



Distributed generation and demand study

Technology growth scenarios to 2032

5 December 2017

- 10.00 **Welcome by chair**
Johnny Gowdy, director, Regen
- 10.05 **Introduction and investment strategy overview**
Nigel Turvey, network strategy and innovation manager, WPD
- 10.20 **Scenario development process**
Poppy Maltby, senior project manager, Regen
- 10.40 **Future domestic and commercial developments study**
Amy Brimmicombe, analyst, Regen
- 11.00 **Short break**
- 11.10 **Roundtable sessions – attendees join 2/3 of the sessions for 30 mins discussion around assumptions for 2032 scenarios:**
1. Distributed generation (Regen – Poppy Maltby)
 2. Demand and new developments (Regen – Amy Brimmicombe)
 3. Storage and flexibility (Regen – Johnny Gowdy)
- 12.10 **Roundtable feedback**
Johnny Gowdy, director, Regen
- 12.30 **Summary, next steps & close**
Nigel Turvey, network strategy and innovation manager, WPD
- 12.45 **Lunch and networking**



Serving the Midlands, South West and Wales

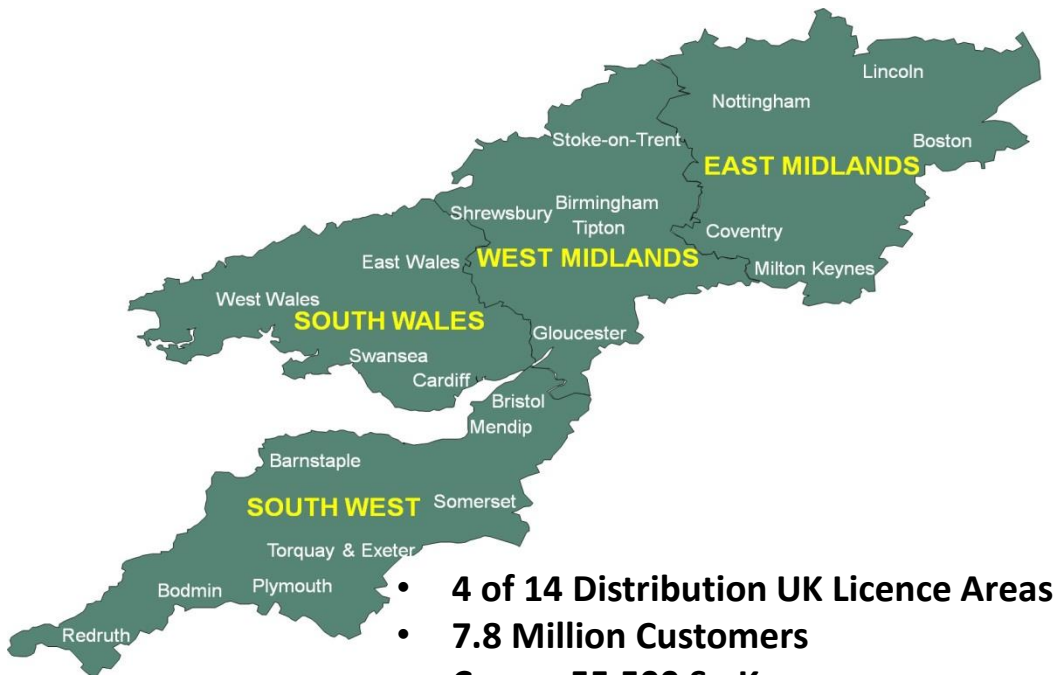
Strategic Investment Options for the South West

5th December 2017

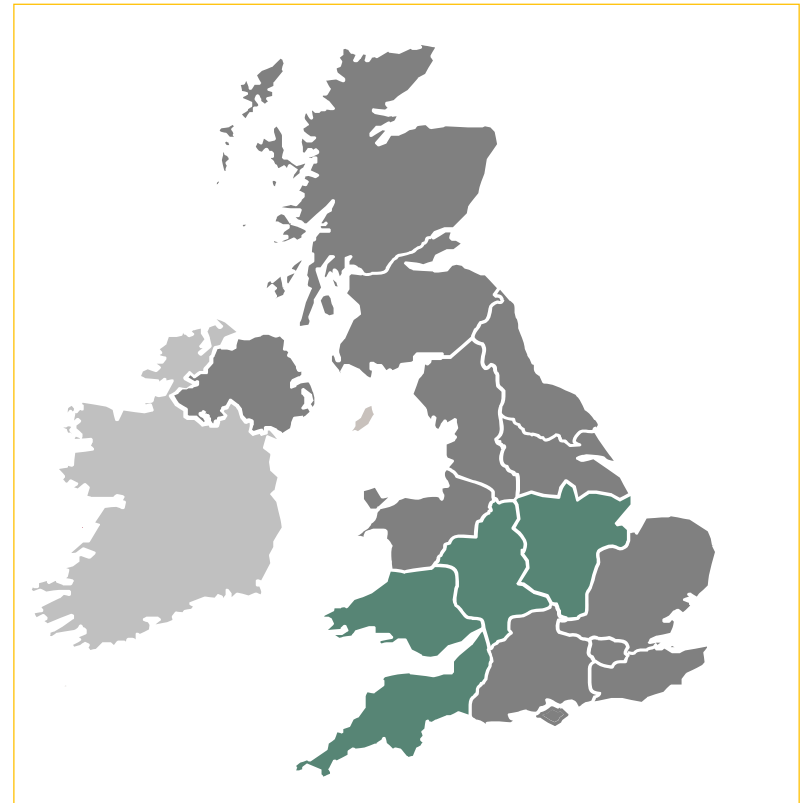
Investment Strategy Overview

- Western Power Distribution – Who are we?
- Drivers for the project
- Aim and approach of the study
- Timetable
- What else are we doing to help enable growth?

WPD – Our Area



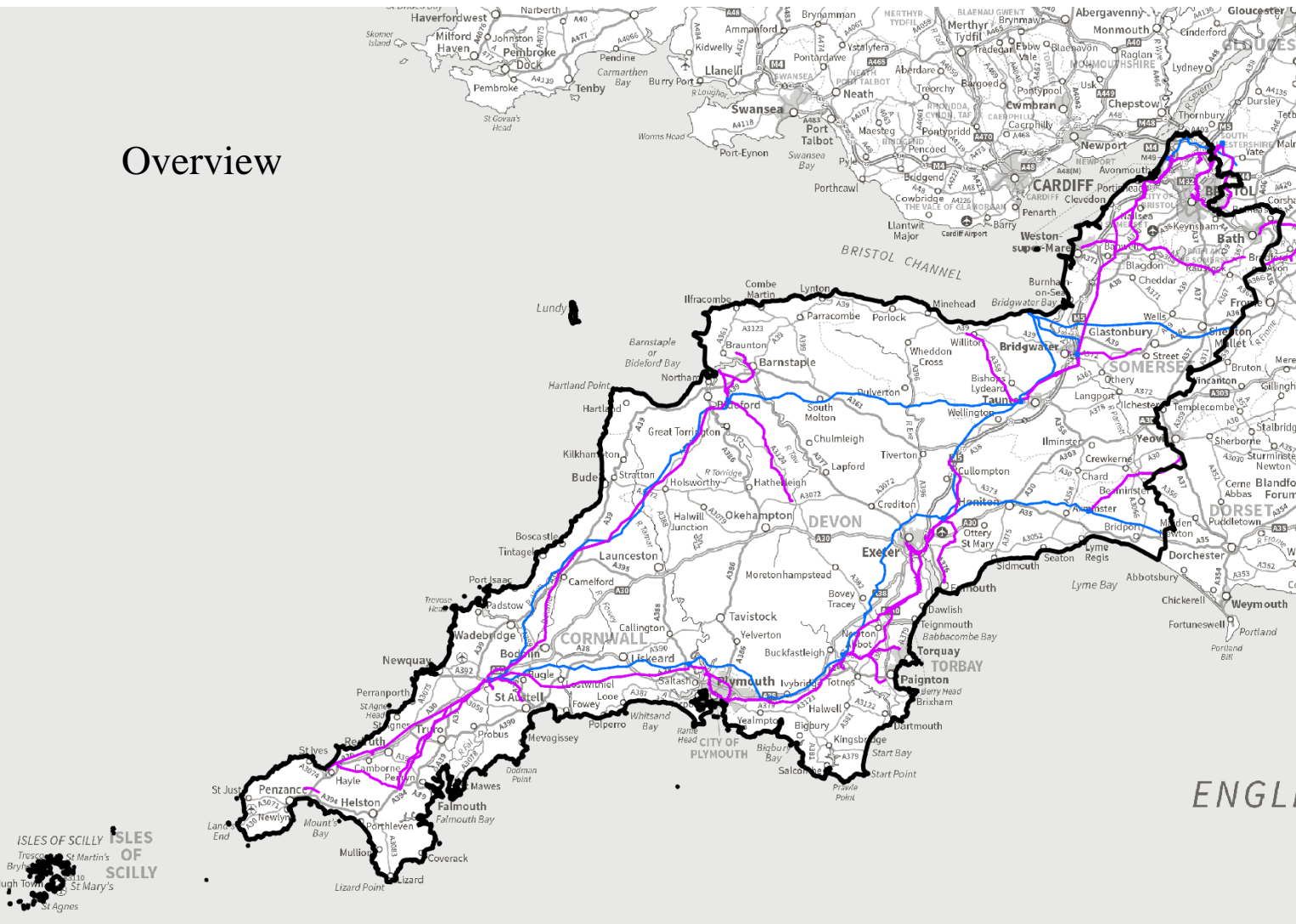
- **4 of 14 Distribution UK Licence Areas**
- **7.8 Million Customers**
- **Covers 55,500 Sq Km**
- **220,000km of Network**
- **185,000 Substations**



Drivers of the need for this project

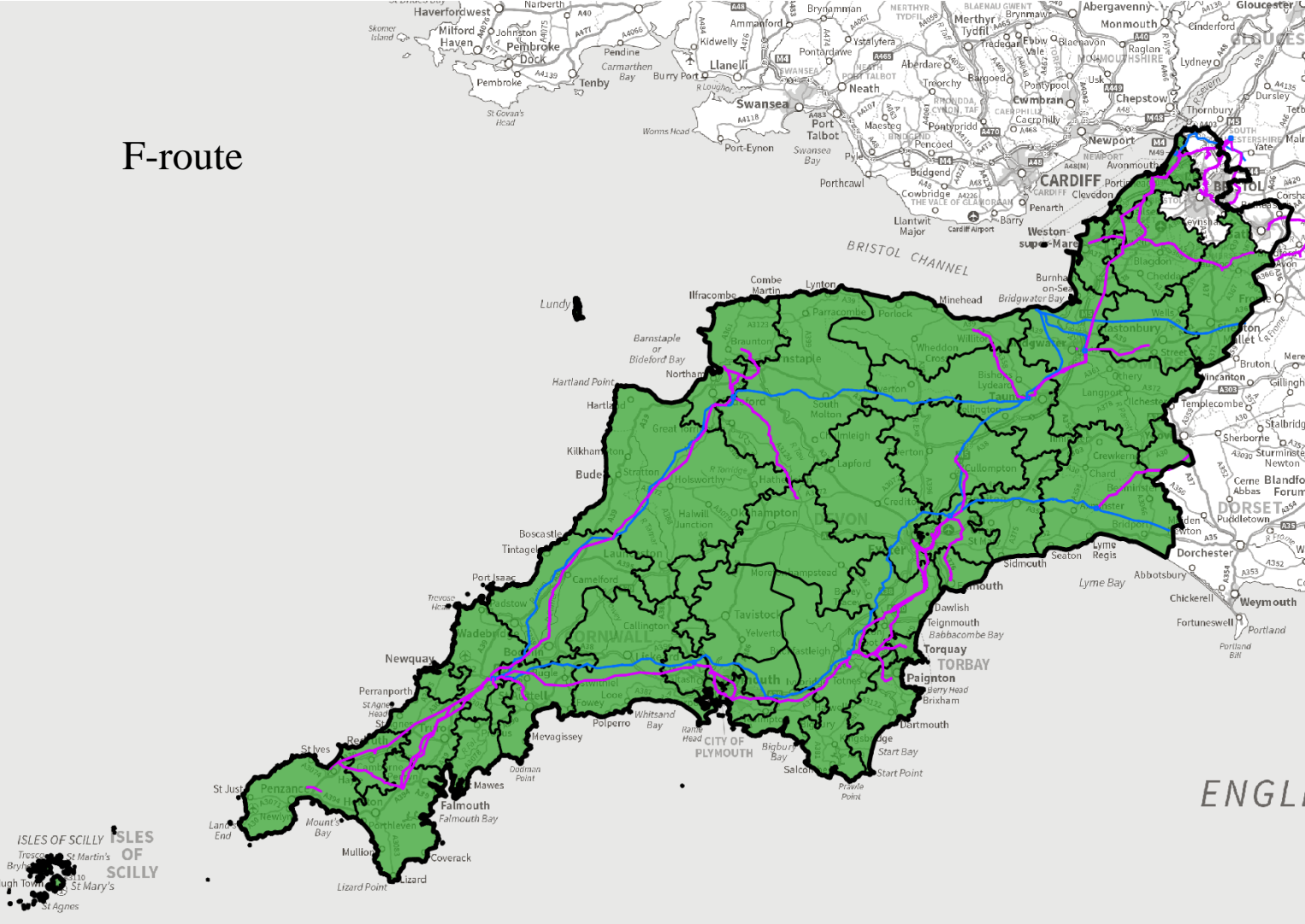
- Uncertainty in the future path of demand & DG growth
- Variability and volatility in network flows increasing; usage patterns changing; new technologies
- 14GW Winter Peak; 20GW DG, 12% of Energy
- Significant changes in energy system operation: need for coordination if growth is to be achieved economically
- Ofgem wanting to understand the value to the wider customer base if they were to fund strategic reinforcement
- Need to understand whether there are 'no/low regret' investment options
- What does Brexit mean for renewables, LCTs and electrical self sufficiency?

Overview

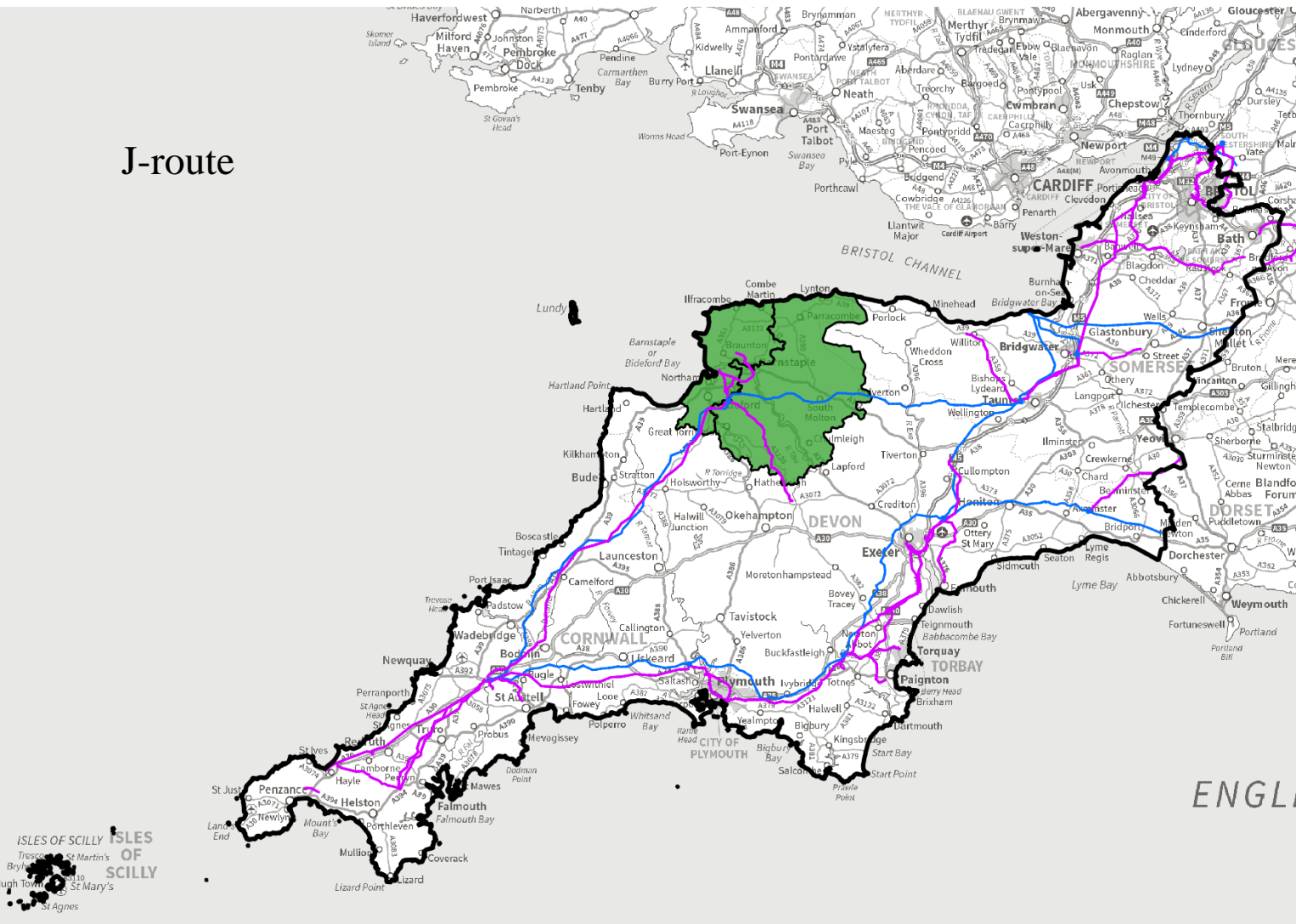


ENGL

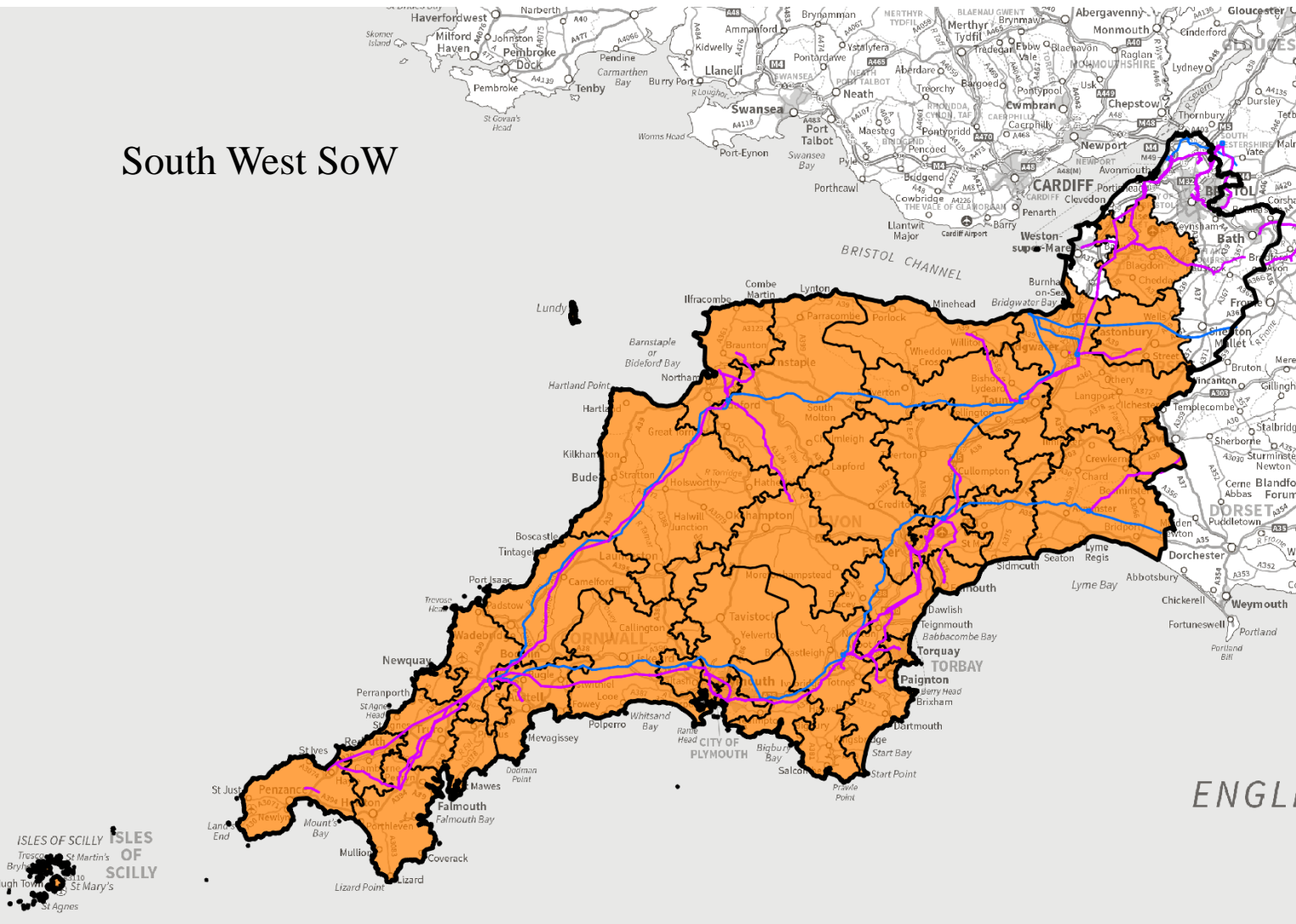
F-route



J-route

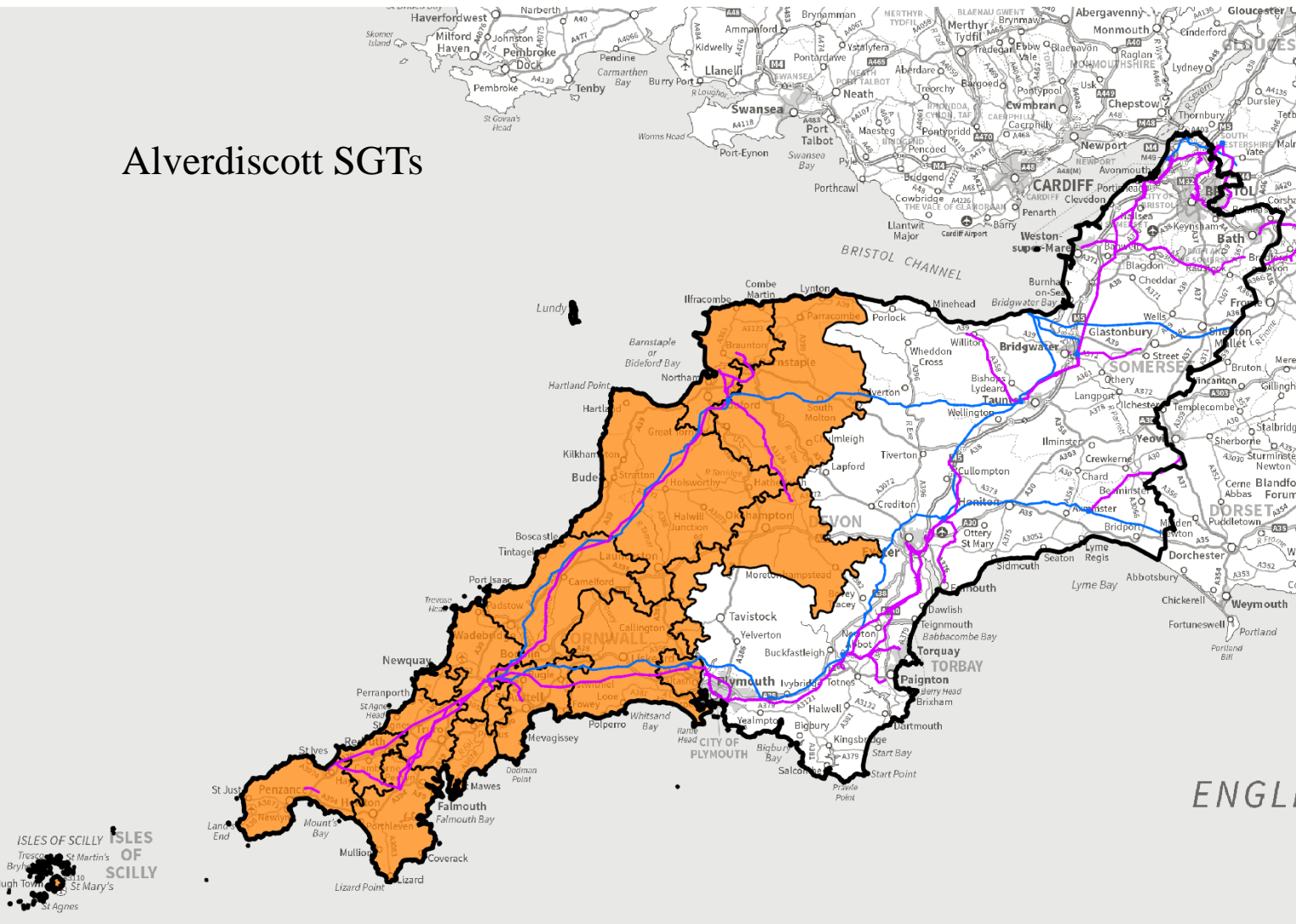


South West SoW

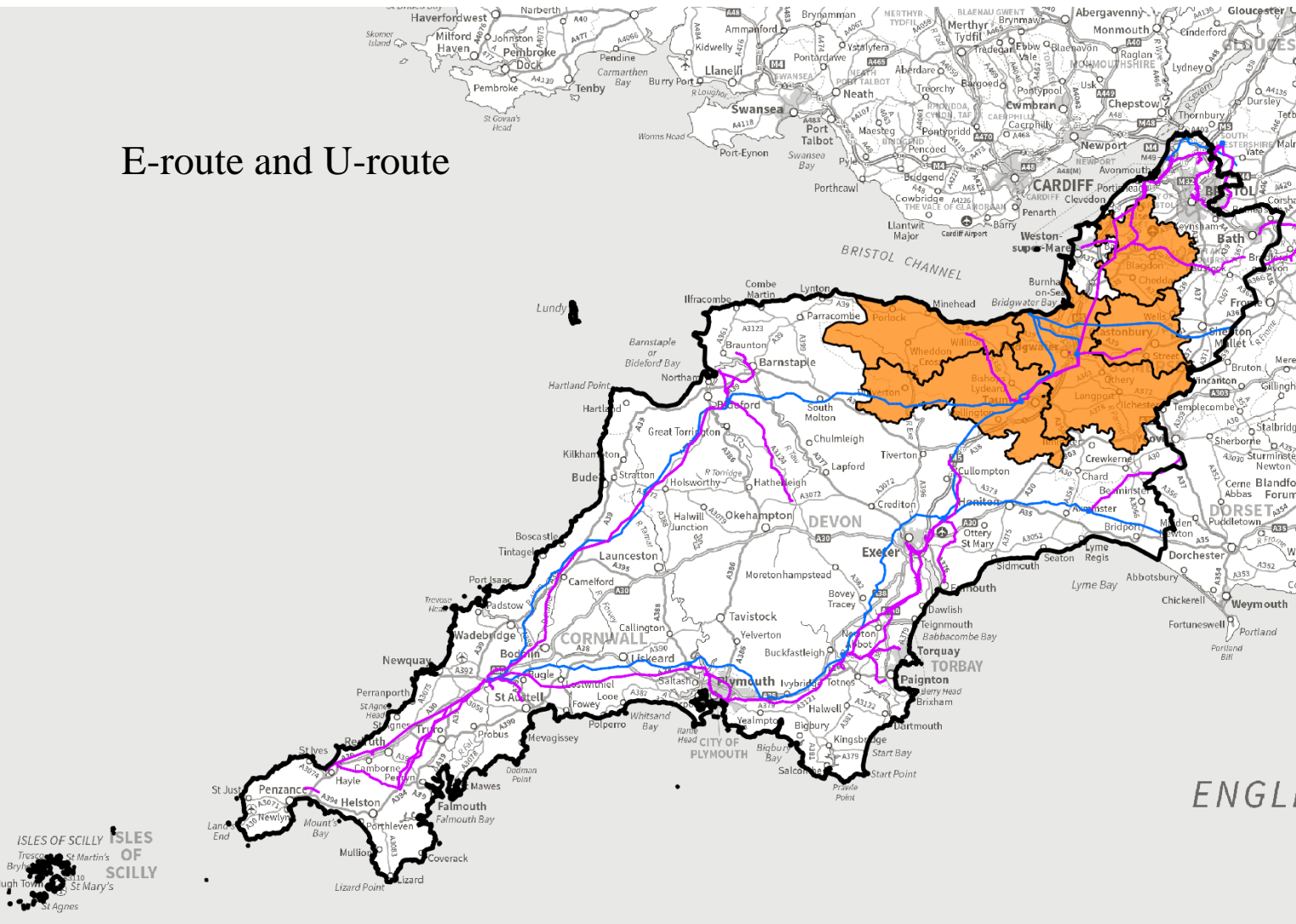


ISLES OF SCILLY
Tresco
St Martin's
Bryher
Plymouth
St Mary's
Lough Town
St Agnes

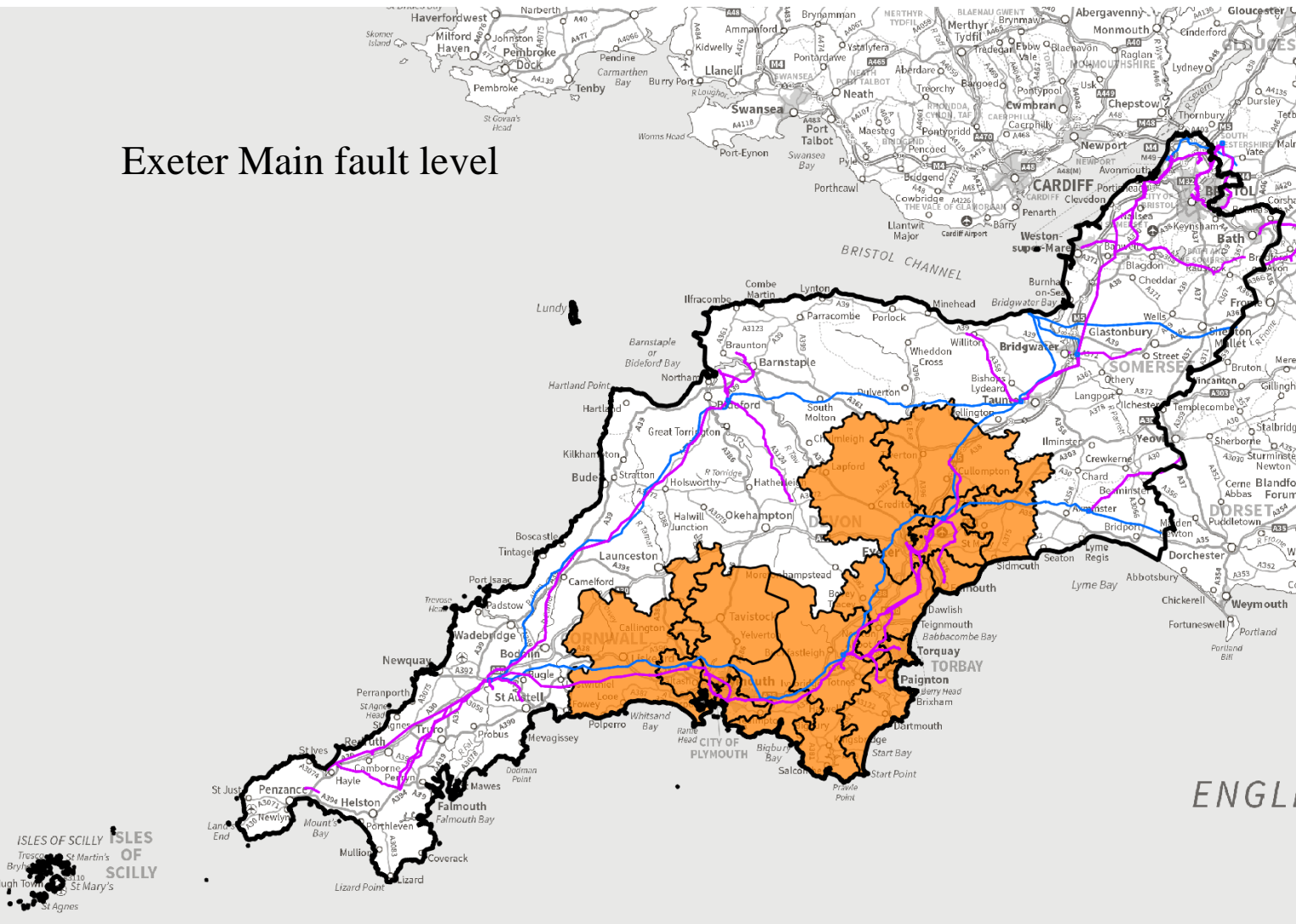
Alverdiscott SGTs



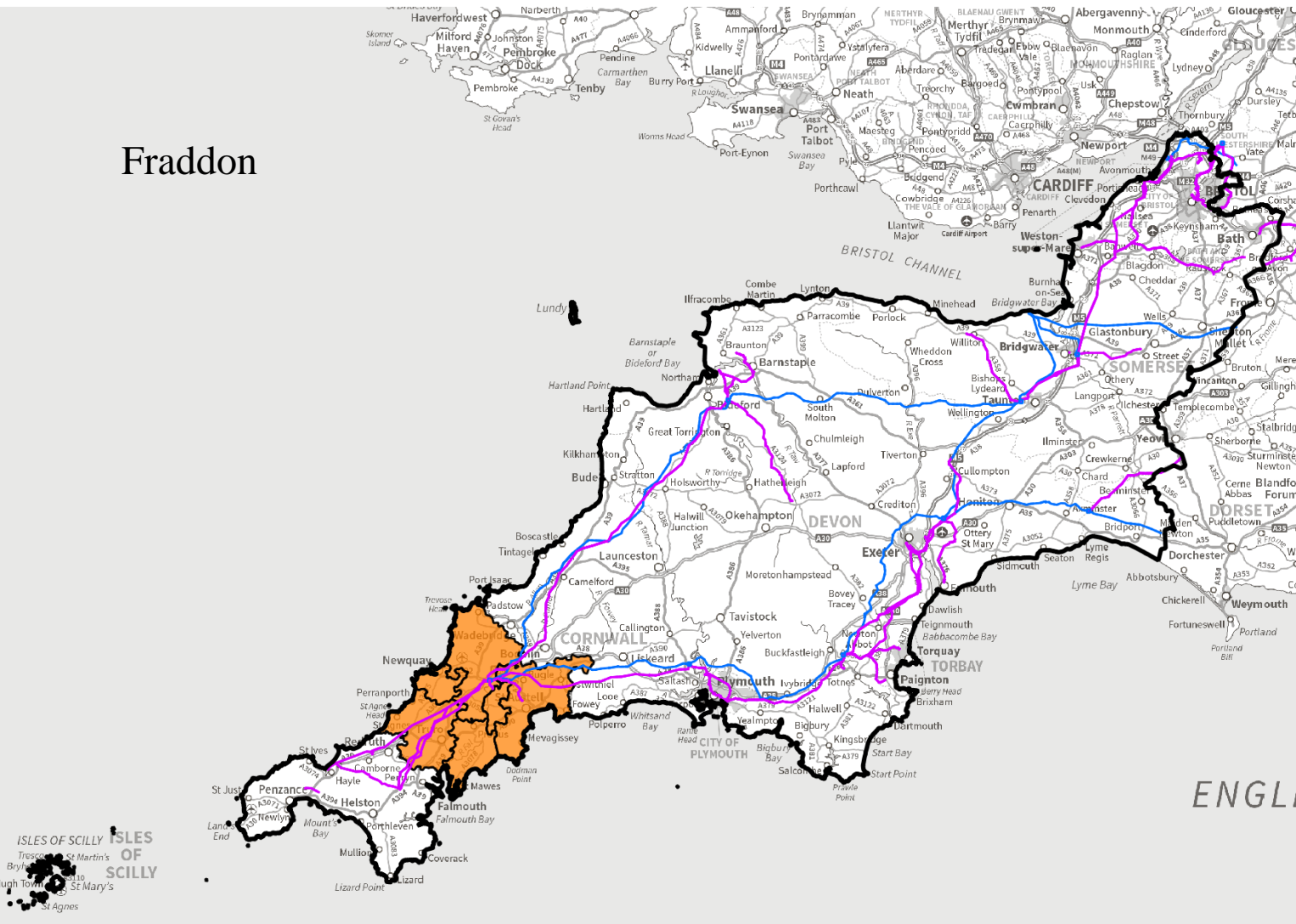
E-route and U-route



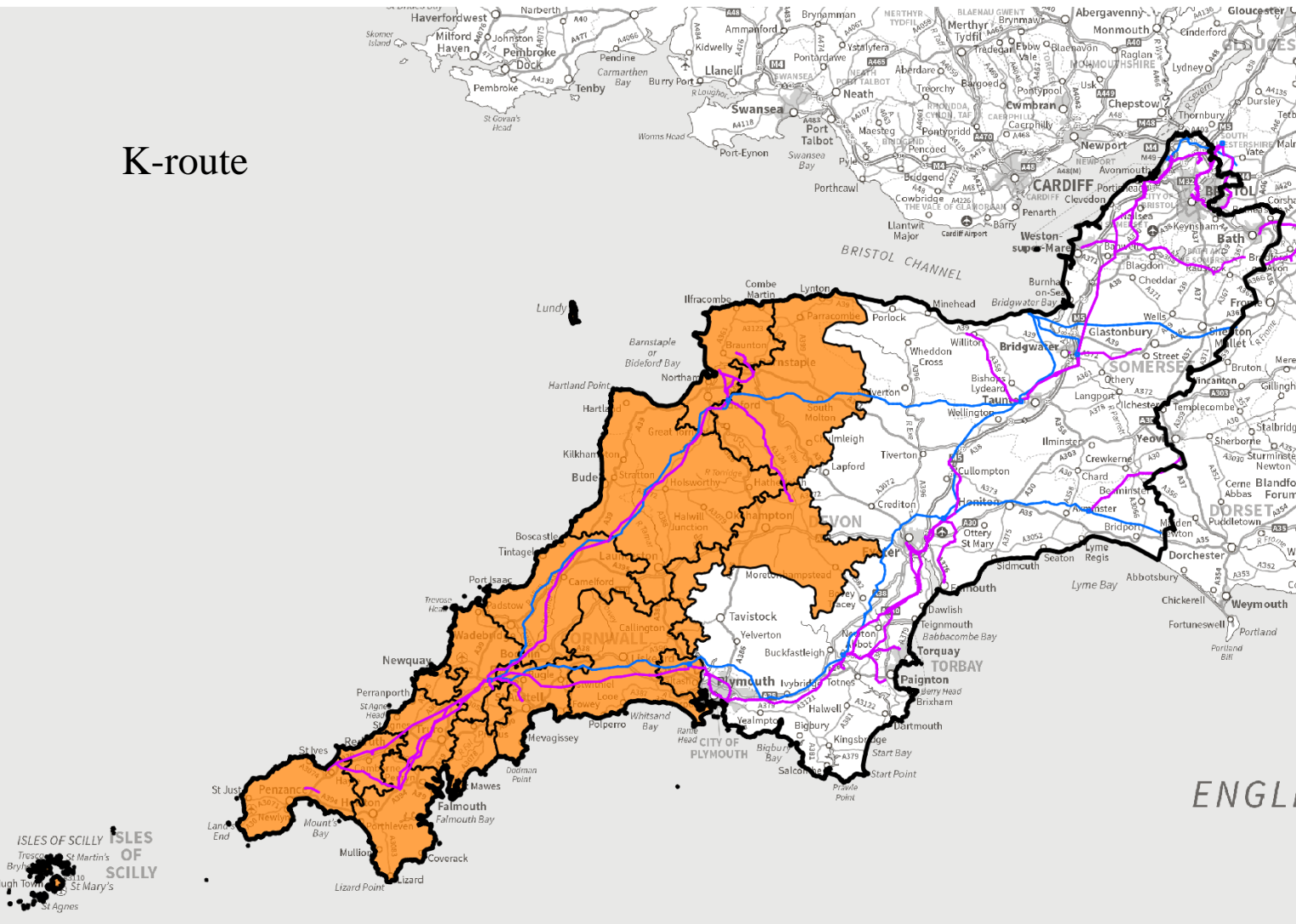
Exeter Main fault level



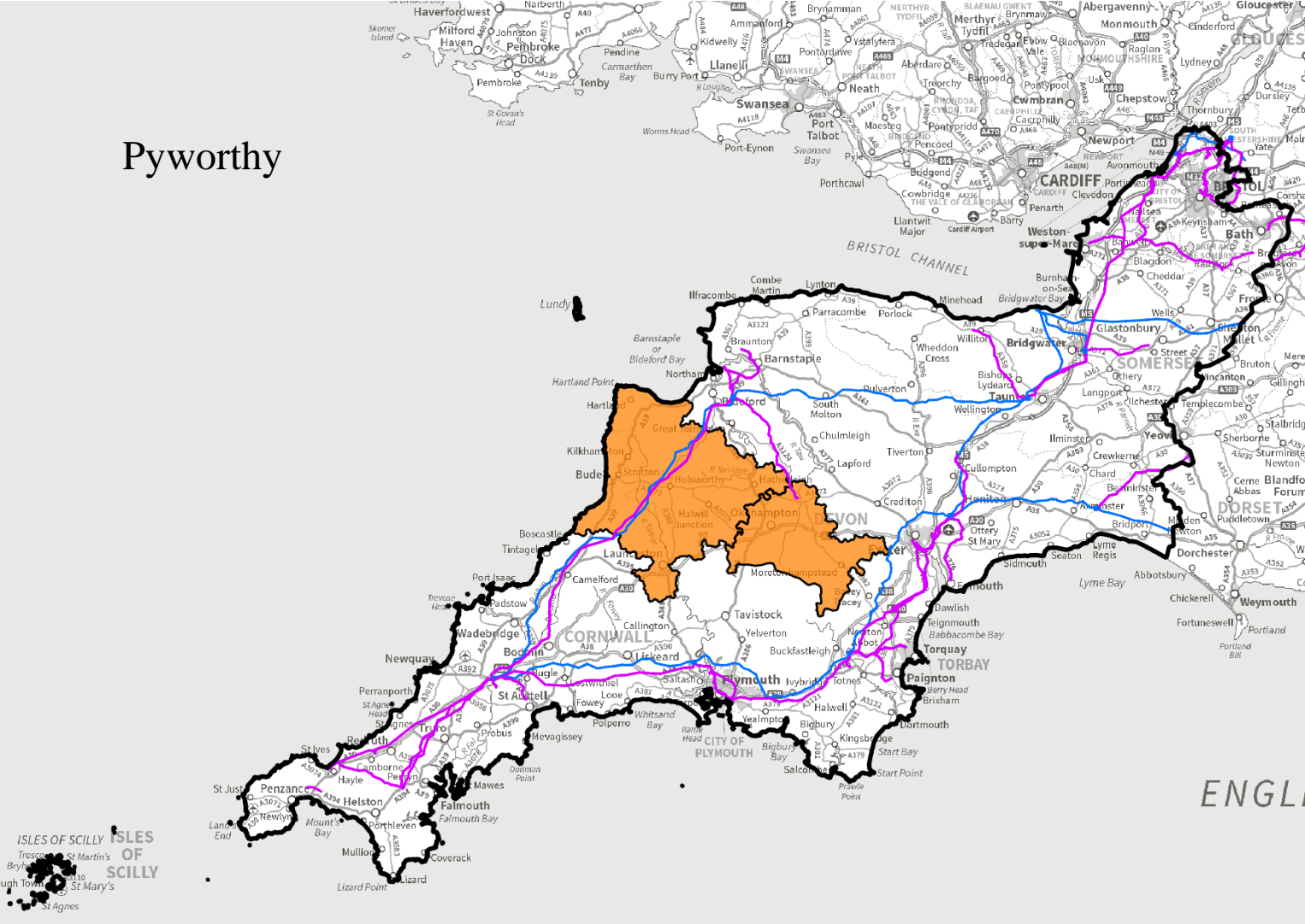
Fraddon



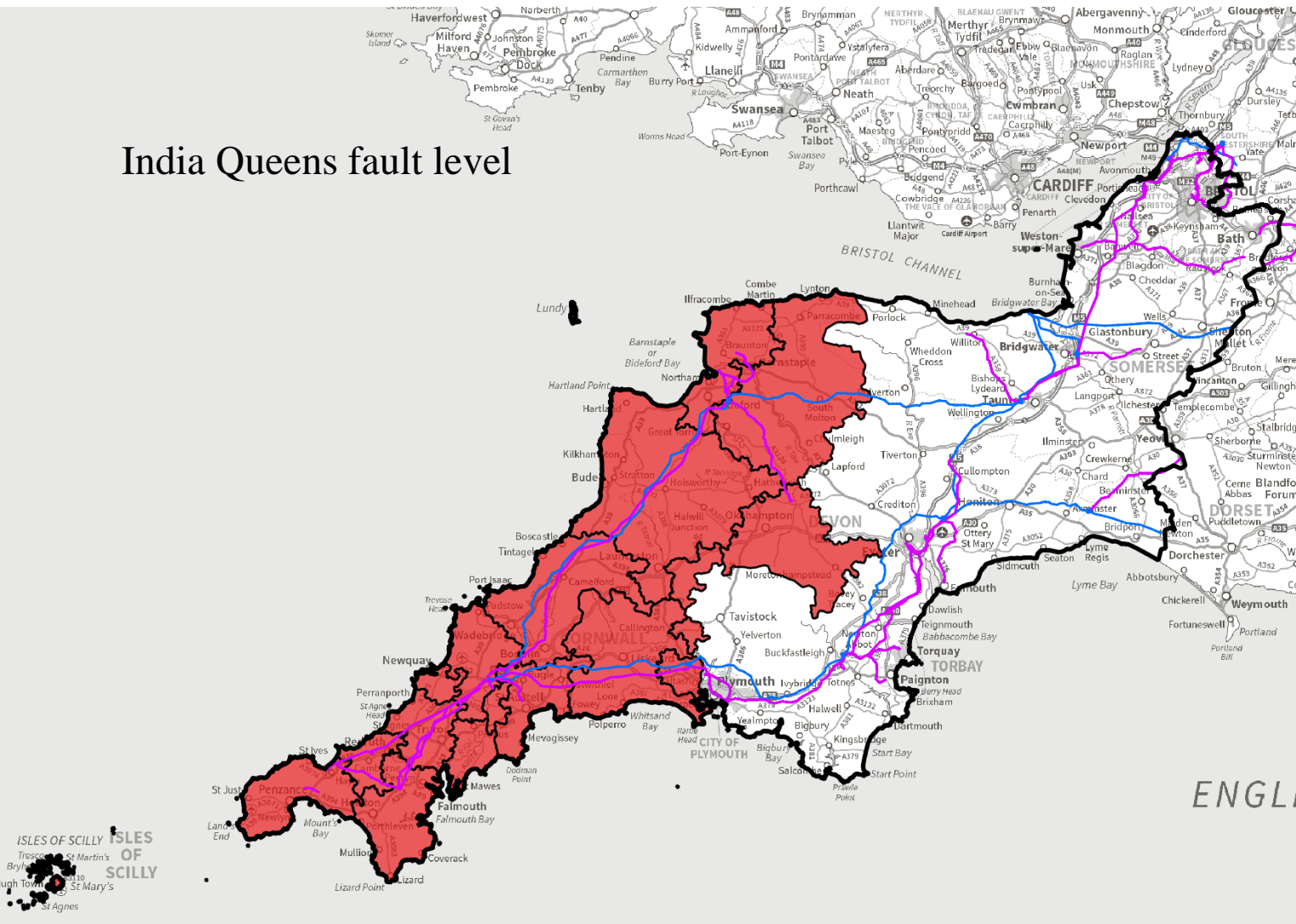
K-route



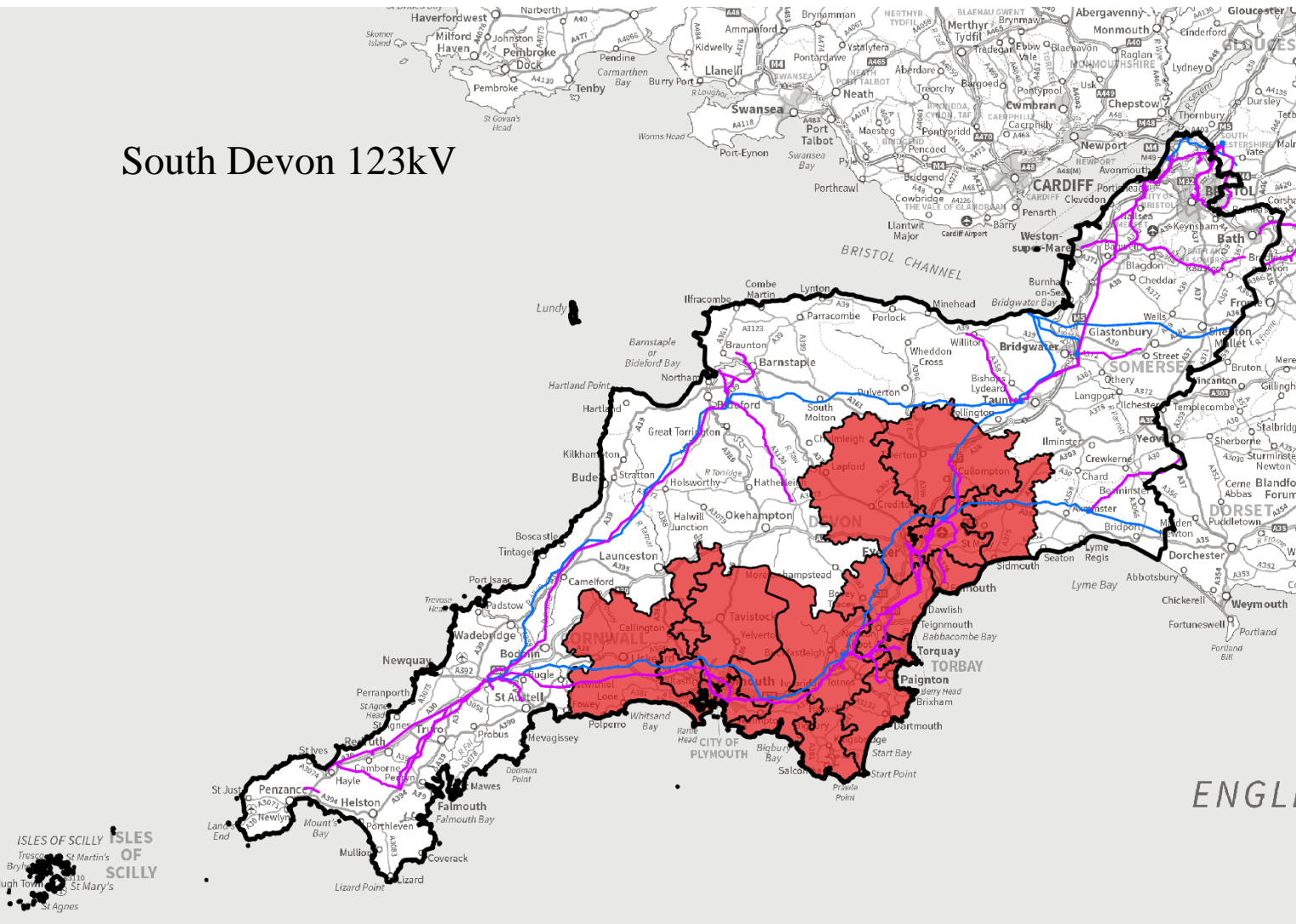
Pyworthy



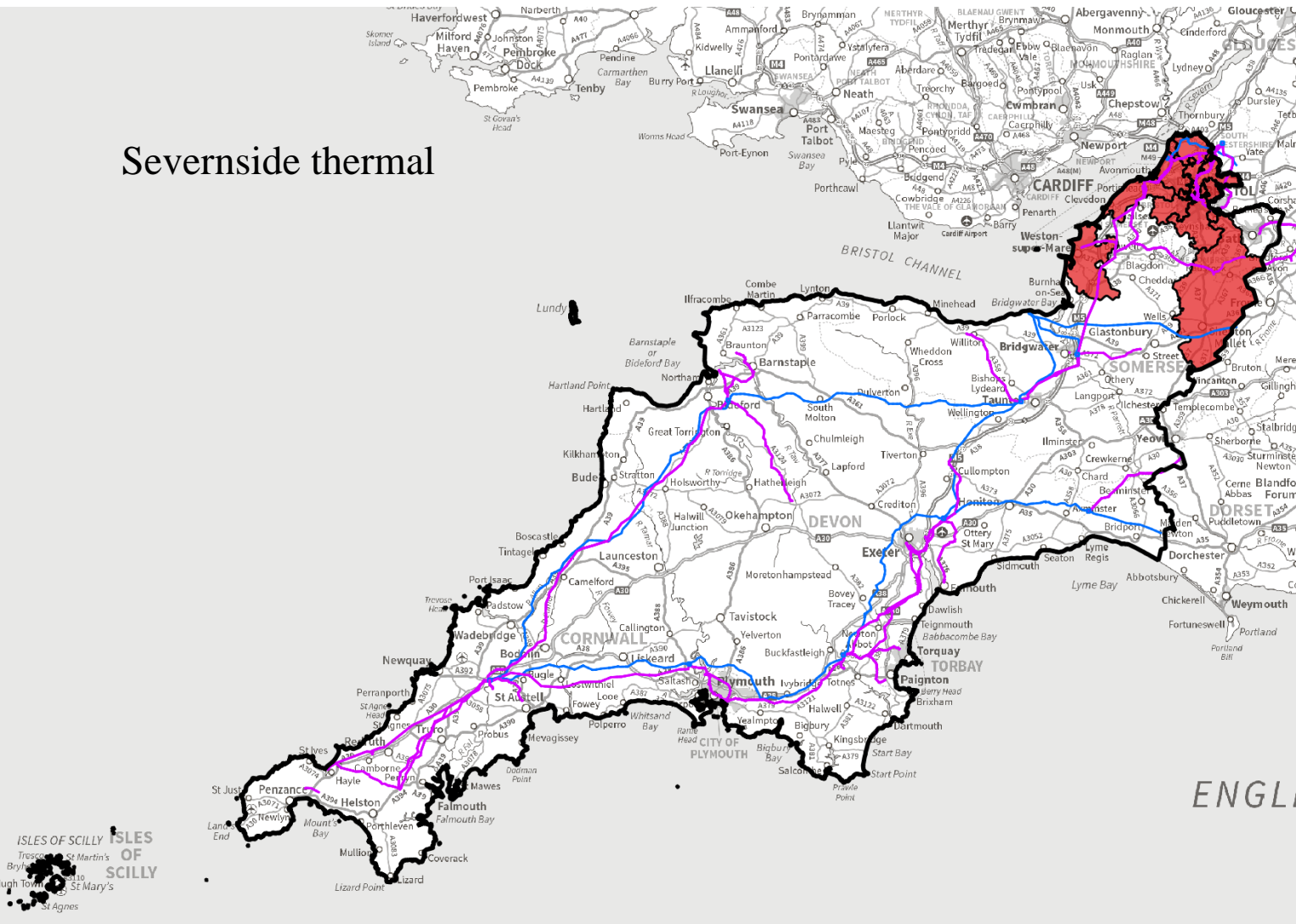
India Queens fault level



South Devon 123kV



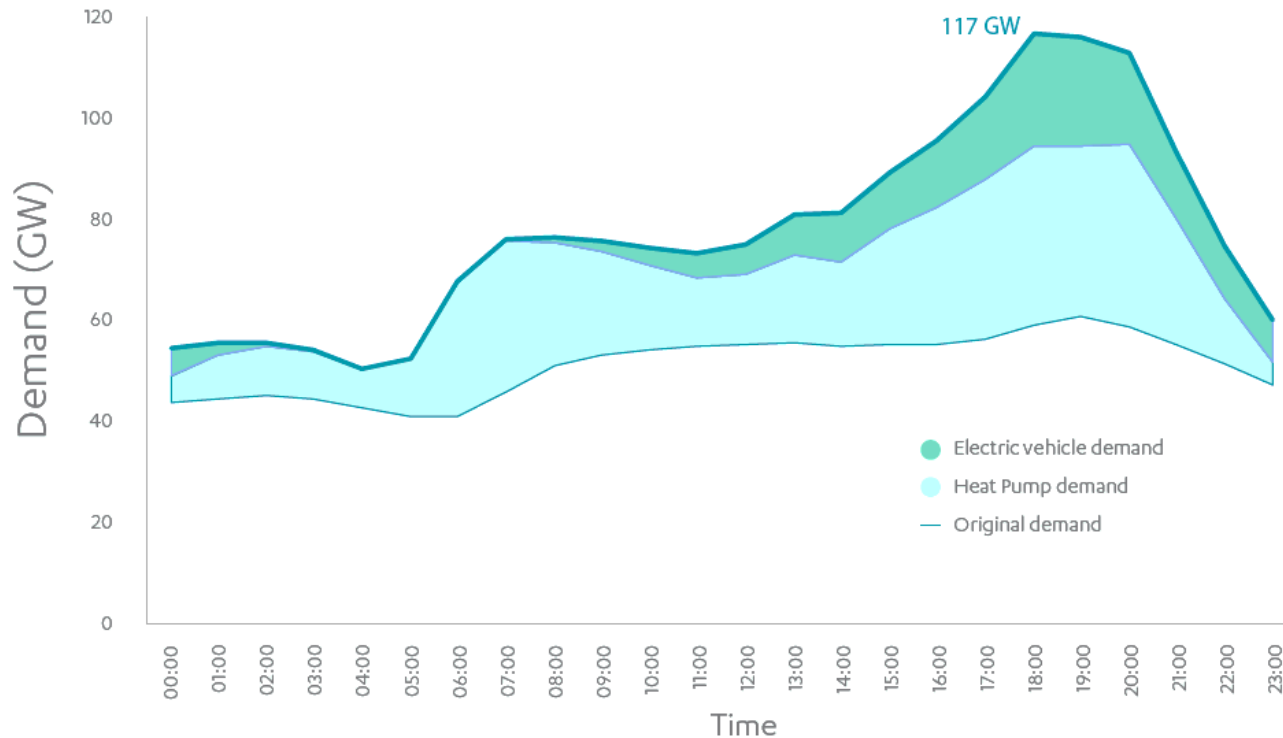
Severnside thermal



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Tresco
St Martin's
Bryher
St Agnes
St Mary's
Lizard Point

Significant uncertainty of future growth in electricity demand

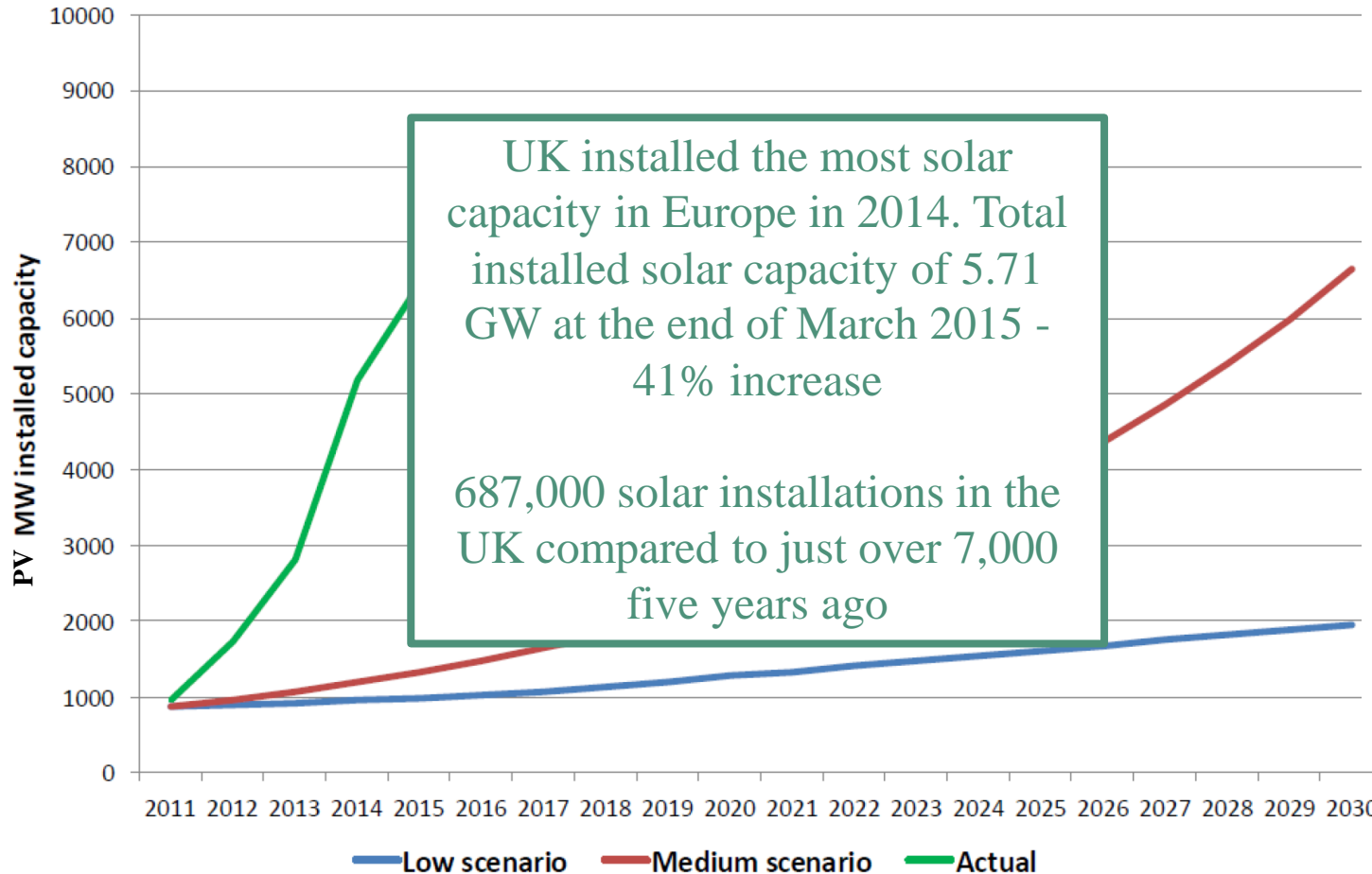
Possible future daily demand scenario with sub-optimal power system¹⁰



Infrastructure
Commission
Smart Power
Report March
2016

Significant uncertainty in DG growth

Sources: EA Technology 2012, DECC



Current WPD South West DG Data

Generator type	Connected [MVA]	Accepted [MVA]	Offered [MVA]	Total [MVA]	Enquired [MVA]
<i>Photovoltaic</i>	1,240	111	30	1,381	6
<i>Wind</i>	294	82	12	388	18
<i>Landfill Gas, Sewage Gas, Biogas and Waste Incineration</i>	6	9	41	55	0
<i>CHP</i>	34	7	2	43	0
<i>Biomass and Energy Crops</i>	1	0	2	3	0
<i>Hydro, Tidal and Wave Power</i>	5	-	1	6	0
<i>Storage</i>	16	244	656	916	497
<i>All Other Generation (inc Mixed)</i>	523	491	323	1,336	234
Total	2,118	944	1,068	4,129	756

Aim of Study

- Assessing the potential growth of customer demand and LCT uptake by type, general location and year
- Identifying thermal, voltage and fault level constraints that result
- Assessing options for conventional reinforcement
- Providing recommendations for ‘low regret’ investment and identifying the cost and timescale of these
- Use this to understand the economic potential for demand side response and/or generation constraint to avoid reinforcement
- Begin to attach ‘Energy’ figures to future flexibility required

Timetable for Strategic Study

- Stakeholder workshop to get stakeholder input to approach and scenarios to be considered – December 2017
- Undertake network studies and identify solutions with costs - 2018 Q1
- Sensitivity work – i.e. how much ‘headroom’ do the potential solutions give – 2018 Q2
- Assess potential for demand response/generation constraint – 2018 Q2
- Complete report – June 2018
- Dissemination event or webinar – July 2018

The Transition from Distribution Network Operator to Distribution System Operator

Distribution
Network
Operator



Distribution
System
Operator

Passive networks
managing maximum
power flows

Active networks
managing real-time
energy flows

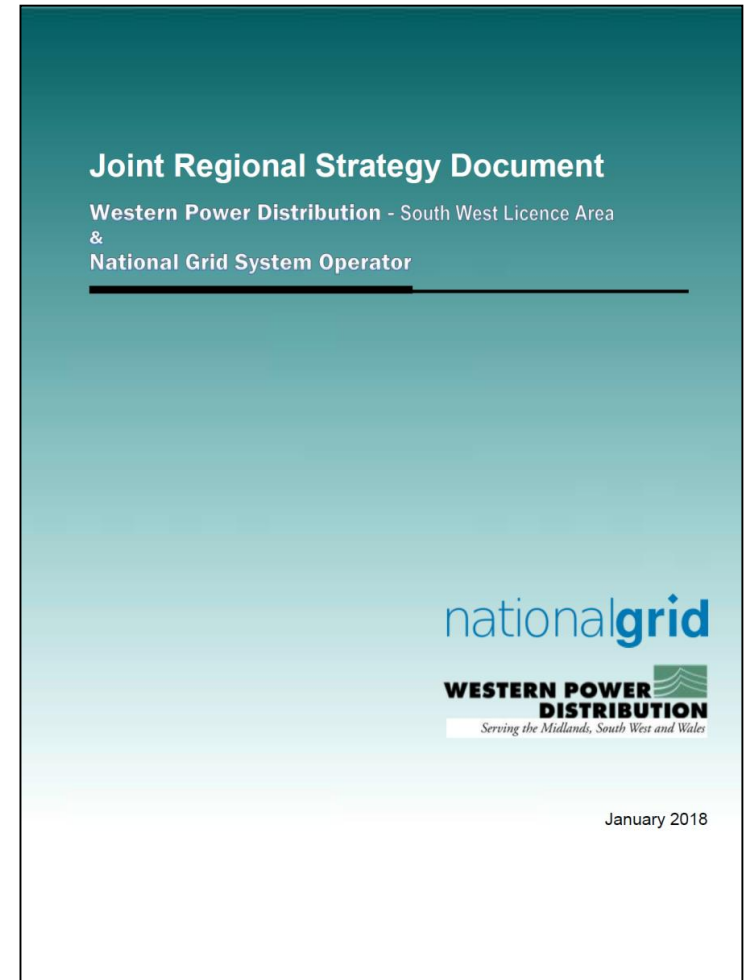
WPD/National Grid Regional Development Programme

Programme includes:

- Sharing of existing data and network models on a more granular basis
- Collaborative design of whole system modelling studies
- Covers steady state thermal, voltage and fault level
- National Grid to share dynamic modelling techniques
- Covers three scenarios:
 - 2020 3GW
 - 2025 4GW
 - 2030 5GW
- 2020 network models used as basis for study
- Future network requirements will be modelled and solved using both conventional reinforcement and commercial non-build solutions
- Collaborative whole system Network Options Assessment will be trialled
- Processes ,methodologies and results to be documented for external publishing through Open Networks
- Programme to finish in March 2018

Customer Benefits

- Whole system roadmap of DG, LCT and demand growth scenarios in the South West
- Establishes a co-ordinated pathway to achieve greater levels of DG growth
- Recommends least regret works to be completed to ensure on-time enabling of customer requirements
- Reduces time to connect for distribution customers due to active T-D co-ordination ahead of customer requirements
- Establishes the CBA for distribution customers providing flexibility and associated benefits to solve transmission issues
- Produces a regional strategy to enable identified outputs.



What might this mean for our customers?

- WPD is becoming more active in its approach to network operation:
 - Active Network Management - rolling out across all network
 - Extending ANM to demand and storage customers
 - Transparency with our data
- Revenue streams for DSR/flexibility services – DSO requirements will be predictable and forecast in advance.
 - Revenue from demand ‘turn up’/‘turn down’ services
 - Revenue from generation ‘turn up’/‘turn down’ services
 - Revenue from storage energy shifting services
 - Revenue from demand shifting/influencing
 - Revenue from reactive power support
- Quicker, more efficient connections for customers willing to become active energy system participants

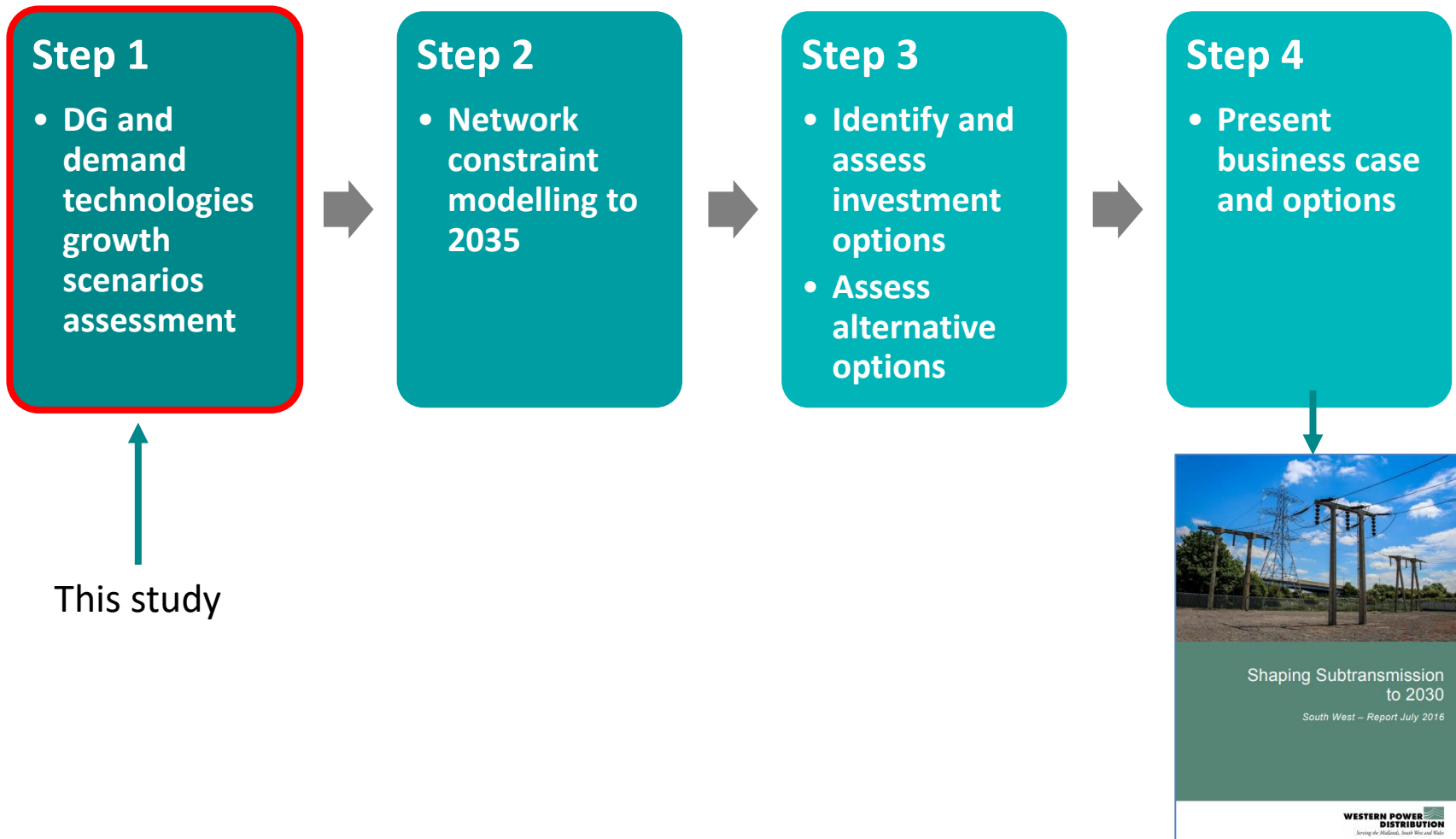


2035 Electricity Scenarios WPD South West licence area

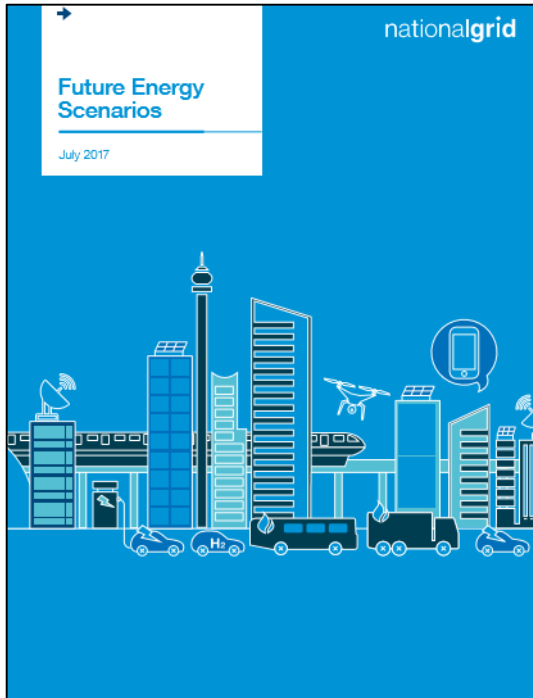
Stakeholder workshop – 5 December 2017

- Process
- ESAs
- Technologies
- Methodology
 - Data sources
 - Using the FES scenario
 - Trend analysis
 - Resource assessments

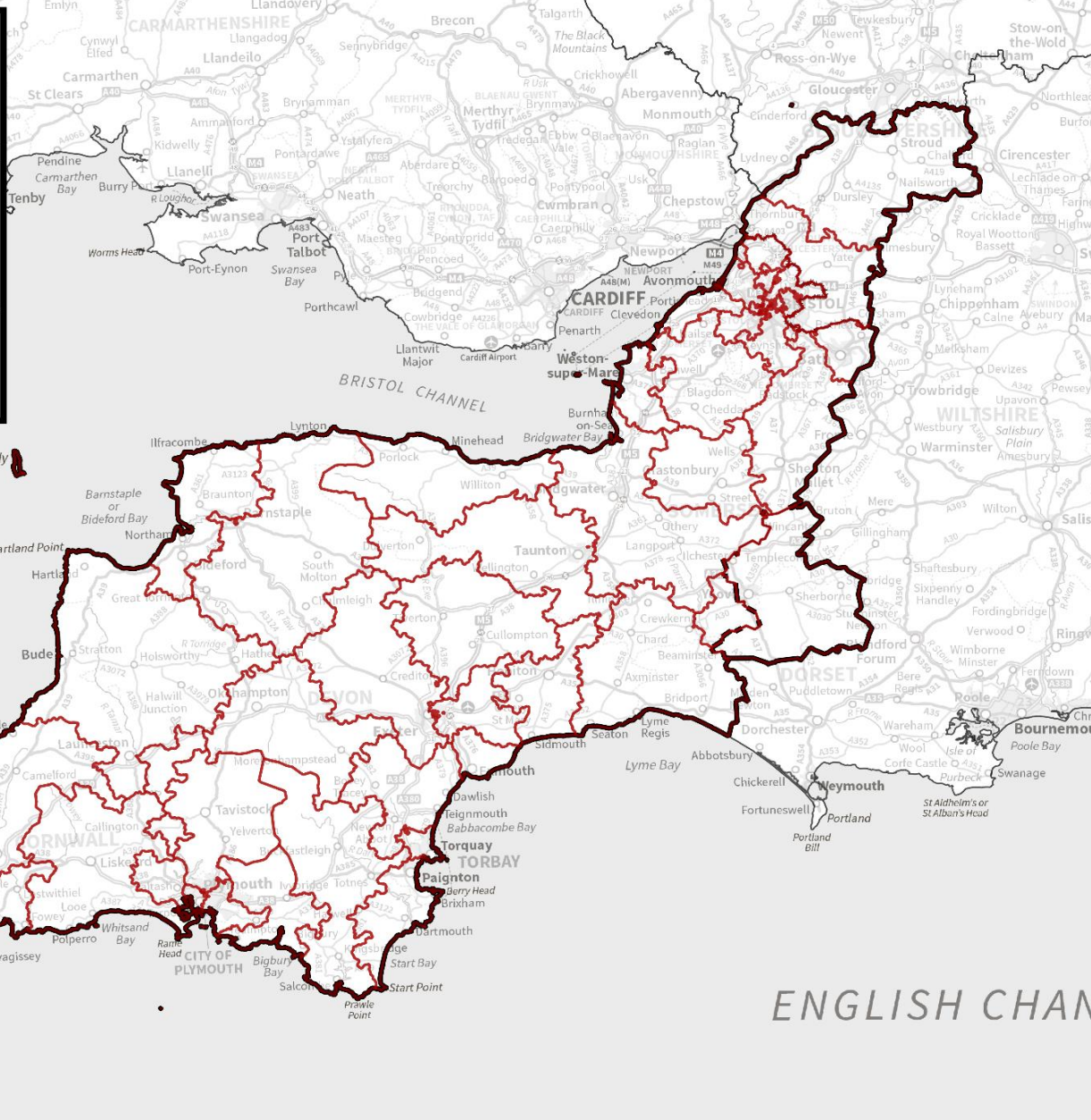
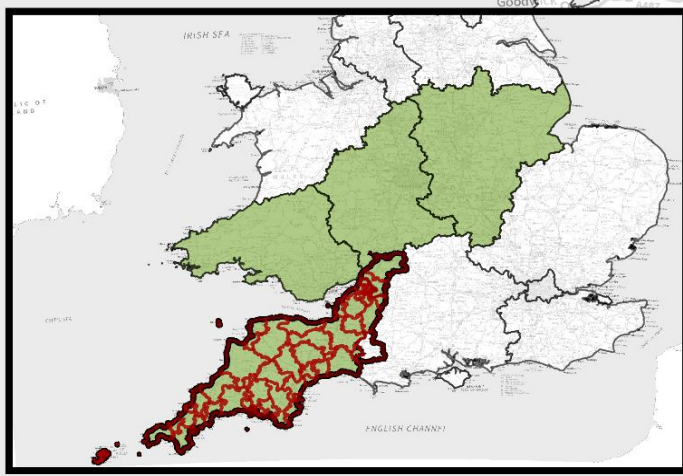
Understanding the need for strategic network investment to 2032 Options study



Future Energy Scenarios



South West - Electricity supply areas (ESAs)



Supply

Distributed generation technologies

Solar PV
- rooftop and ground mounted

Onshore wind

Hydropower

Energy from waste

Anaerobic digestion

Fossil Fuel

Other techs
inc. Marine & Geothermal

Demand

Key areas with potential for disruption

Electric vehicles

Heat pumps (by type)

Air conditioning

New build developments (residential)

New build developments
(non-residential)

Storage

Energy storage at distribution level

Response services

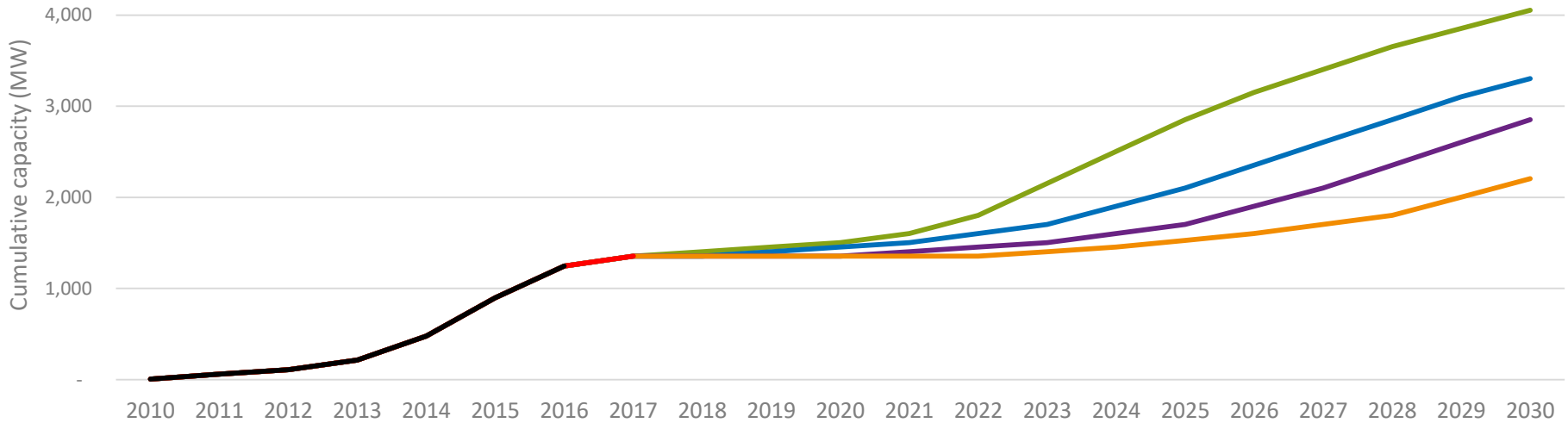
Reserve services

High energy user behind meter

Own use and community

Co-location

- i. South West licence area
- ii. 52 ESAs
- iii. Generation, storage and demand technologies
- iv. Annually from 2018 to 2032
- v. Four scenarios defined by differing levels of economic growth and green ambition



Current baseline

WPD connection data, Regen national renewables project database, FiT data, ROC data, plus other publicly available data



Pipeline projection

Analysis of current projects in the planning system and with grid connection agreements for large scale technologies. Dependent on technology when projection goes out to.

Growth scenarios (to 2032)

Growth scenarios based on National Grid's FES- applied at a local level

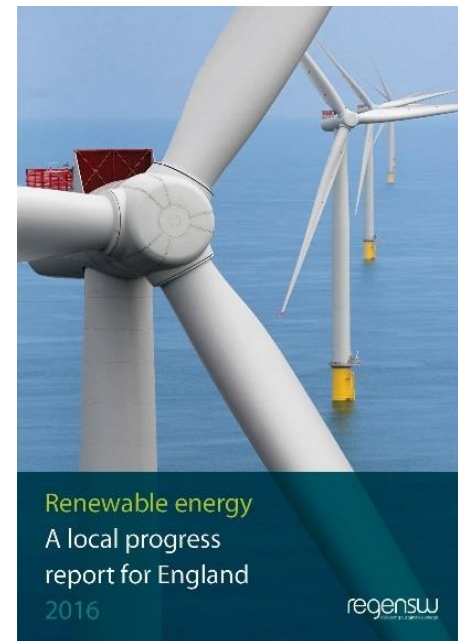
- Two degrees —
- Consumer power —
- Slow progression —
- Steady state —

Baseline includes:

- Regen database including England progress report for renewable energy
- WPD connection data,
- AddressBase (Ordnance Survey) data
- Plug-in electric vehicle grants and anonymised DVLA EV registered keeper data
- FiT data, ROC data etc..

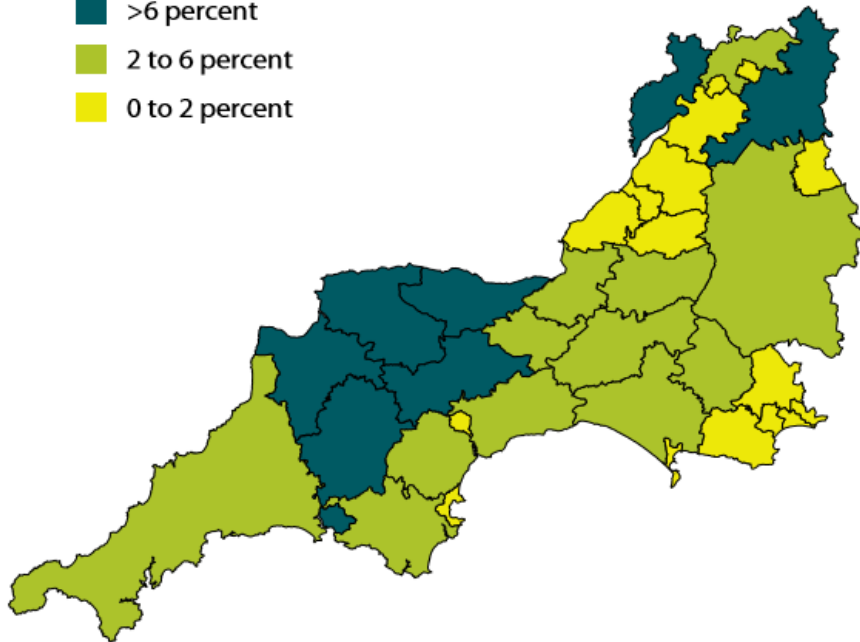
Pipeline includes:

- Projects in planning system
- Grid connection agreements for large scale technologies.
- Local plans for residential and non-residential projections with data validation
- Data validation with local authorities



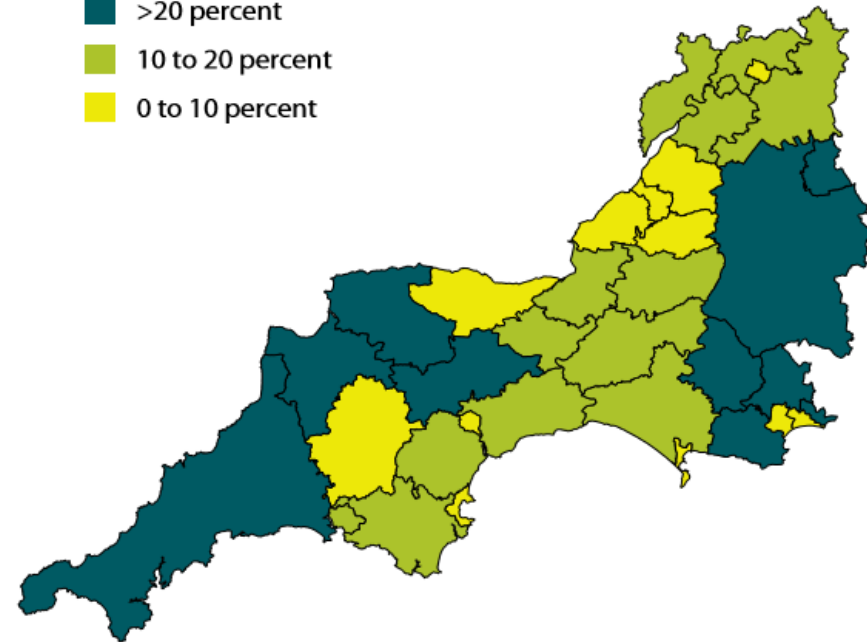
Percentage domestic heat met from renewable heat generation by local authority

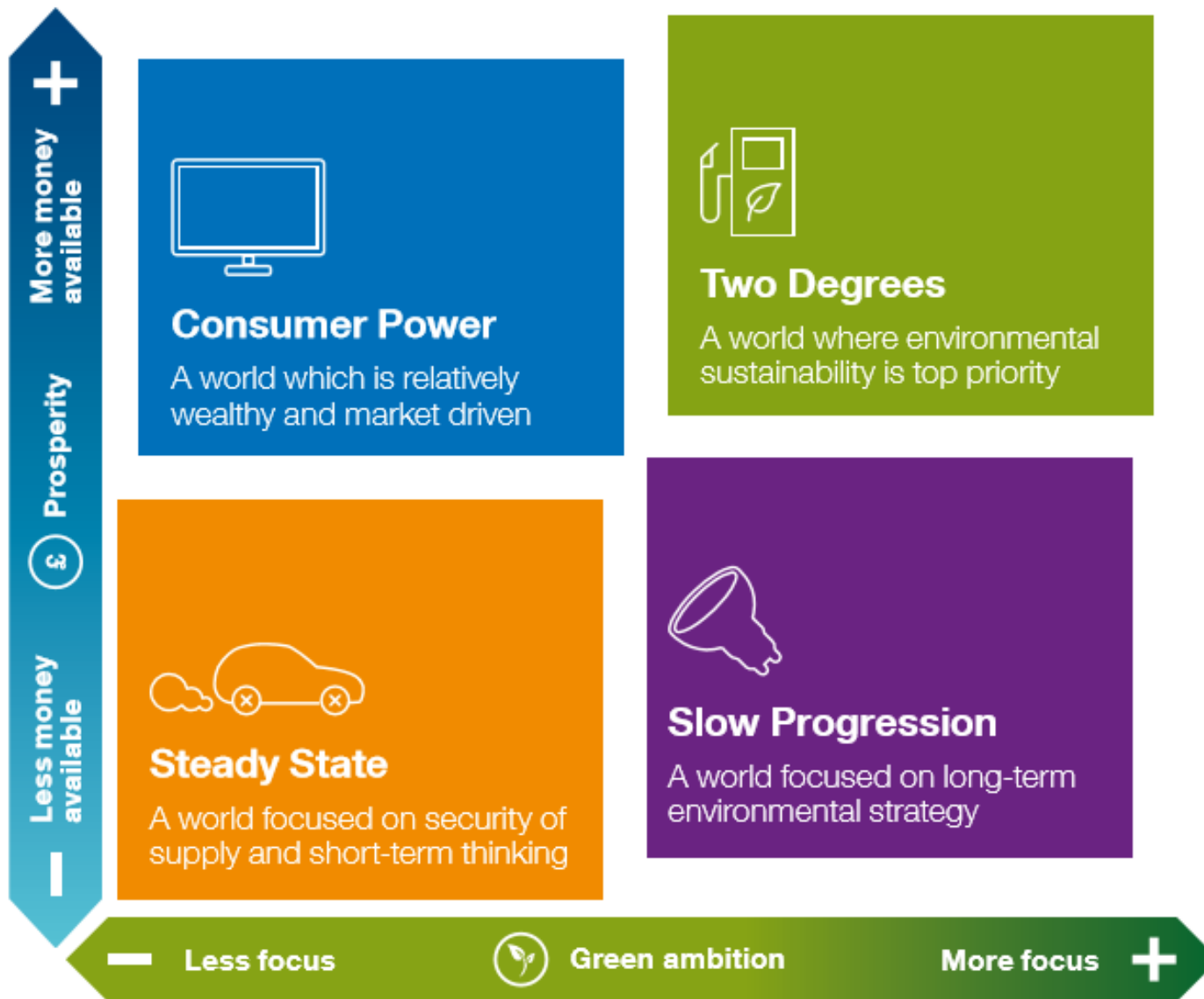
- >6 percent
- 2 to 6 percent
- 0 to 2 percent



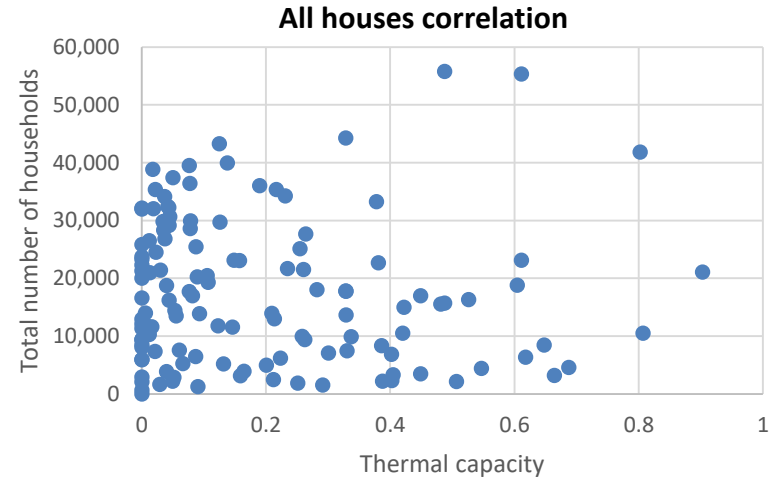
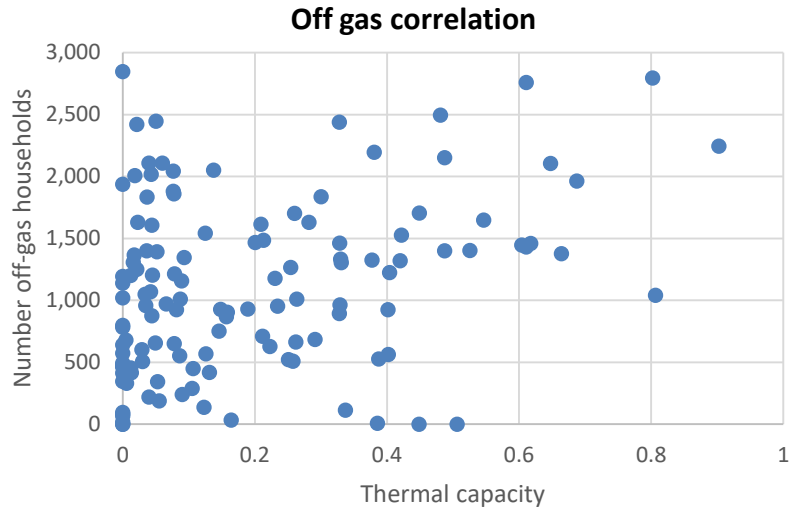
Percentage electricity met from renewable electricity generation by local authority

- >20 percent
- 10 to 20 percent
- 0 to 10 percent

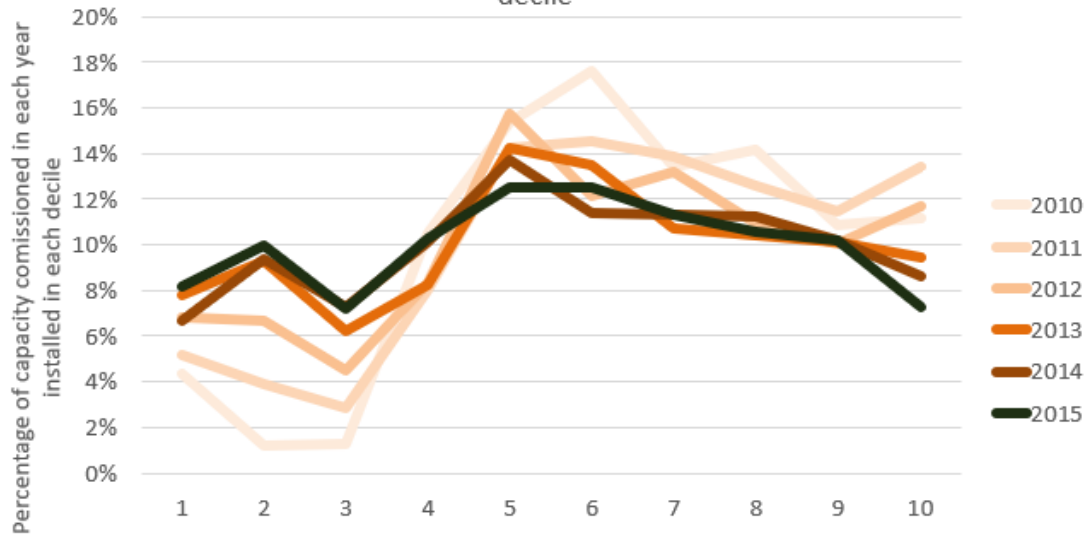




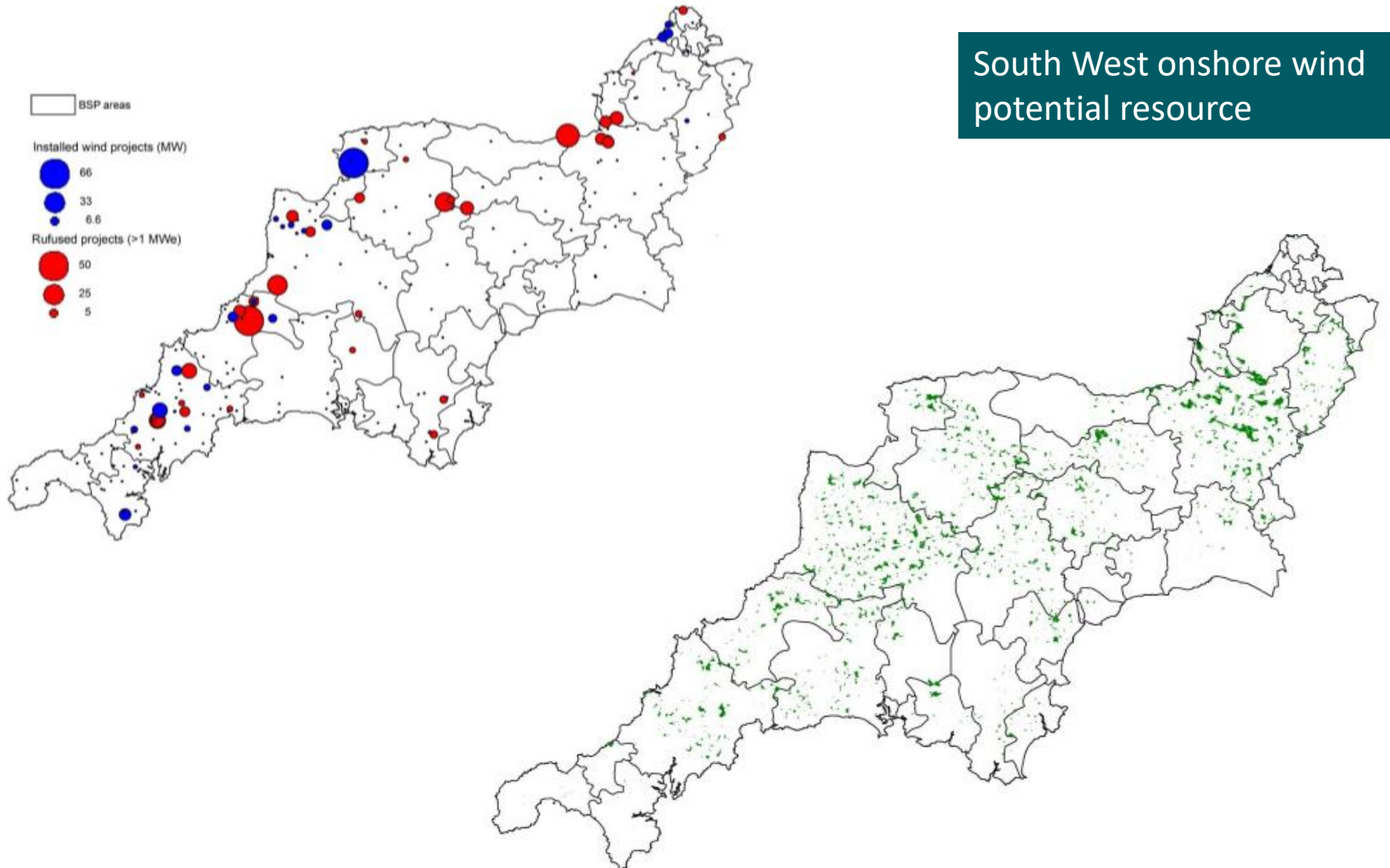
Correlation between the number of off gas houses and the thermal capacity of heat pumps



Rooftop domestic solar PV in each Index of Multiple Deprivation decile



Index of Multiple Deprivation (IMD) Decile (where 1 is most deprived 10% of LSOAs)



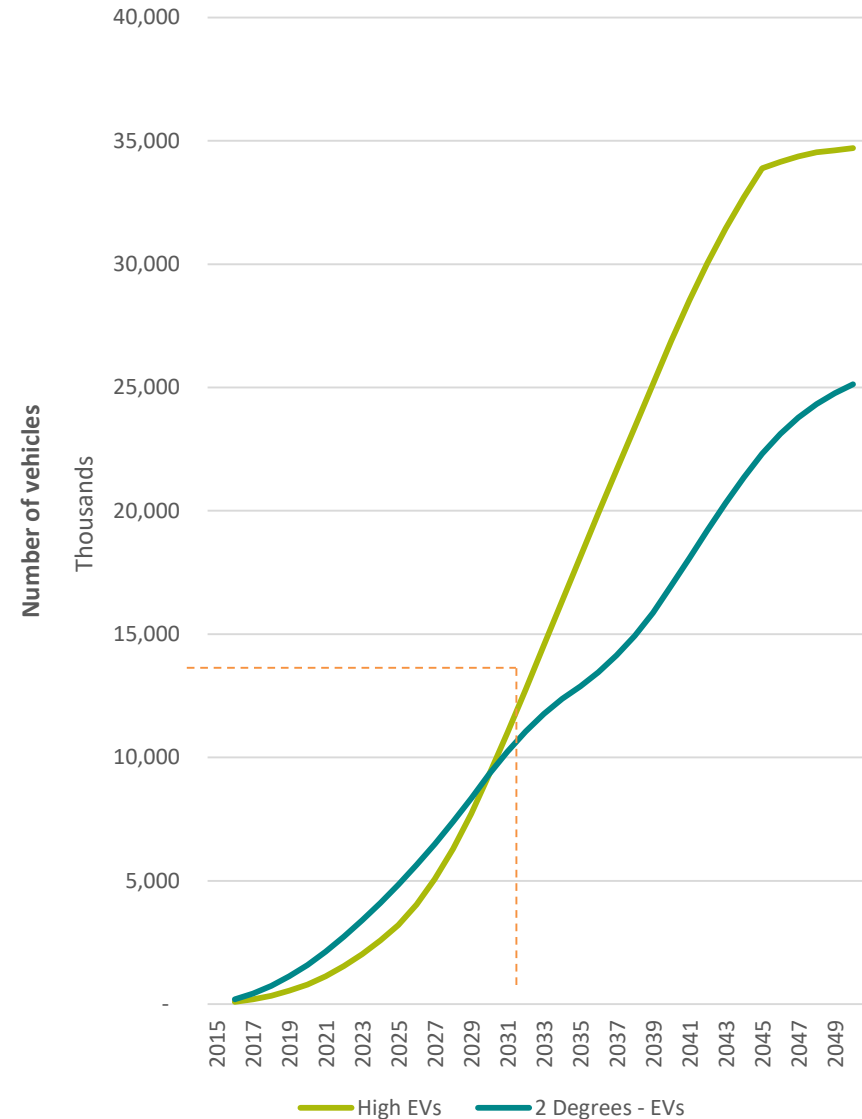
Some projections have high uncertainty. E.g. electric vehicle growth:

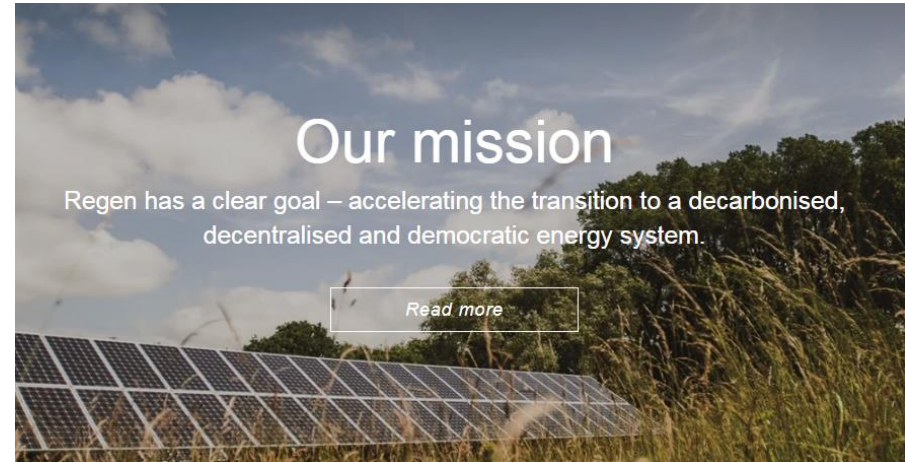
The National Grid FES growth rates by 2032 (GB):

- ‘Two degrees’ scenario: 15.2 million
- ‘High EVs’ scenario: 18.1 million

The Committee on Climate Change report to parliament, EV pathway:

- 16% market share by 2020 (PHEVs + ZEVs)
- 60% market share by 2030 (PHEVs + ZEVs)
- 100% market share by 2040 (ZEVs only)





Regen passionately believes that sustainable energy has a vital role at the heart of a successful economy and its thriving local communities.

We offer independent expert advice on all aspects of sustainable energy delivery. We use our technical, financial and policy knowledge to support a range of public and private sector organisations to make the most of their clean energy opportunities.



Future Electricity Demand in the South West licence area

Engagement workshop – 5 December 2017

South West licence area

Identifying new residential and non-residential developments

Methodology

Data sources – Local Plans

Cornwall Local Plan
Strategic Policies 2010 - 2030

Planning for Cornwall's future

Towl leel Kernow
Politicis Stratejiek 2010 - 2030

www.cornwall.gov.uk

CORE STRATEGY

Adopted February 2012

Teignbridge Local Plan 2013-2033

Adopted 6th May 2014

PLYMOUTH & SOUTH WEST DEVON JOINT LOCAL PLAN 2014-2034

SUBMISSION produced by West Devon Borough Council, South JULY 2017 Hams District Council and Plymouth City Council

TORBAY LOCAL PLAN
A landscape for success
The Plan for Torbay: 2012 to 2030

Local Plan Consultation

Proposed Submission Local Plan

Regulation 19 Consultation

Sedgemoor District Council - Strategy and Development
January 2017 - ldf@sedgemoor.gov.uk

Adopted West Somerset Local Plan to 2032

November 2016

East Devon Local Plan 2013 to 2031

Adopted – 28 January 2016

1

Refer to latest version of the local development plan

- Key documents – Core Strategy Paper, Policy maps

2

Identify latest supporting documents

- Local Plans often not the most up to date source
- Annual monitoring reports, SHLAAs, ELAs, Infrastructure Needs Assessment

3

Gather detail on strategic sites (housing, employment)

- Sites with significant growth potential, specific policy ref in the LDP
- Number of homes to be built
- Site area of non-residential property
- Any indication of phasing to be built over year

4

General allocation for housing and non-residential sites

- Housing trajectory for annual build out rates
- Additional developments to be built outside of strategic sites

5

Non-residential phasing and usage type

- Very limited information on annual build out rates and site areas
- Developments over 50,000m² split across plan period

6

Unallocated

- Figures for homes to be built across the LA that are yet to be allocated or windfall allowance – no specific site details

7

Assign to ESA

- Using policy maps or site development name

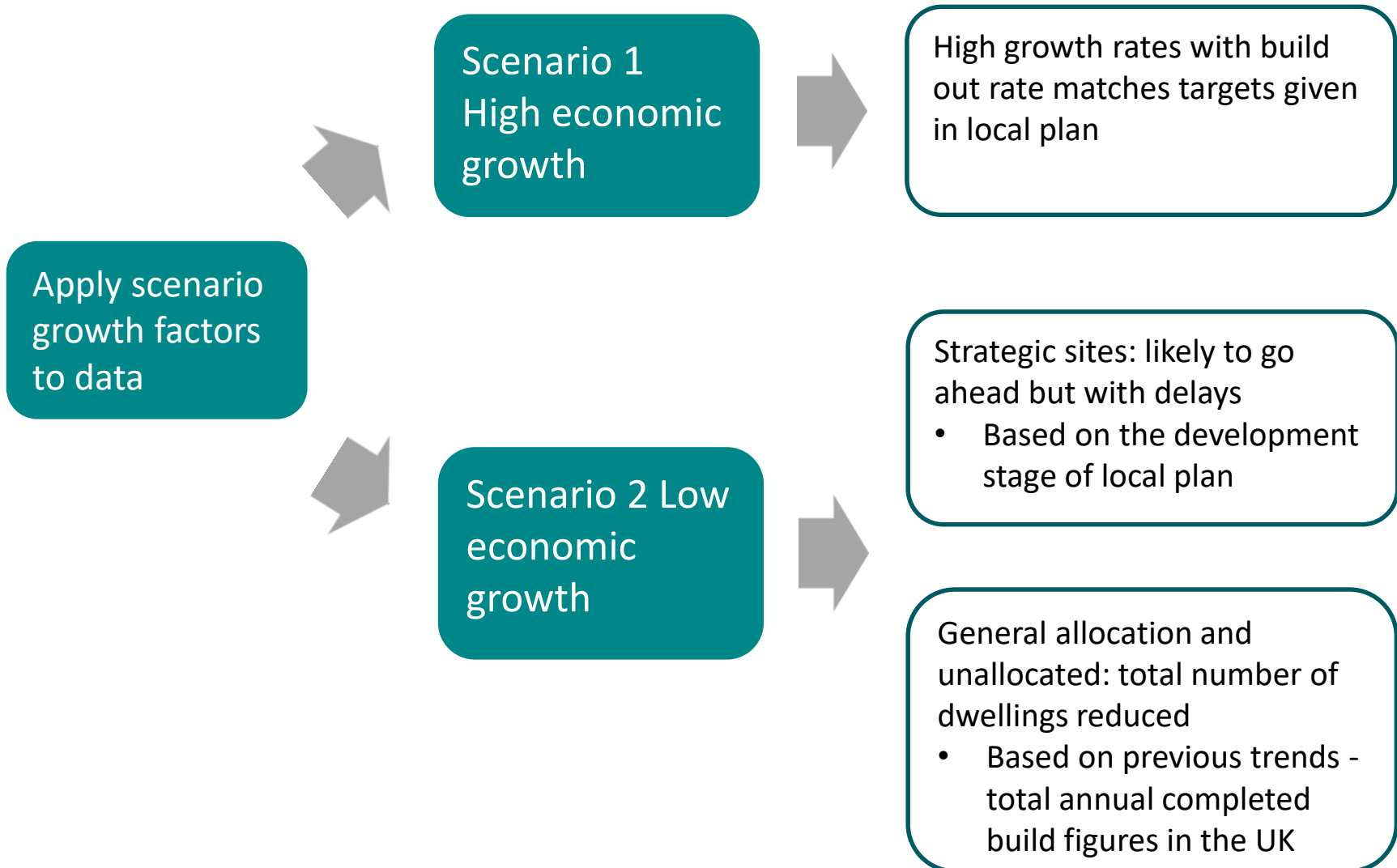
Review with Local Authorities

Data check:
contact all local
authorities in
licence area to
confirm figures



Predominantly
highlighted use of:

- Monitoring reports
- Site Allocations
Document
- GIS layers
- Provide detail on
the usage type split
of non-residential



													Scenario 1 - Higher economic scenario - Gone Green and Consumer Power																			
Development name	Develop ment area	Local authority	ESA	Allocation type	Number of homes in plan	Derelict area	Source	Stage of plan	Link to info	Start of plan	End of plan	Plan g	Published or adopted date	GGCP 2017/1	GGCP 2018/2	GGCP 2019/3	GGCP 2020/4	GGCP 2021/5	GGCP 2022/2	GGCP 2023/3	GGCP 2024/4	GGCP 2025/5	GGCP 2026/6	GGCP 2027/1	GGCP 2028/2	GGCP 2029/3	GGCP 2030/4	GGCP 2031/5	GGCP 2032/6	GGCP 2033/1		
														2017/1	2018/2	2019/3	2020/4	2021/5	2022/2	2023/3	2024/4	2025/5	2026/6	2027/1	2028/2	2029/3	2030/4	2031/5	2032/6	2033/1		
3	Alphington	Exeter	Exeter City Bsp	Strategic sit	124	Adoptec SHLAA/ In planning	https://	2006	2026	20	2015/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	Grecian Quarter	Exeter	Exeter City Bsp	General allo	62	Adoptec SHLAA/ In planning	https://	2006	2026	20	2015/16	0	0	12	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	Mokerton/Hill Barton	Exeter	Sowton Bsp	General allo	39	Adoptec SHLAA/ In planning	https://	2006	2026	20	2015/16	0	0	12	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Newcourt	Exeter	Sowton Bsp	Strategic sit	189	Adoptec SHLAA/ In planning	https://	2006	2026	20	2015/16	0	0	36	100	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	Small Site	Exeter	Sowton Bsp	Unallocated	18	Adoptec SHLAA/ In planning	https://	2006	2026	20	2015/16	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Grecian Quarter	Exeter	Exeter City Bsp	Strategic sit	251	Adoptec SHLAA/ Planning	https://	2006	2026	20	2015/16	174	36	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Mokerton/Hill Barton	Exeter	Sowton Bsp	Strategic sit	127	Adoptec SHLAA/ Planning	https://	2006	2026	20	2015/16	160	332	278	228	219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	Newcourt	Exeter	Sowton Bsp	Strategic sit	550	Adoptec SHLAA/ Planning	https://	2006	2026	20	2015/16	140	129	105	100	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Small Site	Exeter	Exeter City Bsp	Unallocated	1215	Adoptec SHLAA/ Planning	https://	2006	2026	20	Assume 2015/16	95	6	12.5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Small Site	Exeter	Sowton Bsp	Unallocated	1215	Adoptec SHLAA/ Planning	https://	2006	2026	20	Assume 2015/16	95	6	12.5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	Vater Lane	Exeter	Exeter City Bsp	General allo	27	Adoptec SHLAA/ Planning	https://	2006	2026	20	2015/16	13	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	Vindfalls	Exeter	Sowton Bsp	Unallocated	142.5	Adoptec SHLAA/ Annual mc	https://	2006	2026	20	Assume 2015/16	0	0	44.5	47.5	50.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	Vindfalls	Exeter	Exeter City Bsp	Unallocated	142.5	Adoptec SHLAA/ Annual mc	https://	2006	2026	20	Assume 2015/16	0	0	44.5	47.5	50.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	Remaining developments to be allocated	Exeter	Sowton Bsp	Unallocated	2008	Adoptec Local Plan	https://	2006	2026	20	need to t 2015/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	Remaining developments to be allocated	Exeter	Exeter City Bsp	Unallocated	2008	Adoptec Local Plan	https://	2006	2026	20	need to t 2015/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	Barnstaple	North D.	Barnstaple Bsp	Strategic sit	2390	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	244	439	425	391	239	172	228	195	195	195	175	92	0	0	0	0	0	0	0	0	
19	Barnstaple	North D.	Barnstaple Bsp	General allo	153	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	6	25	45	34	6	21	16	0	0	0	0	0	0	0	0	0	0	0	0	
20	Barnstaple	North D.	Barnstaple Bsp	Unallocated	475	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	153	50	88	60	89	20	0	0	15	0	0	0	0	0	0	0	0	0	0	0	
21	Bideford	Torridge	East Yelland Bsp	Strategic sit	2801	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	18	108	168	255	301	240	285	285	284	215	135	135	127	0	0	0	0	0	0	0	0
22	Bideford	Torridge	East Yelland Bsp	General allo	226	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	0	48	82	46	0	0	20	30	0	0	0	0	0	0	0	0	0	0	
23	Bideford	Torridge	East Yelland Bsp	Unallocated	332	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	99	56	31	21	57	48	20	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	Braunton and Vrafrton	North D.	East Yelland Bsp	Strategic sit	396	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	45	48	33	0	0	20	40	40	40	40	50	20	20	0	0	0	0	0	0	0	
25	Braunton and Vrafrton	North D.	East Yelland Bsp	Unallocated	77	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	8	13	14	7	12	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	
26	Fremington and Yelland	North D.	East Yelland Bsp	Strategic sit	357	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	80	27	0	30	30	40	40	40	30	30	10	0	0	0	0	0	0	0	0	0	
27	Fremington and Yelland	North D.	East Yelland Bsp	Unallocated	249	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	25	73	44	58	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	Great Torrington	Torridge	Barnstaple Bsp	Strategic sit	513	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	43	105	85	85	95	100	25	10	0	0	0	0	0	0	0	0	0	0	
29	Great Torrington	Torridge	Barnstaple Bsp	Unallocated	71	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	40	7	10	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Holsworthy	Torridge	Pwworthy Bsp	Strategic sit	396	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	23	37	75	60	80	76	30	0	0	15	0	0	0	0	0	0	0	0	0	0	
31	Holsworthy	Torridge	Pwworthy Bsp	General allo	66	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	32	21	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32	Ifracombe	North D.	East Yelland Bsp	Strategic sit	935	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	40	60	51	74	130	130	80	80	80	80	80	50	0	0	0	0	0	0	
33	Ifracombe	North D.	East Yelland Bsp	General allo	71	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	11	6	0	7	15	7	12	13	0	0	0	0	0	0	0	0	0	0	0	
34	Ifracombe	North D.	East Yelland Bsp	Unallocated	211	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	36	25	45	57	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	Northam	Torridge	East Yelland Bsp	Strategic sit	1697	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	38	163	302	324	305	251	160	44	40	40	30	0	0	0	0	0	0	0	0	0	
36	Northam	Torridge	East Yelland Bsp	General allo	92	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	0	0	0	35	6	20	31	0	0	0	0	0	0	0	0	0	0	0	
37	Northam	Torridge	East Yelland Bsp	Unallocated	144	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	41	26	45	4	6	10	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	South Molton	North D.	Barnstaple Bsp	Strategic sit	946	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	55	55	75	90	100	125	112	100	64	45	45	40	40	0	0	0	0	0	0	0	
39	South Molton	North D.	Barnstaple Bsp	General allo	51	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	5	9	0	0	14	0	8	9	6	0	0	0	0	0	0	0	0	0	0	
40	South Molton	North D.	Barnstaple Bsp	Unallocated	142	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	39	54	31	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	Bradworthy	Torridge	Pwworthy Bsp	Strategic sit	32	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	7	10	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
42	Bradworthy	Torridge	Pwworthy Bsp	General allo	28	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	0	0	0	0	10	18	0	0	0	0	0	0	0	0	0	0	0	0	
43	Bradworthy	Torridge	Pwworthy Bsp	Unallocated	19	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	7	2	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44	Bratton Fleming	North D.	Barnstaple Bsp	Strategic sit	25	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	0	0	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45	Bratton Fleming	North D.	Barnstaple Bsp	Unallocated	17	Publishe Local Plan	htp://co	2011	2031	20	01/07/2017	3	0	1	4	9</																

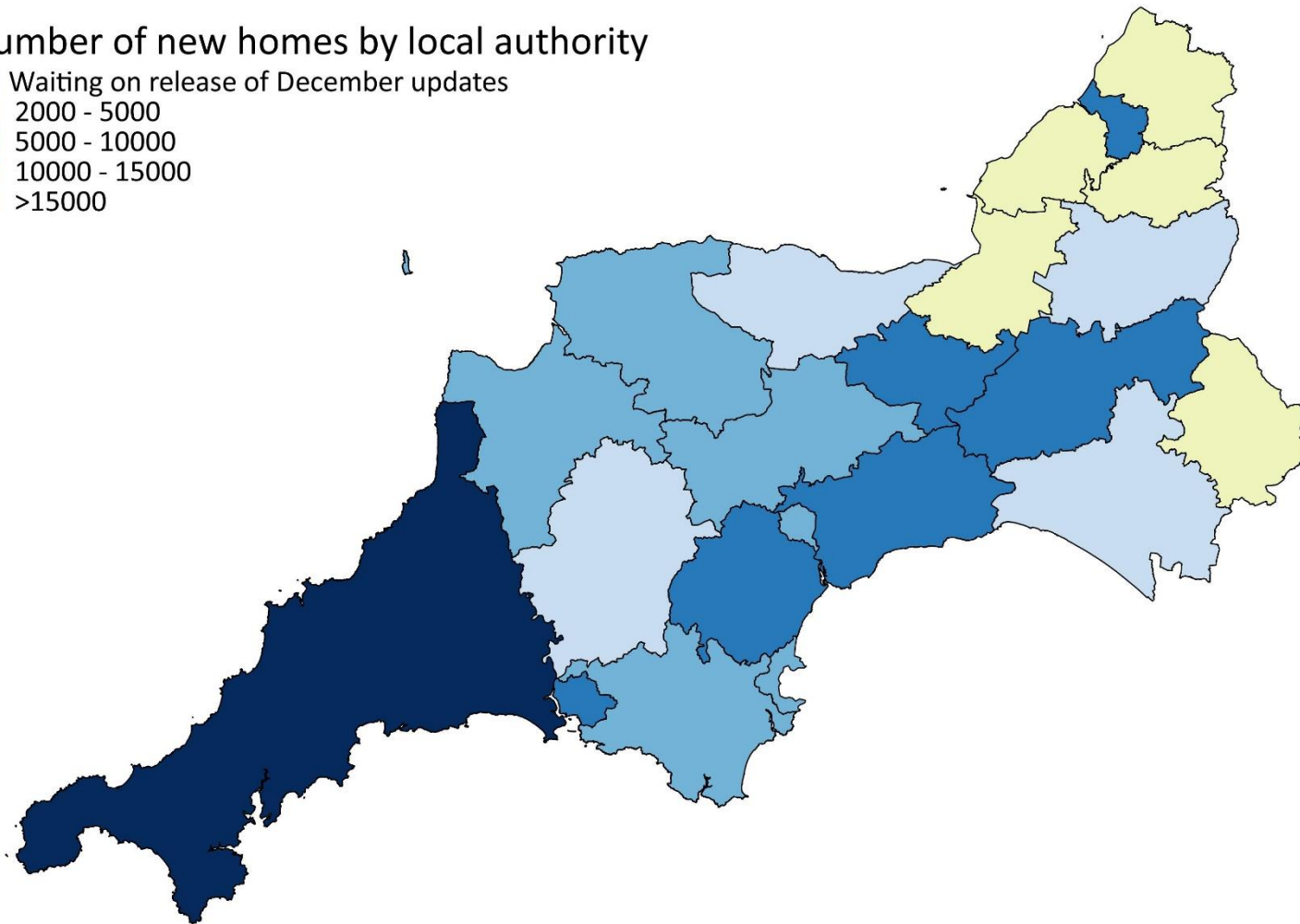
New housing and non-residential developments: Initial results

Local authority		Total number of homes (up to 2032) Higher economic scenario
1	Cornwall	39,229
2	Plymouth	14,805
3	East Devon	13,368
4	Taunton Deane	12,791
5	South Somerset	11,936
6	Teignbridge	11,805
7	City of Bristol	11,112
8	Torbay	8,900
9	North Devon	8,743
10	Mid Devon	8,178
11	Torrige	8,015
12	Exeter	7,022
13	South Hams	5,027
14	Mendip	2,926
15	West Devon	2,491
16	West Somerset	2,434
17	West Dorset	2,140

Scenario 1: High economic scenario

Number of new homes by local authority

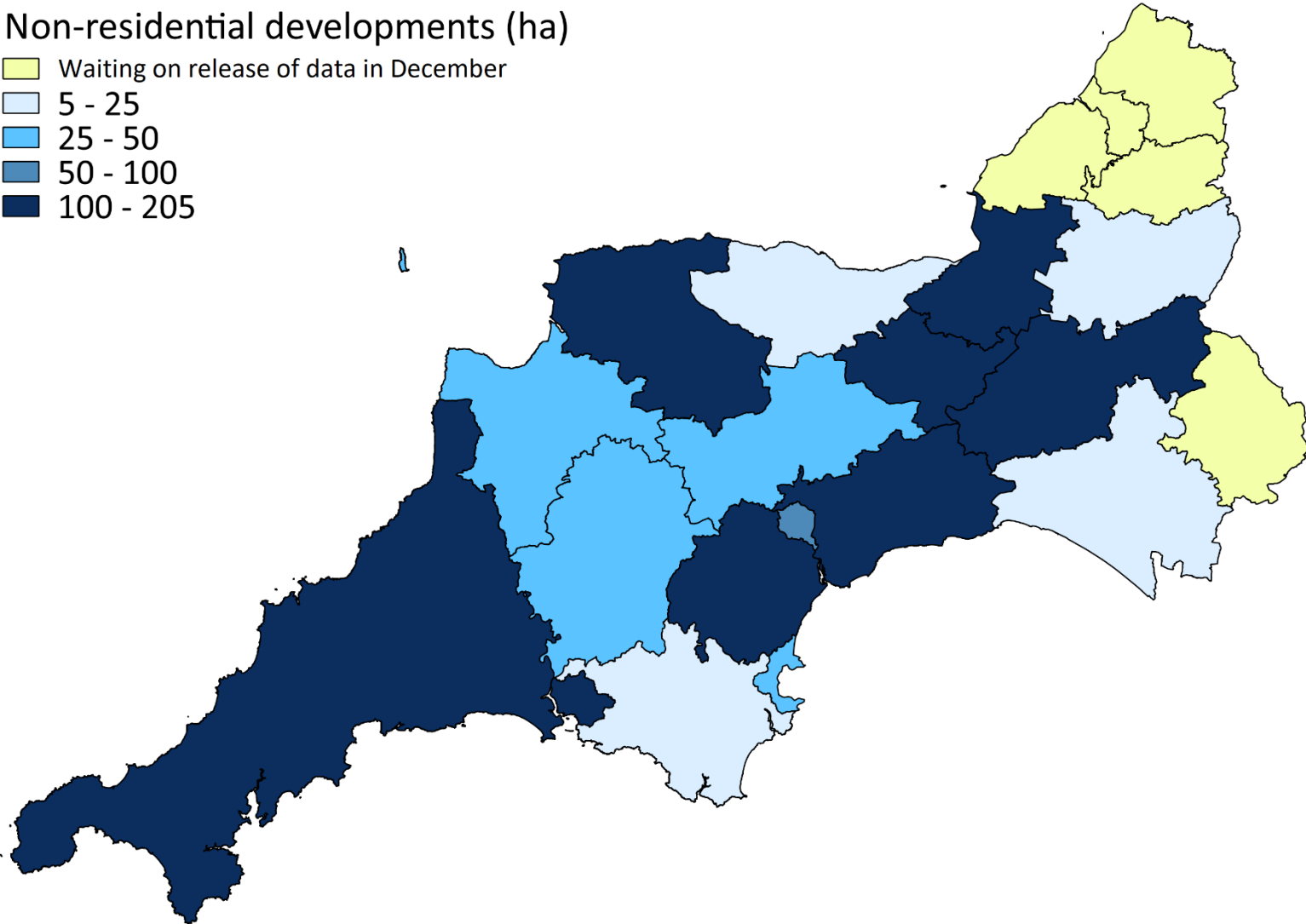
- Waiting on release of December updates
- 2000 - 5000
- 5000 - 10000
- 10000 - 15000
- >15000



Local authority		Total non-residential (up to 2032)
		Higher economic scenario
1	Cornwall	205
2	Teignbridge	169
3	City of Plymouth	168
4	Taunton Deane	158
5	East Devon	155
6	South Somerset	142
7	Sedgemoor	128
8	North Devon	105
9	Exeter	53
10	Torbay	43
11	Mid Devon	41
12	Torridge	41
13	West Devon	32
14	South Hams	21
15	Mendip	10
16	West Dorset	10
17	West Somerset	9

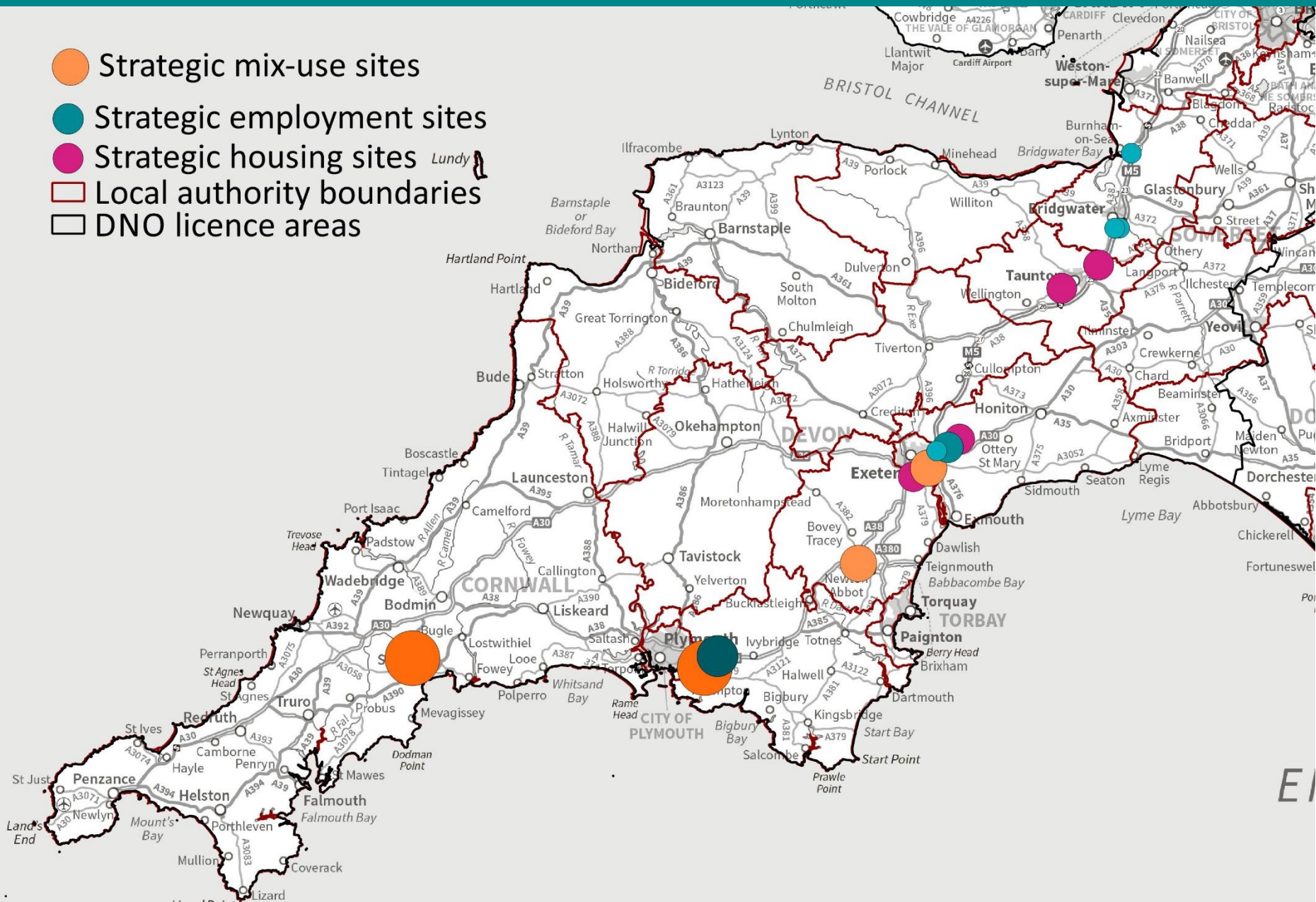
Non-residential developments (ha)

- Waiting on release of data in December
- 5 - 25
- 25 - 50
- 50 - 100
- 100 - 205



Non-residential developments: largest sites

- Strategic mix-use sites
- Strategic employment sites
- Strategic housing sites
- ▭ Local authority boundaries
- ▭ DNO licence areas



- Complete initial data collection from December releases
- Check data with each local authority - unable to include new data after 31st December
- Apply low economic scenario reductions to current figures.

Questions

- Any information to add?
- Any questions/comments on the approach and outcomes?



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Serving the Midlands, South West and Wales

Strategic Investment Options for the South West

5th December 2017

WPD Online Capacity Tool

File Edit View Favorites Tools Help

We are aware that not all data is currently displayed on the map and we are working to resolve the issue.

Distribution Generation owner/operator forum

Generation Infrastructure Schemes

Community Energy Schemes

Facilitating sharing of information for potential generation connections consortiums

Trial

Service alterations

Information for electrical installers

Useful information

Contact us

Postcode search [?](#) Capacity search [?](#) Capacity mode [?](#)

MVA Generation Demand Both

Substation/Supply type [?](#) Connection Potential Filter [?](#)

Grid Bulk Primary High Medium Low

Map data ©2017 GeoBasis-DE/BKG (©2009), Google [Terms of Use](#) [Report a map error](#)

DSOF and NIA information day



Western Power Distribution's
**Distribution System
Operability Framework**

September 2017

**WESTERN POWER
DISTRIBUTION**
Serving the Midlands, South West and Wales

- WPD's DSOF identifies 9 prominent network issues which need consideration as our system becomes more active.
- Themed around Customers, Network Operations and Assets.
- We are seeking third party NIA innovation projects which could solve or alleviate these network issues through non-traditional means.
- A DSOF & NIA information day will be held in Birmingham on **25th January 2018** and project proposal forms will be downloadable from our website in the new year.

**WESTERN POWER
DISTRIBUTION**
Serving the Midlands, South West and Wales

Timetable for Strategic Study

- Stakeholder workshop to get stakeholder input to approach and scenarios to be considered – December 2017
- Undertake network studies and identify solutions with costs - 2018 Q1
- Sensitivity work – i.e. how much ‘headroom’ do the potential solutions give – 2018 Q2
- Assess potential for demand response/generation constraint – 2018 Q2
- Complete report – June 2018
- Dissemination event or webinar – July 2018

Timetable for Strategic Studies

Q3&4 2017

- West Midlands

Q1&2 2018

- South West

Q3&4 2018

- South Wales

Q1&2 2019

- East Midlands

We welcome further collaboration:
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