than national
- Pool knowledge and research
- Investment and funding

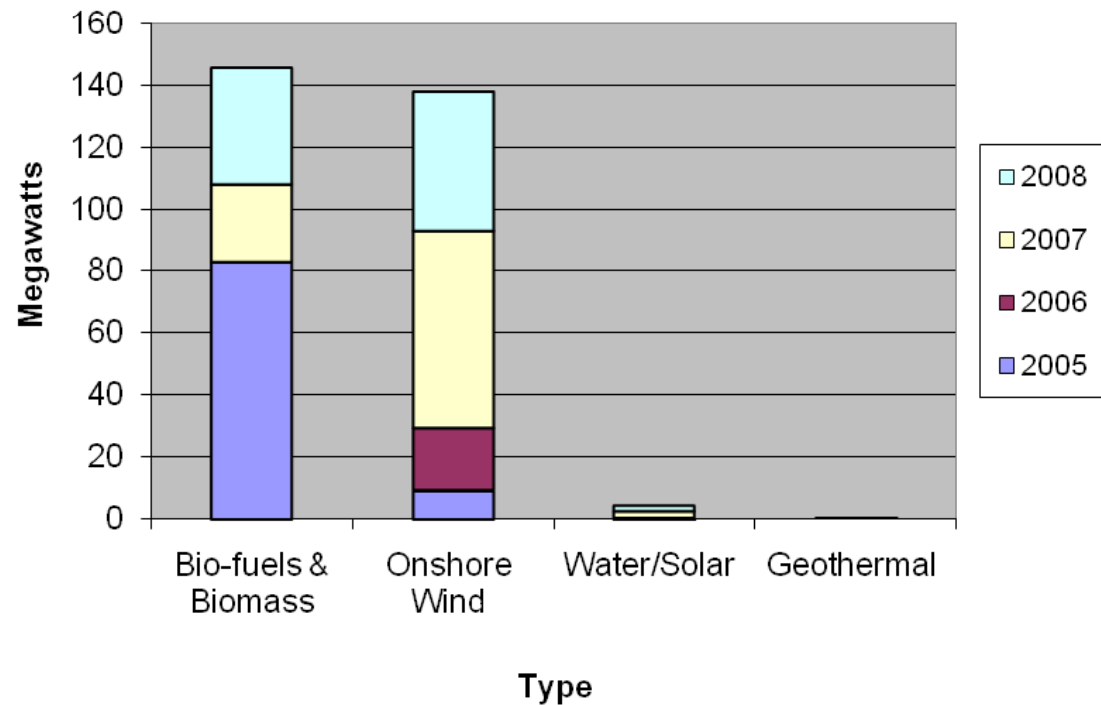
# Changing Regional Structures



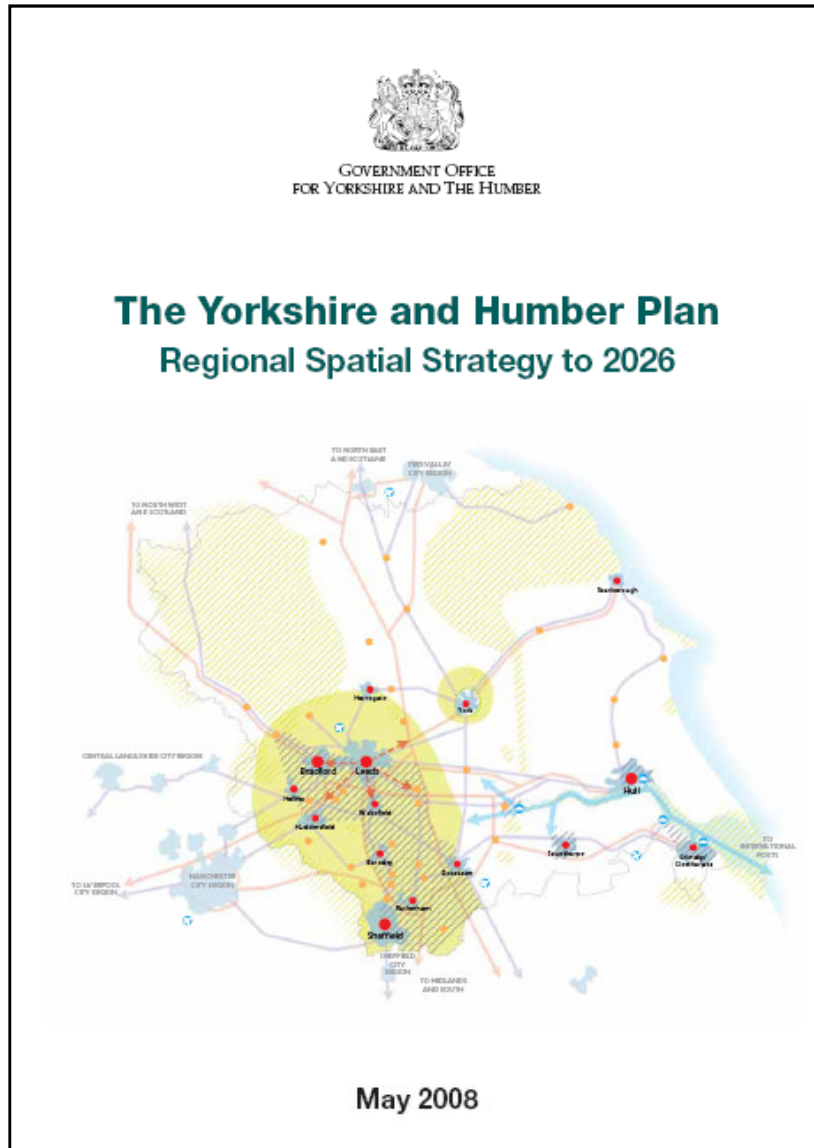
# The responsibilities of the Regional Board

- Regional Spatial Strategy
  - Policies on Climate Change & Energy
- Integrated Regional Strategy
  - Evidence gathering – need for new approaches?
- Annual Monitoring
- Implementation
  - Evidence
  - Research
  - Toolkits

Installed Renewable Energy in Y&H 2005 - 2008



# Why develop a Renewable Energy Toolkit?



## POLICY ENV5: Energy

The Region will maximise improvements to energy efficiency and increases in renewable energy capacity. Plans, strategies, investment decisions and programmes should:

**A** Reduce greenhouse gas emissions, improve energy efficiency and maximise the efficient use of power sources by:

1. Requiring the orientation and layout of development to maximise passive solar heating
2. Ensuring that publicly funded housing, and Yorkshire Forward supported development, meet high energy efficiency standards
3. Maximising the use of combined heat and power, particularly for developments with energy demands over 2MW, and incorporating renewable sources of energy where possible
4. Ensuring that development takes advantage of community heating opportunities wherever they arise in the region, including at Immingham and near Selby
5. Providing for new efficient energy generation and transmission infrastructure in keeping with local amenity and areas of demand
6. Supporting the use of clean coal technologies and abatement measures

**B** Maximise renewable energy capacity by:

1. Delivering at least the following Regional and Sub-Regional targets for installed grid-connected renewable energy capacity:

	2010	2021
Humber	124MW	350MW
North Yorkshire	209MW	429MW
South Yorkshire	47MW	160MW
West Yorkshire	88MW	295MW
Offshore	240MW	630MW
<b>Total</b>	<b>708MW</b>	<b>1862MW</b>

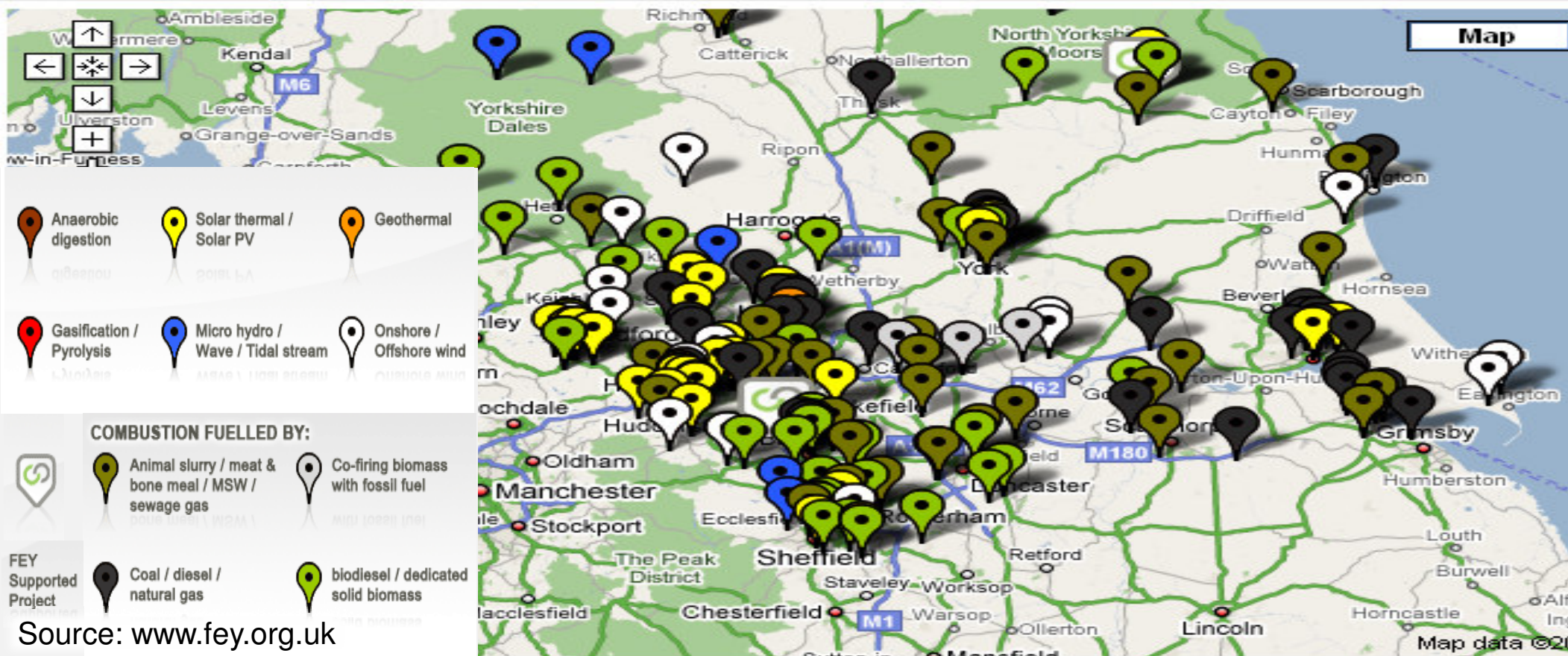
2. Monitoring annually planning permissions and developments against the indicative local authority targets for 2010 and 2021 set out in Table 10.2 and taking action accordingly in order to ensure the regional and sub-regional targets are exceeded
3. Promoting and securing greater use of decentralised and renewable or low-carbon energy in new development, including through Development Plan Documents setting ambitious but viable proportions of the energy supply for new development to be required to come from such sources. In advance of local targets being set in DPDs, new developments of more than 10 dwellings or 1000m<sup>2</sup> of non-residential floorspace should secure at least 10% of their energy from decentralised and renewable or low-carbon sources, unless, having regard to the type of development involved and its design, this is not feasible or viable.

# Renewable Energy Toolkit

## Issues to be addressed

Nigel Banks, Associate Director, Faber Maunsell

Energy Generation Map



# Issues to be addressed

## Scoping report and feedback

What are the national policy requirements and how do we respond?

How should local targets and policies be set? What evidence is needed?

Where do Building Regulations, BREEAM and the Code fit in?

How best to negotiate with developers?

How can renewable energy generation be monitored?

How much do they cost? And how do we know if that's viable?

How does this fit with other priorities, like affordable housing or conservation?

Which technologies are suited to this area? Or a particular site? How much will they generate?

What about the regional targets and their implications?

What's the difference between targeting energy savings and CO<sub>2</sub> reductions?

What renewable and low carbon technologies are out there and how do they work?

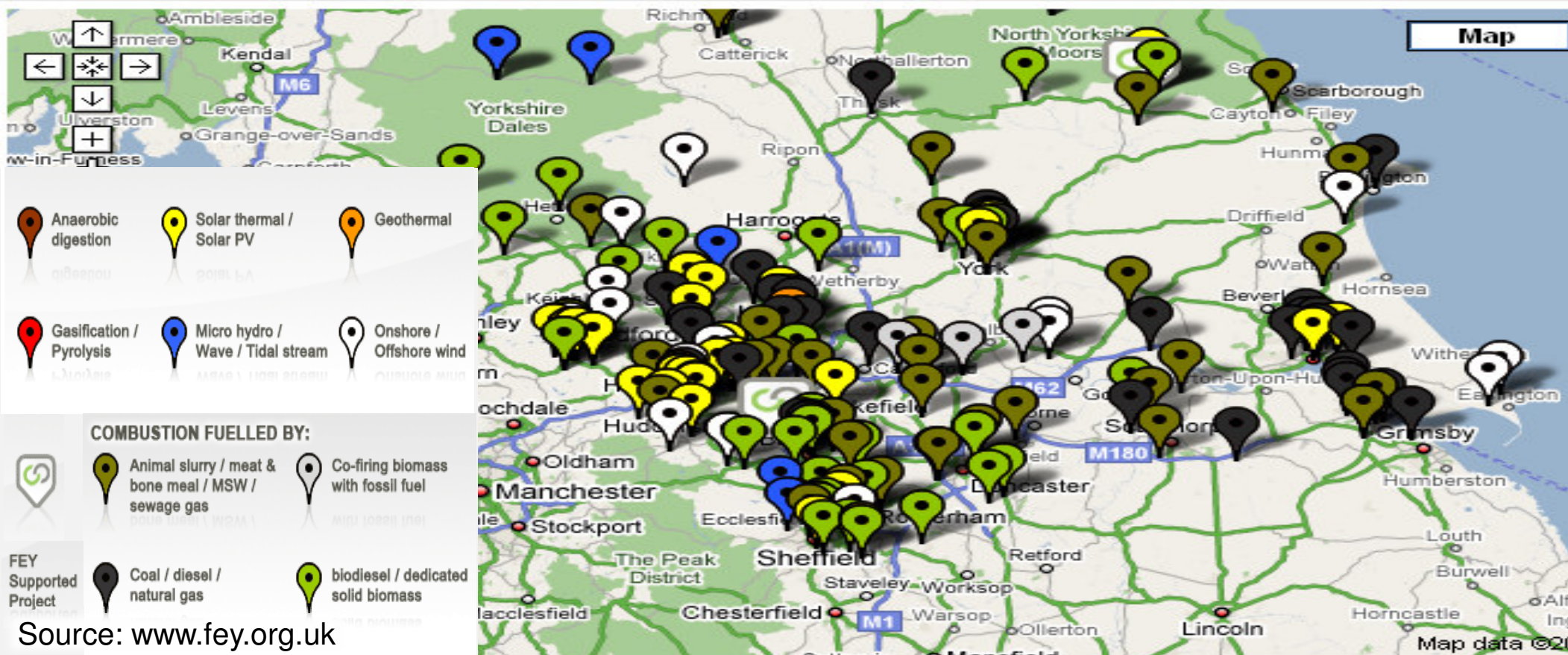
How do we get the support of Councillors and local communities?

What else can we do to support delivery of renewable and low carbon energy?

# Renewable Energy Toolkit

## Workshop Session 1

Energy Generation Map



# Workshop Session 1

For discussion

## **Discuss (40mins – until 13:00):**

- Current problems and key issues
- How things work currently; tools and guidance used at present
- Recent planning applications; good and bad examples

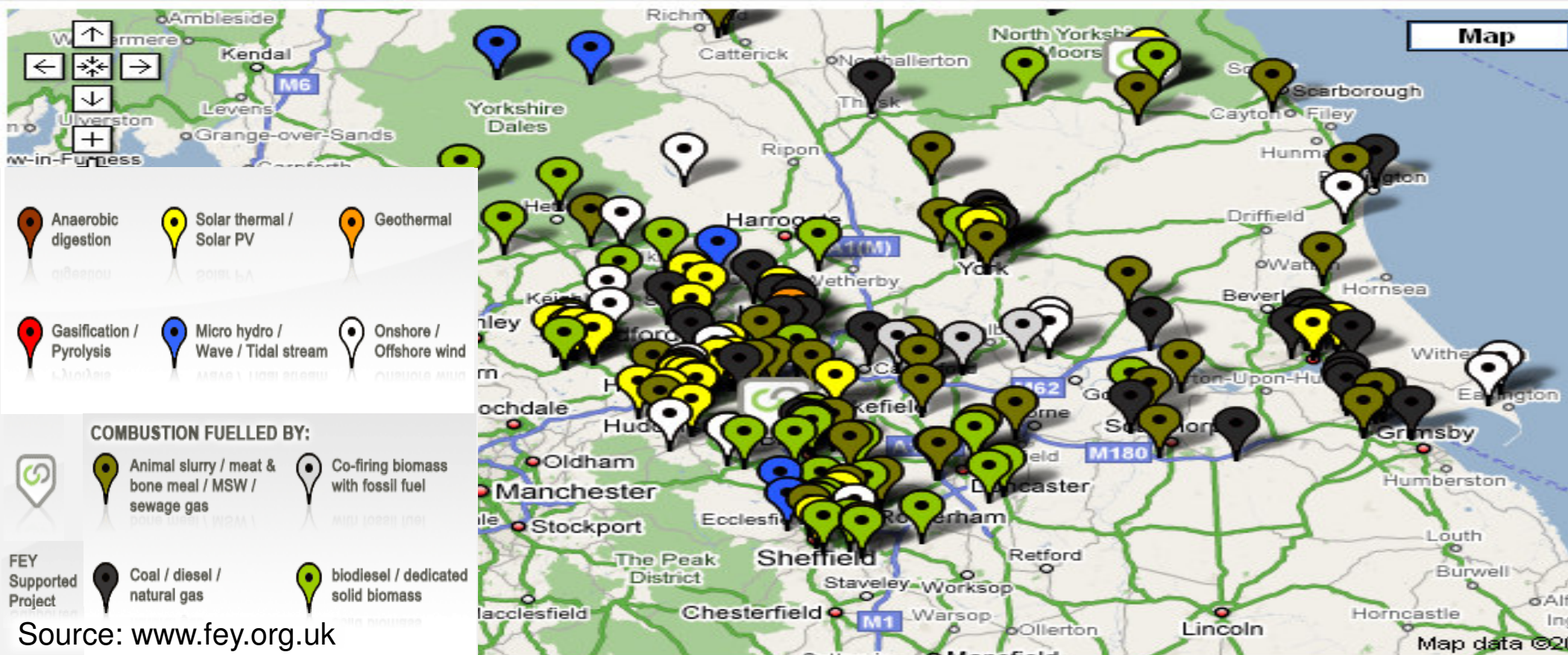
## **Feedback (15mins – until 13:15)**

# Renewable Energy Toolkit

## Preliminary Ideas on Structure, Style & Content

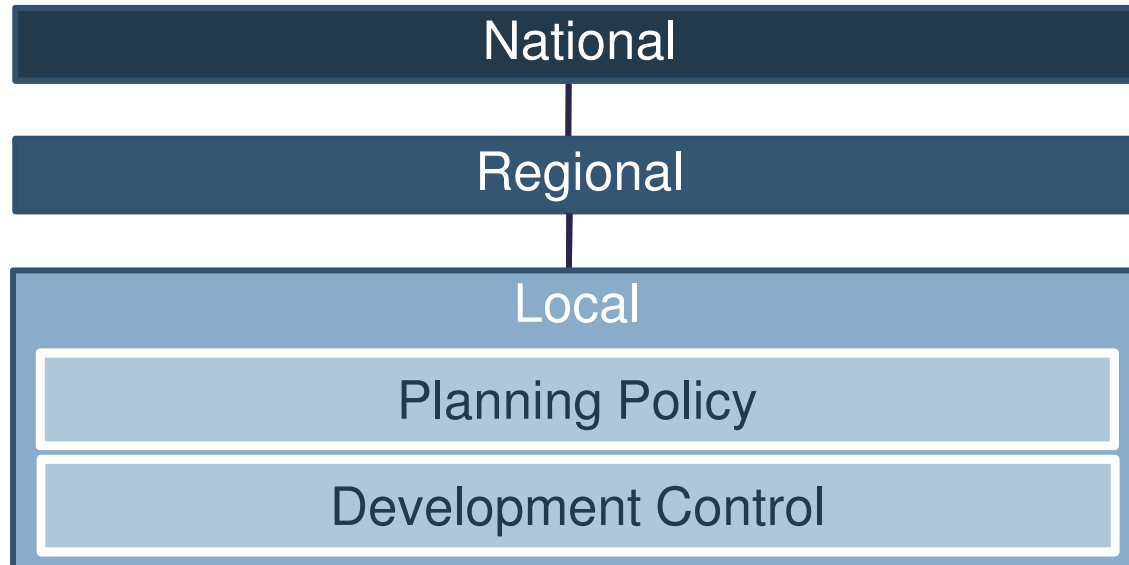
Rob Shaw, Associate Director, Faber Maunsell

Energy Generation Map



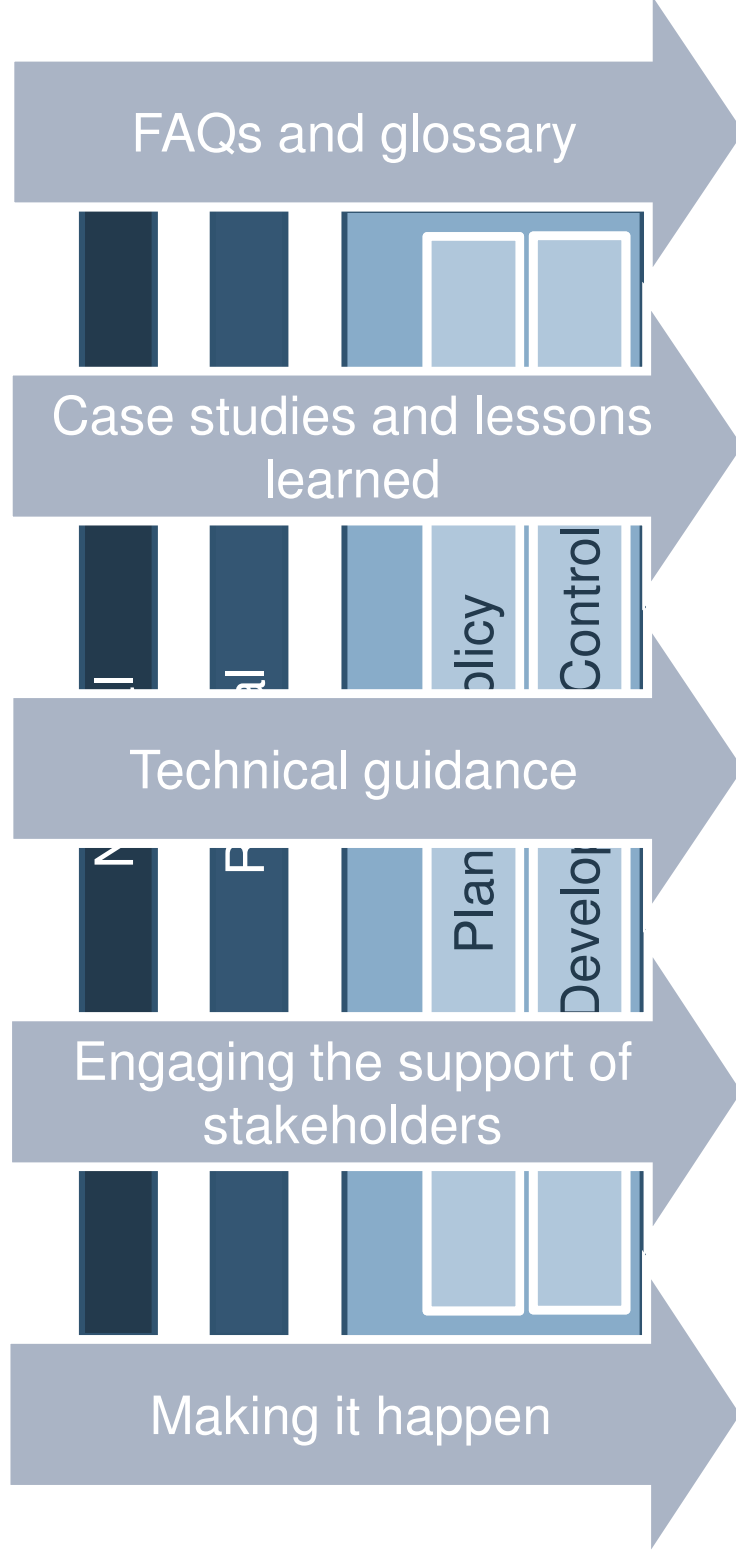
# Toolkit Structure

## Overview



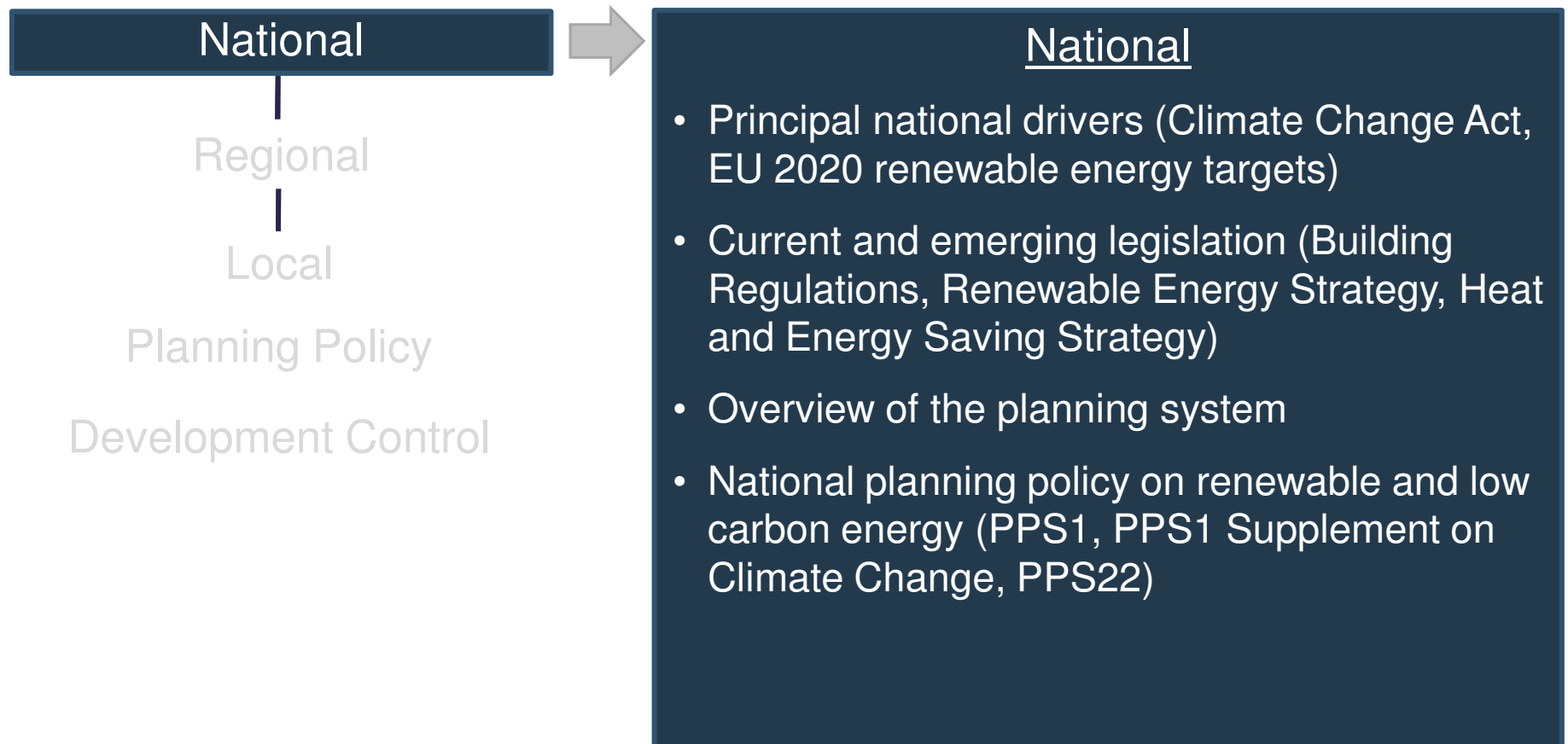
# Toolkit Structure

## Cross-cutting information



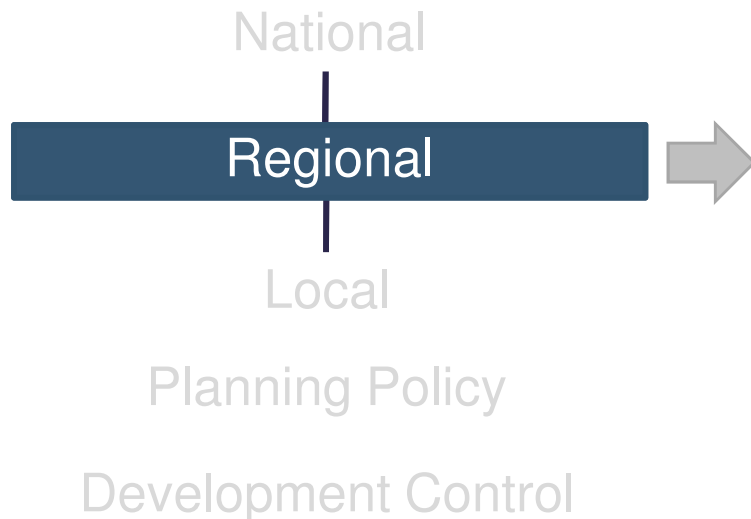
# Toolkit Structure

## National information



# Toolkit Structure

## Regional information

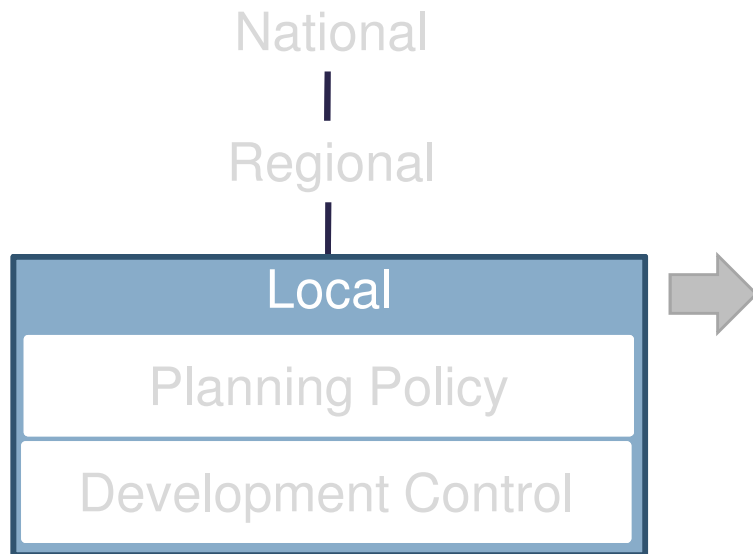


### Regional

- Regional roles and responsibilities including the new organisational structure
- Current and emerging regional policy (Regional Spatial Strategy, Regional Energy Infrastructure Strategy)
- Implications of RSS policy ENV5
- Regional renewable energy resource and infrastructure

# Toolkit Structure

## Local information



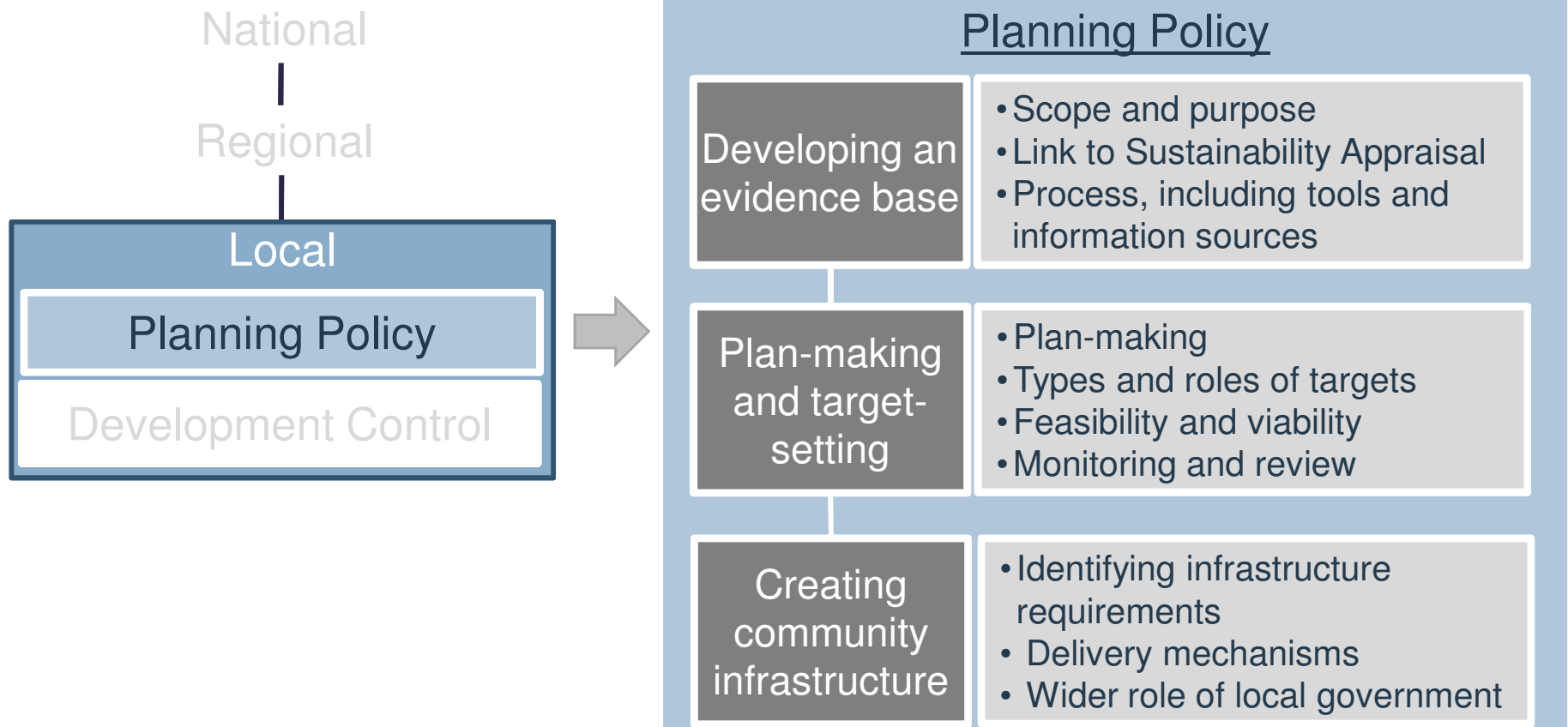
### Local

- Local roles and responsibilities (Planning Policy, Development Control, other stakeholders)
- Map of 22 local authorities with links in to the planning sections of their web sites

Source: [www.yhassembly.gov.uk](http://www.yhassembly.gov.uk)

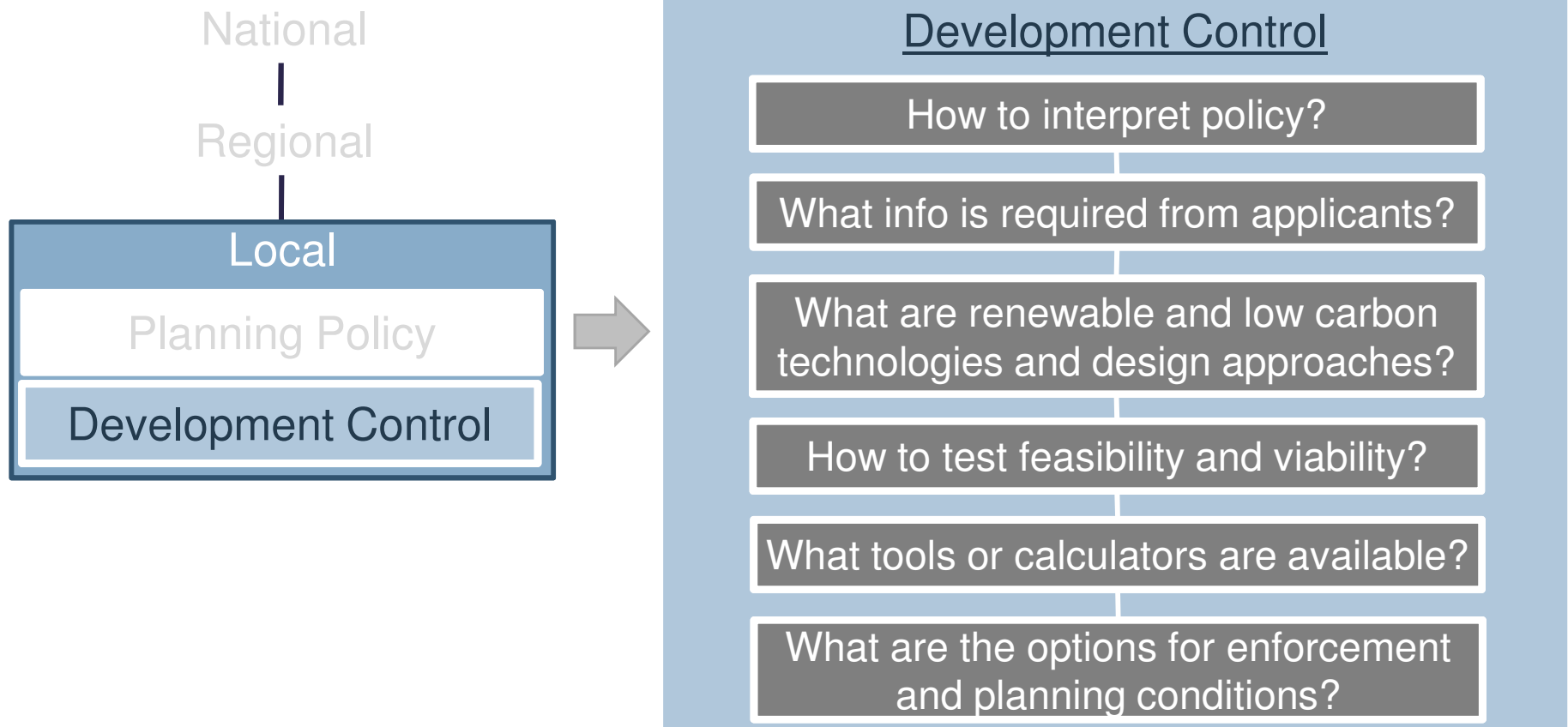
# Toolkit Structure

## Local information



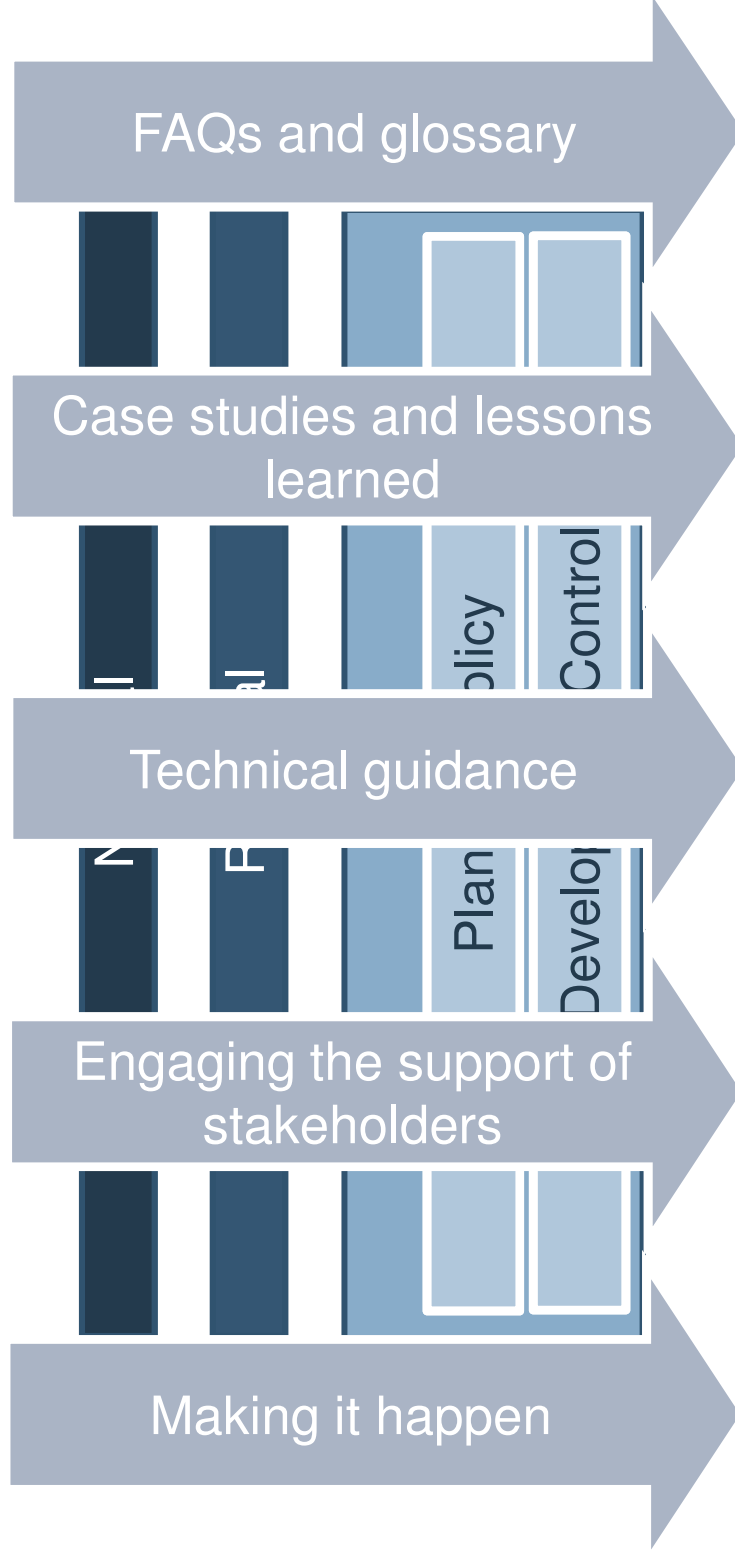
# Toolkit Structure

## Local information



# Toolkit Structure

## Cross-cutting information



# Toolkit Structure

## Cross-cutting information




Making it happen

- Local authority powers and responsibilities, including Power of Wellbeing
- Delivery mechanisms (eg local authority owned land and development projects, S.106 contributions, Community Infrastructure Levy, Community Energy Funds, ESCOs)
- Good practice methods for approaching each stage of policy making and development control

# Toolkit Structure

## Cross-cutting information

Engaging the support of  
stakeholders



- Who to involve at what stage? (Councillors, other local authority departments, developers, landowners, Local Strategic Partnerships, local community groups, environmental groups)
- What role can the different stakeholders play in planning and delivery?
- Formal consultation and informal discussions
- Securing buy-in and support

# Toolkit Structure

## Cross-cutting information



Technical guidance

- A brief description of the relevant renewable and low carbon technologies:
  - Solar thermal
  - Wind
  - Fuel cells
  - Hydro
  - Tidal
  - Wave
  - Photovoltaics
  - Biomass and co-firing
  - Energy from waste (biological/mechanical)
  - Heat pumps (ground, water, air)
  - CHP or CCHP
- Links to basic and more detailed technical guidance materials
- An overview of the different calculator tools available
- Feasibility checklists

# Toolkit Structure

## Cross-cutting information



Technical guidance:  
Calculator tools

- Numerous calculator tools are already available:
  - Regional overview, for policy making vs feasibility for specific developments
  - Bespoke tools vs off-the-shelf software
  - Detailed and complex vs. approximate and simplified
- There are advantages and disadvantages to each – which is the preferred approach for this project?

# Toolkit Structure

## Cross-cutting information

Technical guidance:  
Calculator tools

### Carbon Mixer™

**Carbon Mixer - Familiarisation Exercise.cmp**

File View Benchmarks Help

Site view Results view Project view Database view Yearly/Monthly Zoom Expand/Contract Characteristic Benchmark... Scenario...

**Bobby Gilbert & Associates Ltd**

**Site Assessment**

Benchmark						
CO2 kg/m2	CO2 T/yr	Capital £k	Service £k	Fuel £k	Area m2	
58	605	245	2	107	10526	

CO2 Reduction: 0%

Fuel Table						
CO2 kg/m2	CO2 T/yr	Capital £k	Service £k	Fuel £k	Area m2	
58	605	245	2	107	10526	

Site Demand	Number	Floor area (m2)	Capital Cost (£k)	Heating (MWh/yr)	Cooling (MWh/yr)	Hot Water (MWh/yr)	Elec Appl (MWh/yr)
Det Bld regs 2002 lightweight, 20 - 24, London	30	3420		-212.5	-30.0	-115.4	-105.0
Det Victorian, 20 - 24 Base case, London	30	3420		-1083.2	-0.6	-115.4	-97.2
Office, Econ19 Type 1, best practice, UK	36	3420		-210.7			-112.9
Fast Food Restaurant, LRT fast food, UK	1	112		-48.4			-91.8
Small Swimming Pool, BRE, UK	1	154		-25.9		-74.2	-7.1

**Unfuelled Heat and Power Supply**

PV 35deg, ZedFabric 1m2 - Installed - 50% grant, London	0				
SHW 4m2 160 litre Consolar, Tubo 11 cpc, London HR	0				
Wind: ZedFabric, Base model - Good wind visibility, London HR	0				
Wind: Proven, WT15000 - Good wind visibility, London HR	0				

**Fuelled Heat and Power Supply**

	% demand				
Heat main costs, per dwelling,	98	100	216		
Heat pump, reversible, 8kW, COP 4.0, UK	0	100			
Boiler, biomass, 300kW, 85% efficiency, UK	0	100			
Boiler, Gas, 293kW, 85% efficiency, UK	3	100	30	1580.7	304.9
		100			
		100			
Electricity from Coal	1				414.0

www.bobbygilbert.co.uk/CarbonMixer.html

**What?** A spreadsheet tool that estimates site energy demands, CO<sub>2</sub> emissions and potential savings from efficiency and renewable and low carbon technologies.

**Who?** Developed by BG&A Ltd. Adapted by North East Assembly for use in the region.

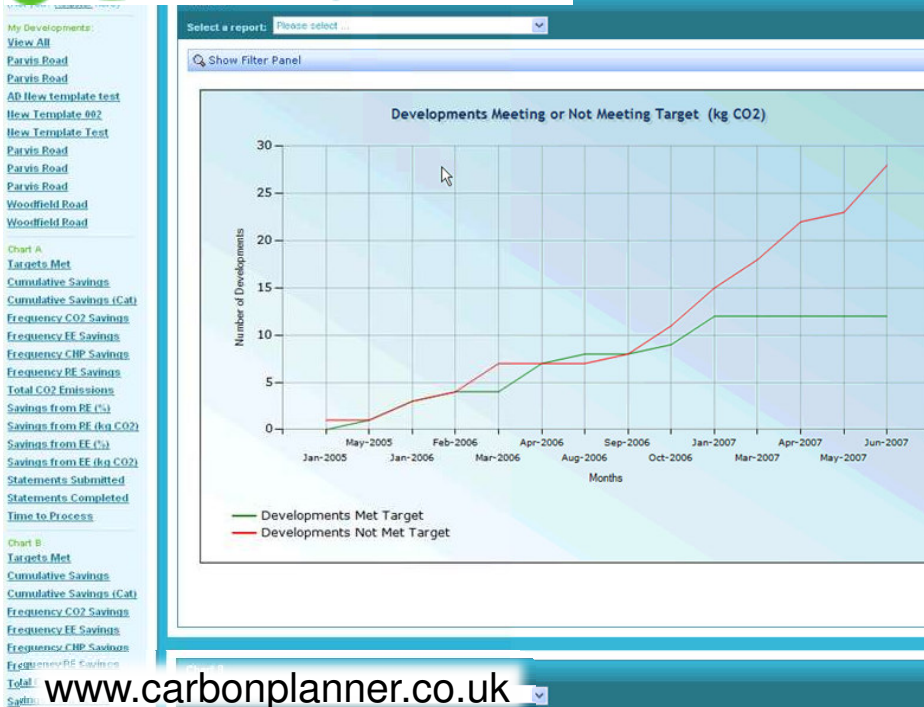
- + Quick estimates of site energy demands and savings
- + Software updates, technical support and training available
- + Free version available in the North East

- Does not advise on what is suitable for a site or other impacts
- Limited list of technologies to choose from
- Initial perception that it is complicated to use
- Licence fee for off-the-shelf version

# Toolkit Structure

## Cross-cutting information

Technical guidance:  
Calculator tools



[www.carbonplanner.co.uk](http://www.carbonplanner.co.uk)

**What?** Online tool for preparing and reviewing energy statements for planning applications, including assessment of energy demand and renewable energy and CHP feasibility.

**Who?** Developed by ECSC Ltd.

- + Feasibility checklists for different technologies
- + Allows developer and DC officers to use same data and calculations and access statements from a shared location
- + DC officers can accept or decline statements on line and track their status
- + Monitors implementation of planning policy
- + Training available

- Not designed for area-wide policy-making
- Licence fee
- May also be perceived as complex at first

# Toolkit Structure

## Cross-cutting information

Technical guidance:  
Calculator tools

London Energy Partnership - Low Carbon Designer Version 1.0.0

File Help

Current Position Within Toolkit

Building Inputs & Efficiency Efficient Supply Renewable Energy

### Efficient Energy Supply

This table shows the CO2 intensities of the fuels you can select in this module. This is the amount of CO2 emitted per a single kWh of fuel. Notice that the CO2 intensity of grid electricity is over twice as high as for natural gas. Reducing grid electricity consumption is a very effective way of reducing site CO2 emissions. For this reason, electric heating is strongly discouraged.

FUEL TYPE	VALUE (kg CO2 / kWh)
Natural gas	0.19
LPG	0.23
Oil	0.27
Coal	0.29
Anthracite	0.32
Smokeless fuel (inc coke)	0.39
Dual fuel appliances (mineral and wood)	0.19

If your system is biomass or another renewable fuel, please enter the details in the Renewable Energy Module and not here.

London Energy Partnership

<< Back Next >>



**What?** An electronic toolkit that allows developers, building design engineers and planners to assess the energy performance of a proposed development using the London Plan energy hierarchy.

**Who?** Element Energy for the London Energy Partnership



Designed to encourage a consistent approach to calculations for energy strategies



Covers regulated and unregulated emissions



Contains alternative simple, intermediate and advanced methods



Free to use



Designed for use in London



May go out of date

# Toolkit Structure

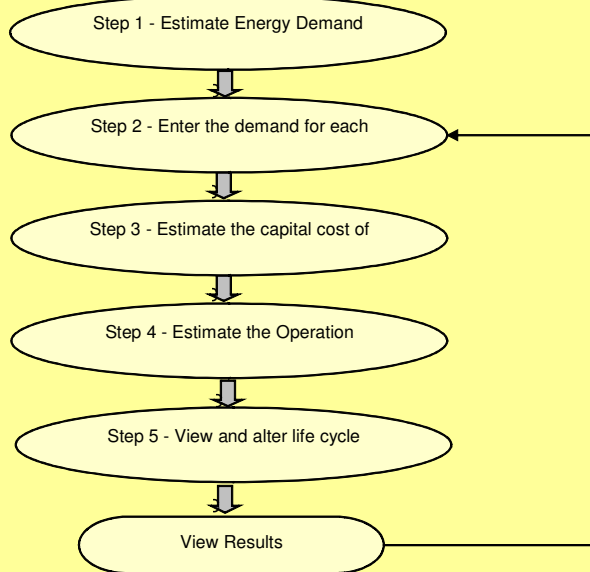
## Cross-cutting information

Technical guidance:  
Calculator tools



### Economic and Carbon Dioxide Impact Assessment (ECDA)

At this point, the types of renewable energy technology suitable for a site should have already been identified. The next step is to follow the sequence below, selecting the required technologies, to produce a detailed ECDA. The user should be aware of the approximate space available at the site; sizing guidance is provided in the accompanying guidance.



Click on **Step 2**  
Follow the list of technologies suitable for the site  
Note: Grants available for Heat Pumps  
**Back to top**  
**Design**  
**Suitability Guidance**

**What?** A spreadsheet designed for local authority officers and developers to calculate site energy demand based on benchmarks, contributions from renewable energy sources and simple financial analysis.

**Who?** Developed by Kirklees Council, Yorkshire Forward and Yorkshire and Humber Assembly.

- + Bespoke tool, so designed to meet needs of users
- + Simple calculation of energy demand based on benchmarks
- + Whole life cost information on renewables, including life expectancy of technologies and indicative O&M costs

- Requires updating regularly
- Different to tools used in other areas
- Can be more expensive to develop

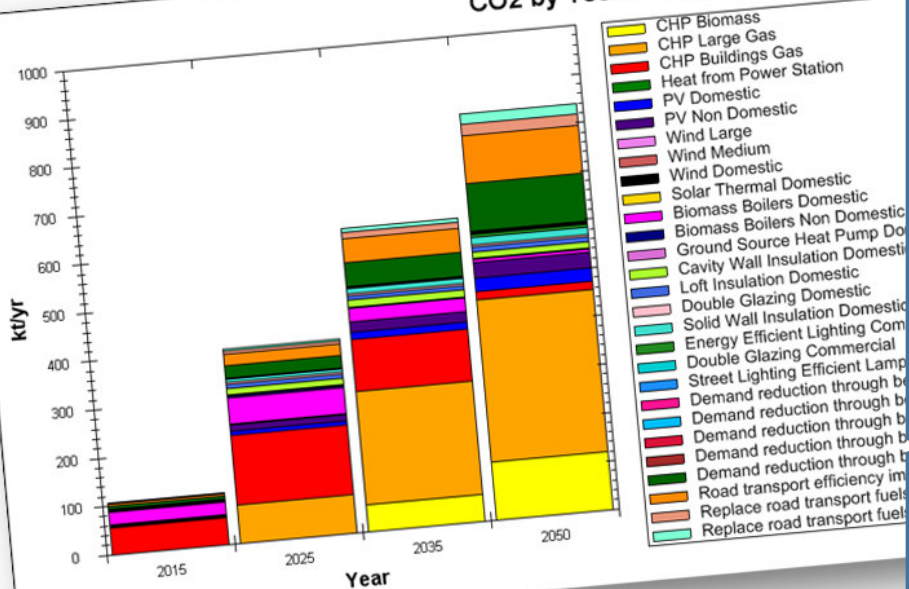
# Toolkit Structure

Cross-cutting information

Technical guidance:  
Calculator tools



CO2 by Technology



**What?** Climate change strategy development tool. It provides regional baseline emissions data and models future emissions scenarios, taking into account the effect of renewable and low carbon energy and other measures.

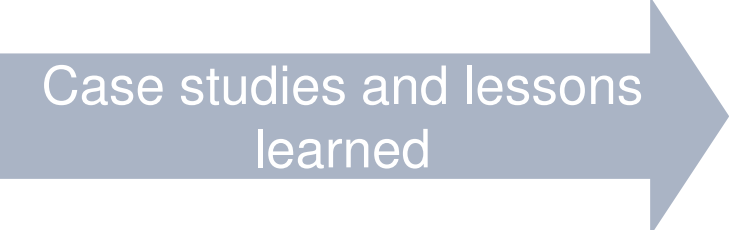
**Who?** Developed by Carbon Descent Ltd.

- + Access to relevant national datasets for a region or local authority area
- + Assesses impact of generation, behaviour change, infrastructure and policy measures
- + Allows cost of different strategies to be compared
- + Includes built environment and transport
- + Basis for reporting against NI 186

- Not designed for development control
- Licence fee
- May also be perceived as complex at first

# Toolkit Structure

## Cross-cutting information



Case studies and lessons  
learned

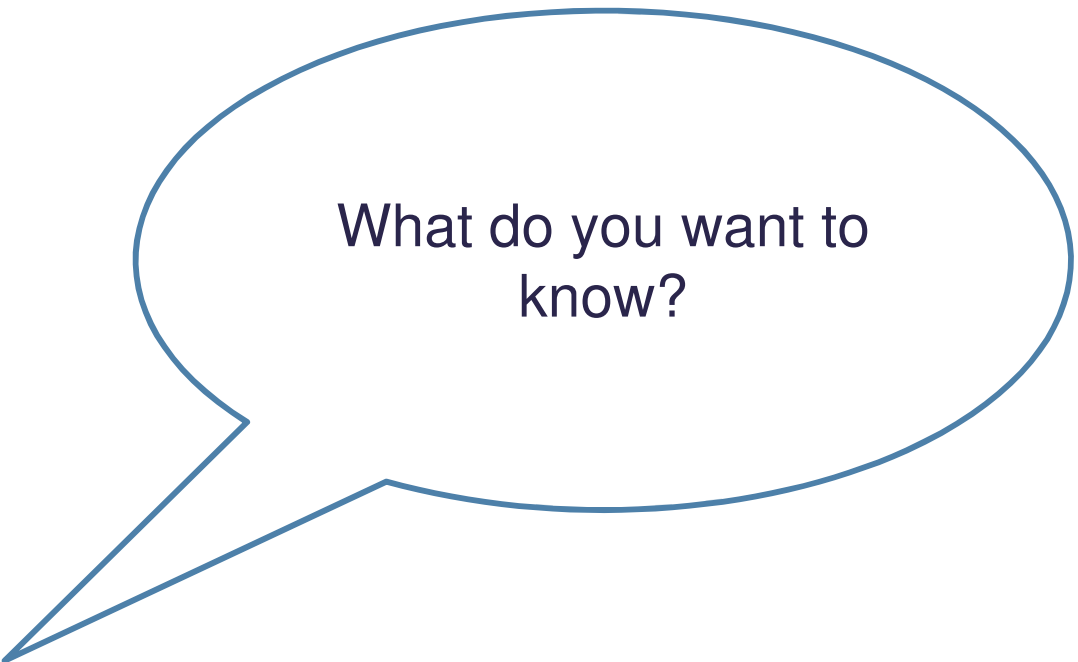
- Local examples where available:
  - What renewable or low carbon technologies have been installed in your area?
  - How have you overcome the barriers locally?
  - What tools or checklists do you use?
- These case studies will be located throughout the report
- Lessons learned for policy making or development control will be emphasised

# Toolkit Structure

Cross-cutting information



FAQs and glossary



What do you want to know?

# Toolkit Style

## Presentation of information

- Equally useful to:
  - Users with 10 mins or 10 days
  - People with a basic understanding or considerable expertise
- Speaks a common language (for planners, other local authority officers, developers, delivery partners, wider community), with a glossary
- Different sections of the document linked together to allow readers to navigate through it by various routes to find the information they need
- Links to good quality, published guidance where available
- Provides calculator tools and checklists where helpful
- Initial deliverable on a CD-Rom, with potential to develop web site in future

# Toolkit Style

## Presentation of information

- How do you want the toolkit to look?
- What features would you like it to have?
  - Web based?
  - User-created content?
  - Message boards?
  - News updates?

# Toolkit Content

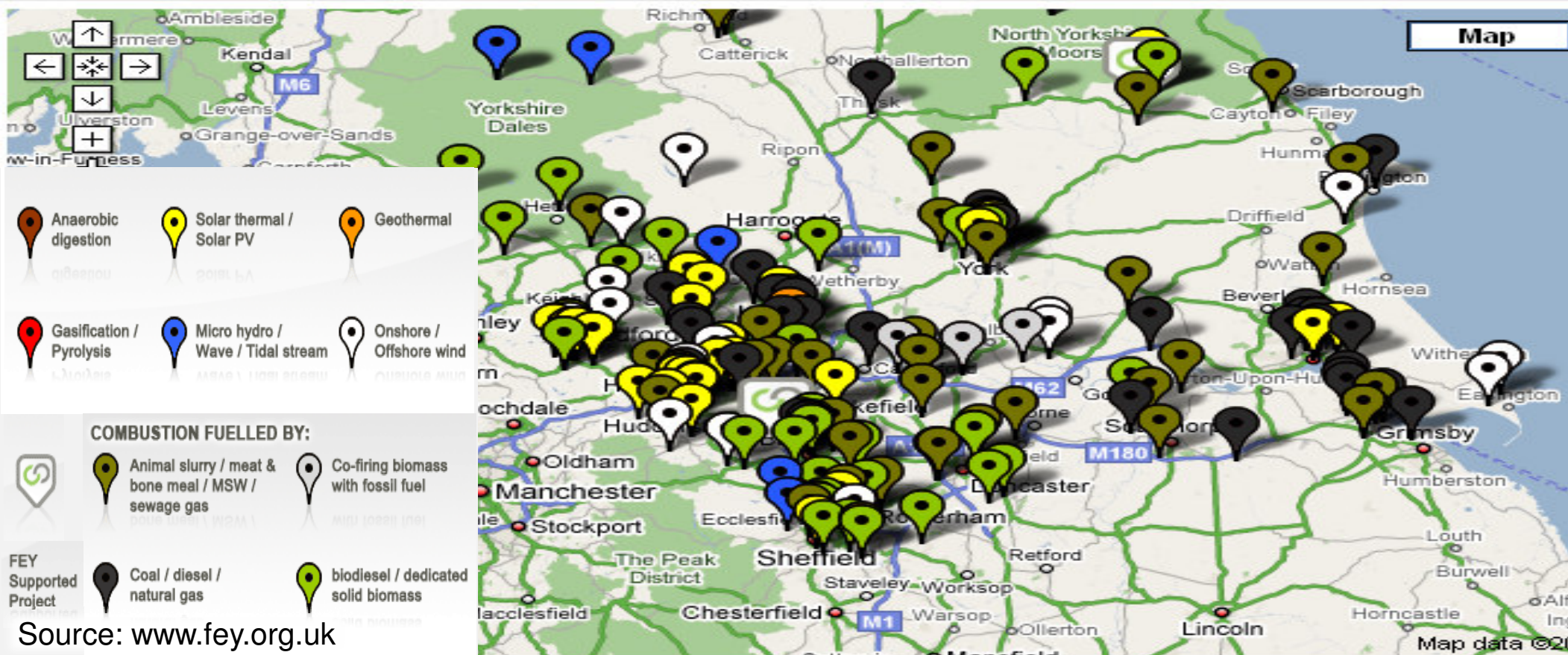
## Questions

- Should a section be provided aimed at developers and applicants?
- What tools and guidance do you find useful currently?
- What experience have you got of implementing renewable and low carbon energy through planning?

# Renewable Energy Toolkit

## Workshop Session 2

Energy Generation Map



# Workshop Session 2

For discussion

## **Discuss (45mins – until 14:35):**

- How the toolkit can help:
  - Does the preliminary structure address the problems and issues?
  - What else? Where to focus our attention?
- Proposed style and format
- How best to share and spread the message
  - What works for you? And why?

## **Feedback (15mins – until 14:50)**

# Renewable Energy Toolkit

## Summary/Next Steps

Energy Generation Map

