

# Planning for windfarms

## Scottish experiences – take 2!



Reykjavik, 9 January 2019: Graham Marchbank, Town Planner

# Today's presentation

- A bit of context
- Development planning
- National agency advice and support – SNH, SEPA, HES
- Environmental assessment, decision-making, monitoring, restoration
- Research into impacts
- People and community
- Repowering and future prospects
- Ideas for Iceland



# Energy and environment context

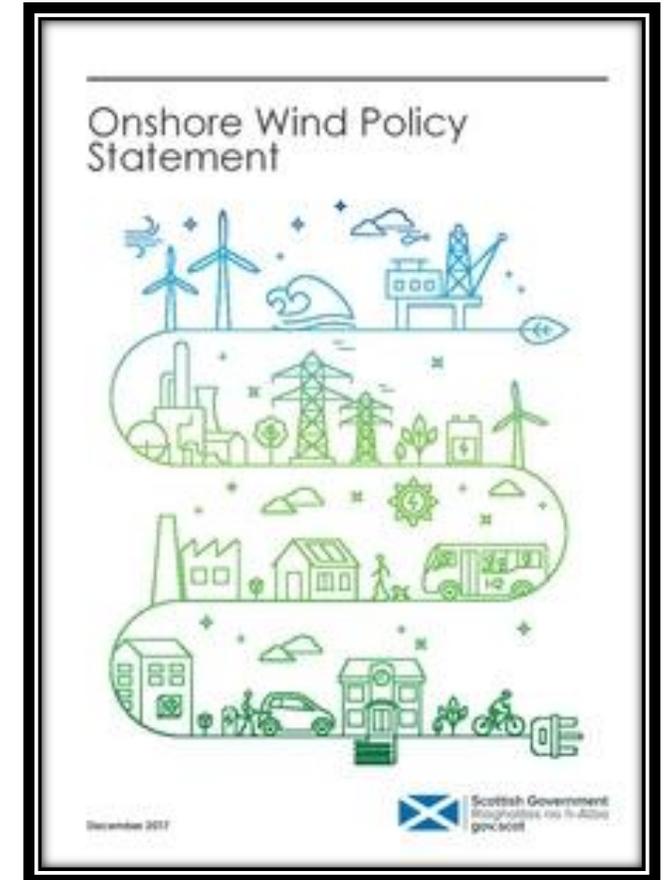
- UK government controls energy policy
- Environment policy devolved to Scottish Government
- Scotland hosts 56% of UK's onshore wind
- Likely to deliver 86% of new UK capacity 2019-2025
- UK Committee on Climate Change advises government on low carbon, tackling slow progress on transport and agriculture emissions and concerned about future support for onshore wind, currently the cheapest form of electricity generation

# Scotland's Climate Change Plan 2018-2032

- Implements 2009 Climate Change Act
- Introduces forthcoming Climate Change Bill
- Scotland's electricity system, already largely decarbonised
- 54% gross electricity consumption from renewables in 2016, compared to 12.2% in 2000. Right now it's 70%
- targets are:
  - 100% of electricity demand from renewables by 2020
  - 50% of all energy for heat, transport and electricity consumption from renewables by 2030

# Scottish Government Onshore Wind Policy statement

- Provides Energy Strategy context for decisions >50MW
- Route to market
- Repowering
- Strategic approach to development
- Barriers to deployment
- Protection for residents and the environment
- Community benefits
- Shared ownership

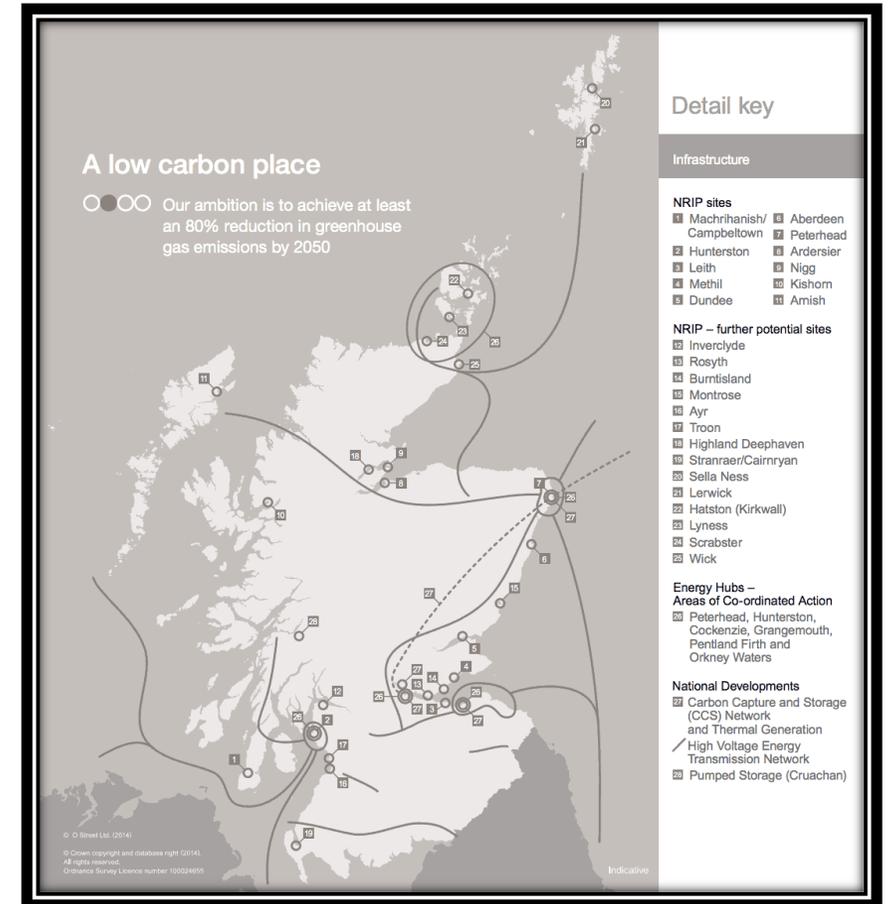


# Planning: Scotland v England differences

- Scottish and English planning systems are independent
- In both countries wind farms >50MW are decided by central government
- In England, councils can only approve windfarms on sites that have been clearly designated as part of a local or neighbourhood plan, and where the proposed project has the backing of the local community
- In Scotland the system is more strategic (wind energy spatial frameworks) – more open to the opportunity and deciding applications on their merits
- Even so, wind farms have critics in the media and in campaigns

# Third National Planning Framework 2014

- Onshore wind will continue to make a significant contribution to diversification of energy supplies
- Scottish Planning Policy sets out the required approach to **spatial frameworks** which will guide new wind energy development to appropriate locations, taking into account important features



# Scottish Planning Policy 2014 – Spatial Frameworks - a planned approach to wind farms

1. Not acceptable in National Parks or National Scenic Areas
  
2. May be appropriate in Areas of significant protection: national and international designations, important mapped environmental interests, community separation
  
3. Areas with potential

**Table 1: Spatial Frameworks**

**Group 1: Areas where wind farms will not be acceptable:**

National Parks and National Scenic Areas.

**Group 2: Areas of significant protection:**

Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.

**National and international designations:**

- World Heritage Sites;
- Natura 2000 and Ramsar sites;
- Sites of Special Scientific Interest;
- National Nature Reserves;
- Sites identified in the Inventory of Gardens and Designed Landscapes;
- Sites identified in the Inventory of Historic Battlefields.

**Other nationally important mapped environmental interests:**

- areas of wild land as shown on the 2014 SNH map of wild land areas;
- carbon rich soils, deep peat and priority peatland habitat.

**Community separation for consideration of visual impact:**

- an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.

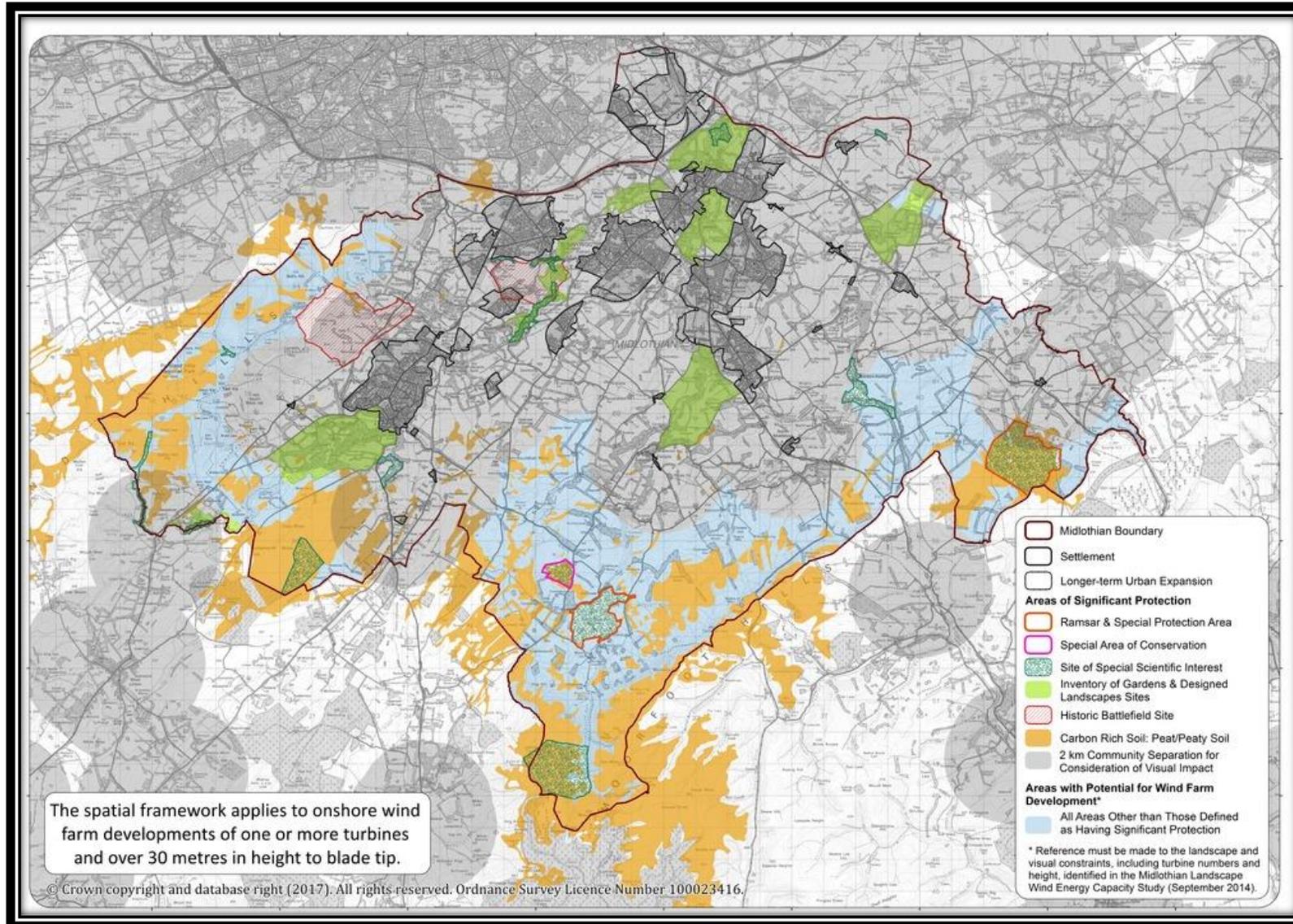
**Group 3: Areas with potential for wind farm development:**

Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.

# What is a Spatial Framework?

- Guides developers and communities and is consistent across Scotland
- Indicates minimum scale of development that the framework is intended to apply to
- Map-based expression of Scottish Planning Policy Table 1
- Grid capacity and landscape capacity not to be used as constraints

# Midlothian Council's Spatial Framework



# Regional planning: strategic development plans (SDPs)

- Cover Aberdeen, Dundee, Edinburgh and Glasgow city regions
- '*concise and visionary*' spatial strategies across planning authority boundaries
- Scot Gov proposes to scrap SDPs. But a Parliamentary committee is keen to keep them. Where to express strategic spatial strategy?
- In Iceland would strategy be at national level?
- For wind energy, SDPs can map capacity and risks of cumulative impacts. But this could also be achieved by authorities co-operating
- Best not to set regional targets for green energy as this will be overtaken by technology improvements and unexpected opportunities. England tried and failed with abandoned Regional Spatial Strategies

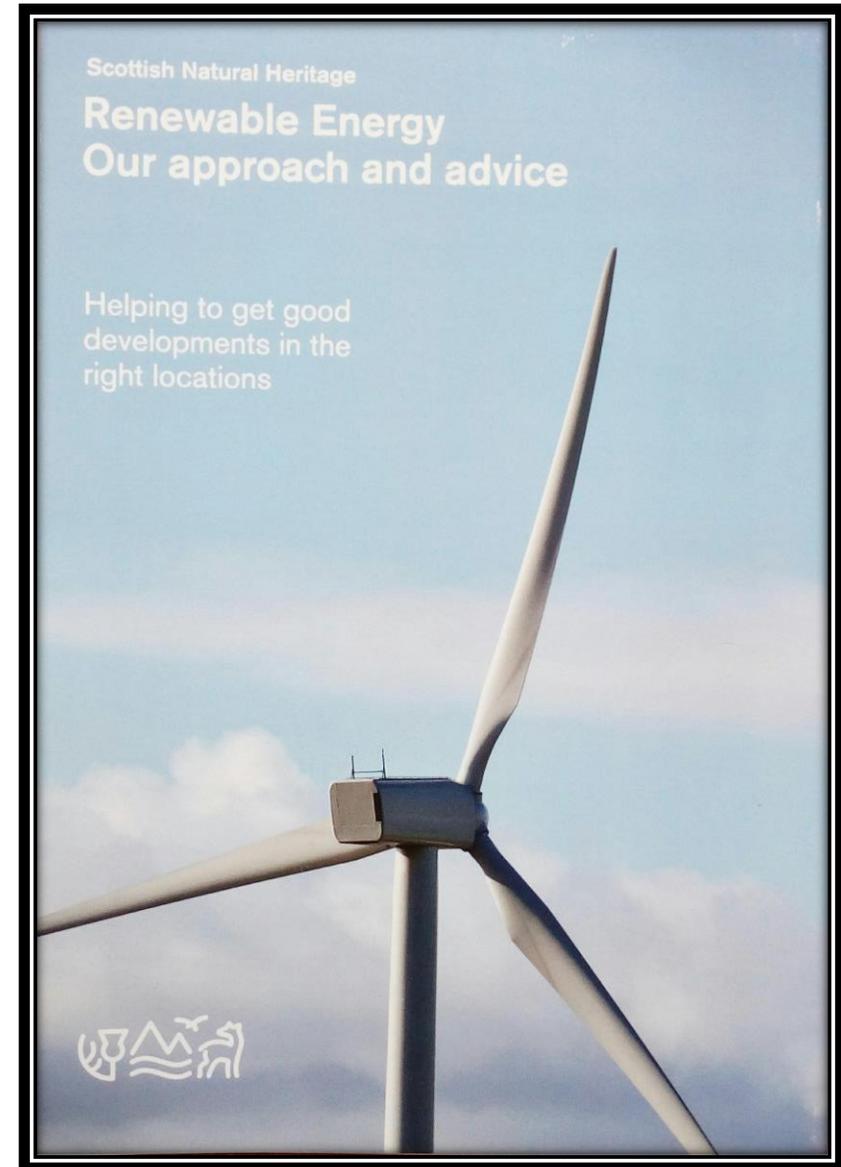
# National agencies

- Scottish Natural Heritage (SNH)
- Scottish Environment Protection Agency (SEPA)
- Historic Environment Scotland (HES)
- Agencies provide statutory advice on development plans and most wind farm proposals
- Publish specialist advice on renewable energy
- Specific guidance on windfarms

# SNH

[www.nature.scot](http://www.nature.scot)

- Siting and design
- Landscape and visual impact
- Good practice during construction
- Impact on birds, bats, river flows

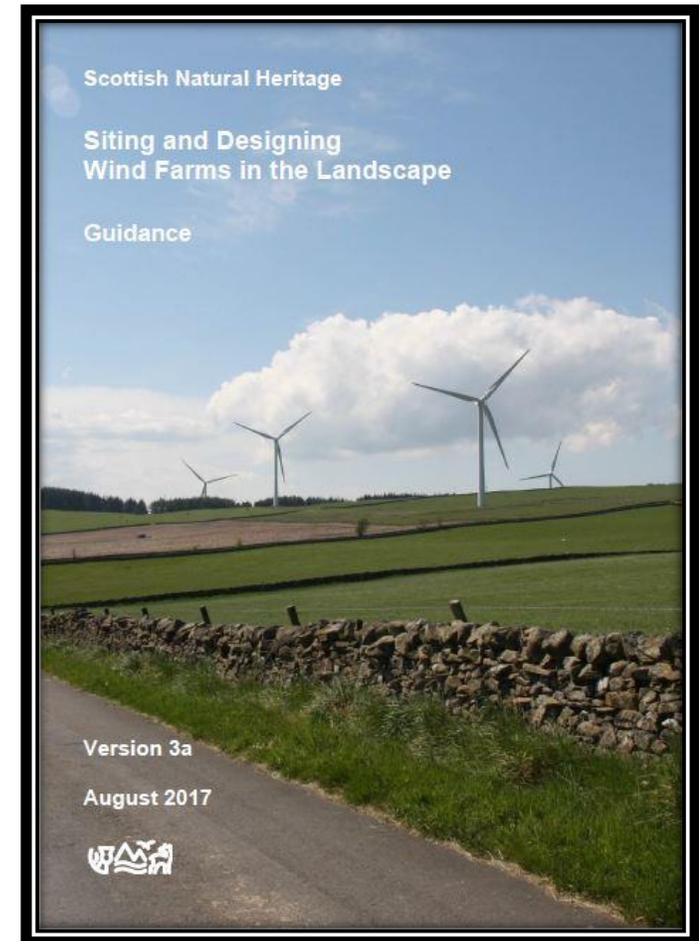


# SNH – Siting and Designing

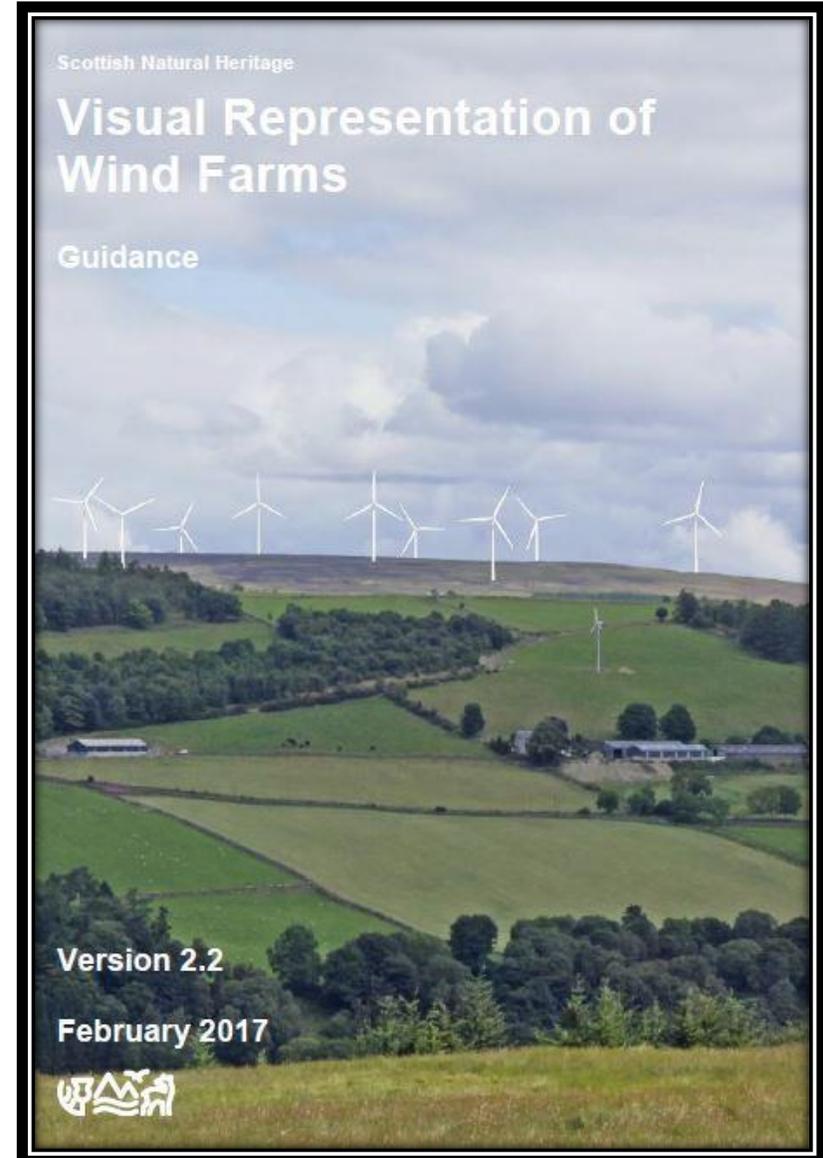
Landscape character and scale. Avoiding ridges. Using landform, trees and buildings as context. Advice on clustering and extensions.

## Wind Turbine Landscape Typologies

1. Landscape With No Wind Turbines
2. Landscape With Occasional Wind Turbines
3. Landscape With Wind Turbines
4. Wind Turbine Landscape
5. Windfarm

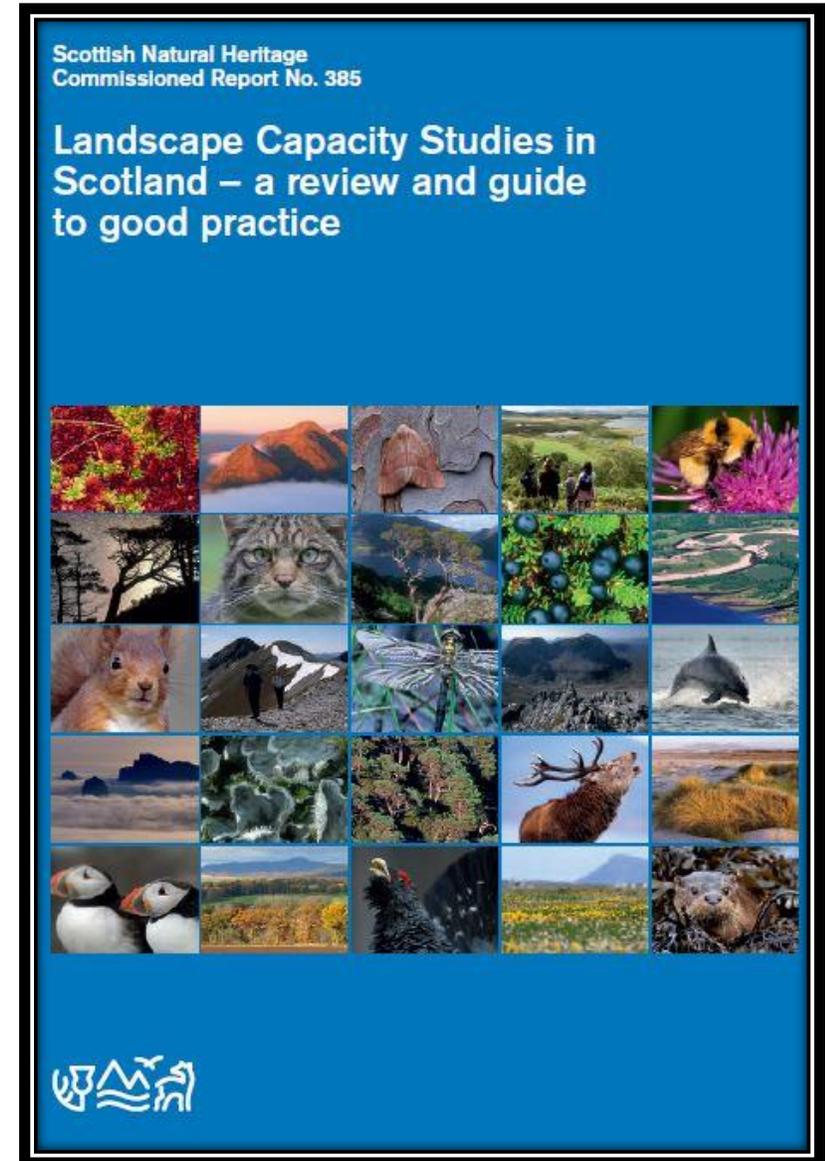


# SNH – Visual Representation



# Landscape capacity studies

- Landscape capacity is not part of a spatial framework
- Capacity study begins with a landscape character assessment
- Can help to identify strategic capacity
- Consider cumulative impact
- Identify acceptable levels of cumulative change



# Historic Environment Scotland

[www.historicenvironment.scot](http://www.historicenvironment.scot)

Offer advice on

- category A listed buildings and their setting
- scheduled monuments and their setting
- Inventory battlefields
- Inventory gardens and designed landscapes
- World Heritage Sites
- Historic Marine Protected Areas

# Environmental Impact Assessment (EIA)

- Regulations apply to development decided under planning legislation (<50MW) and, separately...
- Development (>50MW) decided under the Electricity Act 1989
- Under planning: any installation of 2 or more turbines or the hub height or height of any structure exceeds 15 metres
- Under Electricity Act 1989: any generating station
- **Characteristics, location and impact of development have to be assessed**

# Decision-making on wind farms <50MW

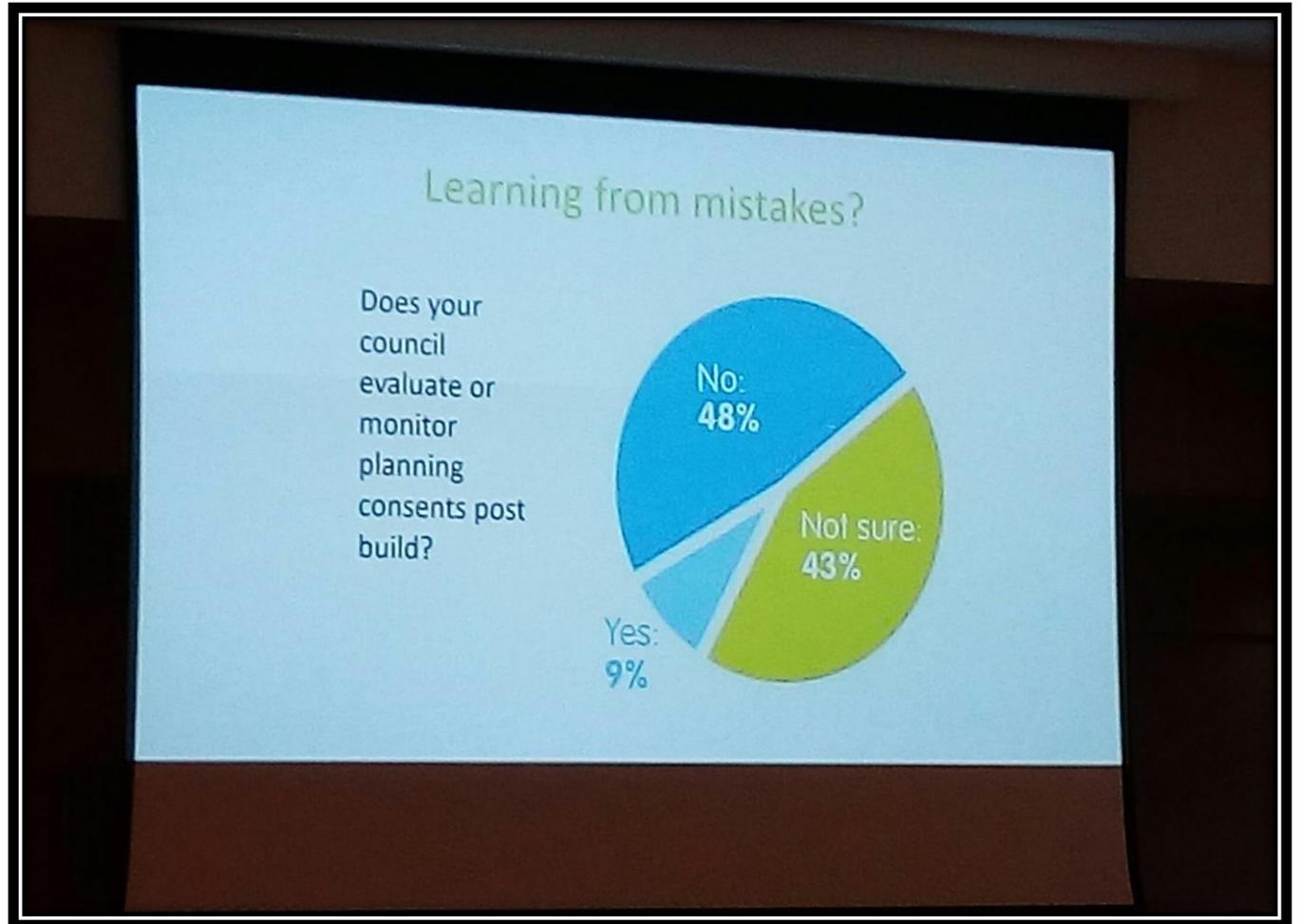
- 32 planning authorities and 2 National Parks decide applications <50MW under planning powers
- >20MW requires 12 week pre-application consultation
- Decisions are taken in accordance with development plans and other “material” considerations, including public representations
- If refused, the developer can appeal and there is normally a public inquiry
- A Reporter (civil servant) or the Minister will then make a decision
- Application fee is capped at £125,000 (ISK 1.9m) depending on the area of the site. Fees help cost-recovery of processing the application

# Decision-making on wind farms >50MW

- Scottish Government Energy Consents Unit and the Minister decide applications >50MW under the Electricity Act 1989...after consulting the relevant planning authority for an opinion
- The planning authority receives part of the fee
- If the planning authority objects to the wind farm, there is normally a public inquiry
- The Minister issues a decision letter and if approved also grants “deemed” planning permission under the 1989 Act
- The planning authority takes responsibility for any planning conditions
- Fees could rise to £125k for a 50-100MW windfarm or £190k (ISK2.9m) if EIA required. Max would be £540,000 for EIA proposal > 500MW

# Post-consent monitoring

- There is an allowance for micro-siting each turbine base
- Was the wind farm built according to the drawings?
- Hilltracks impact
- Difficult to reach
- Costly to monitor



# Post-consent monitoring

- 25 year life for wind farm
- Restoration bonds a requirement of the permit
- Usually an insurance policy or cash account
- Valued to reflect the phase and risk of the development
- Ability to use the insurance if things go wrong
- Covers costs of equipment removal and restoration in the event of the owner or operator failing to clean up

# Cluster rather than scatter small scale turbines

- Landowners and farmers approached by investors to erect small wind turbines was a “goldrush” caused by incentive called the Feed-In Tariff
- Scattering causes potential or real landscape harm and visual intrusion
- A planned approach could have asked owners to club together and cluster turbines or share a larger turbine
- Many scattered small scale turbines can frustrate other development
- Planning policy should anticipate this possibility while supporting opportunities
- Consider whether community benefit is a planning (locational) consideration, not a bribe
- Community benefit does not make a bad development good

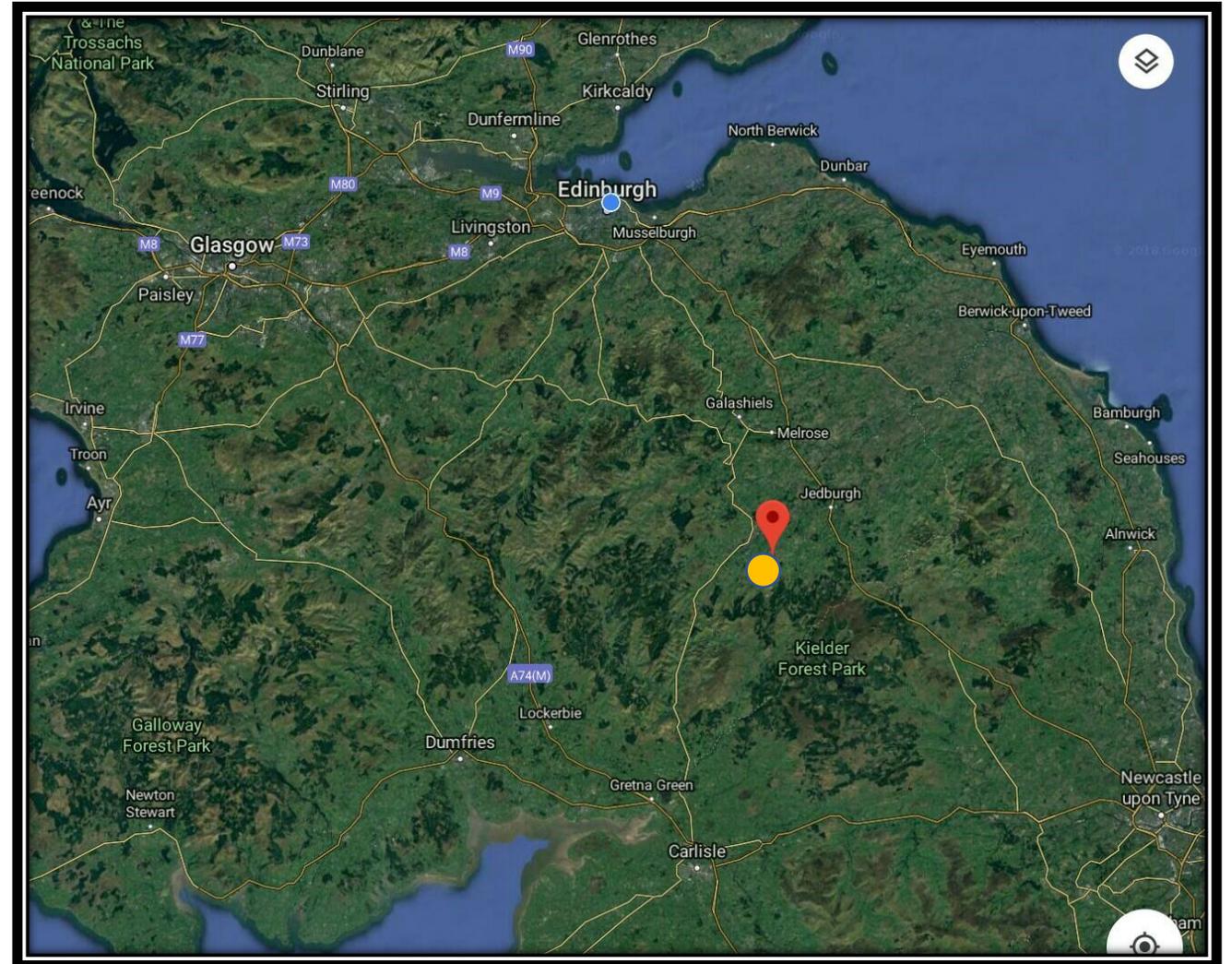
# Pines Burn and Birnieknowe, Scottish Borders

- **Pines Burn**

12 turbines, about 36MW  
Localised limited landscape,  
visual and cumulative  
impacts  
Approved August 2018

- **Birnieknowe**

15 turbines, about 51MW  
Adverse landscape and  
visual effects  
Refused December 2018

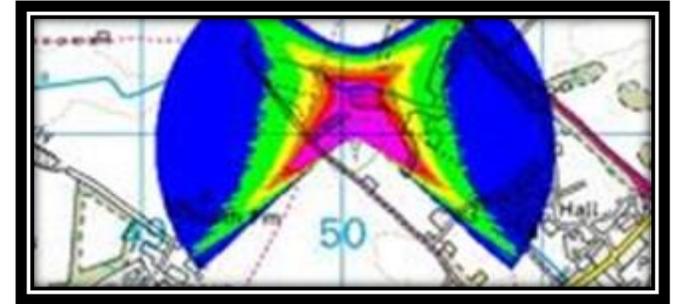


# Research

- ClimateXChange is a major independent research provider to Scottish Government
- The ClimateXChange Wind Farm Impacts Study, published in July 2015, made a number of recommendations for developing better guidance on predicting and limiting the impact of wind farm developments
- Additional research conducted
- [www.climatexchange.org.uk](http://www.climatexchange.org.uk)

# Predicted versus documented visual, shadow flicker and noise impacts

- Study of 10 windfarms
- Most assessments presented at planning stage mainly followed guidance
- In some: guidelines were not followed and/or the predicted impacts by developers were not consistent with impacts assessed in this study or as reported by some local residents
- Assessments and public engagement had not always adequately prepared residents for visual, shadow and noise impacts of the operational wind farm



# Light and shadow flicker

- There needs to be consistency between guidance documents and planning policy on the definition of shadow flicker
- A definition of the outdoor effects of light and shadow related effects should be included for clarity
- 10 rotor diameters normally enough separation



# Noise

- Study on assessment practices for noise impacts from renewable technologies
- Found good practice although standard guidance on wind farm noise called 'ETSU-R-97' has its critics
- Institute of Acoustics Good Practice Guidance on use of ETSU-R-97
- Protection provided for sensitive receptors ... usually houses
- Planning conditions based on tolerable thresholds
- Outdoor, indoor, daytime and night-time limits



# Impact on property values

- Research findings do not point to a consistent pattern of impact
- In particular, there are no consistent negative effects on house price growth from being situated near to a wind farm

# Economic impact on tourism

- 2008 research found that negative impact of wind farms on tourism at national level is small (2012 update little change)

But if impact is a worry a study could include the

- number of tourists travelling past en-route to elsewhere
- views from accommodation in the area
- relative scale of tourism impact i.e. local and national
- potential positives associated with the development
- views of tourist bodies

# Putting people at the centre of the debate

- Planning in Scotland undergoing reforms
- New Act expected 2019
- Strategy, infrastructure, community, resources
- More focus on community participation, local place plans and locality planning
- Tools to assist participation in conversations: Place Standard, Climate Conversations, Adaptation Scotland, ClimateXchange
- [www.rtpiscotlandblog/2017/03/08/creating-climate-ready-places/](http://www.rtpiscotlandblog/2017/03/08/creating-climate-ready-places/)

# Public participation

## National Standards

- Public sector and representatives
- Third sector and community groups
- Private and independent sector

## Engagement

- has to be effective, well planned and fair
- provides for shared decisions, shared action and support for community-led action



# Community Empowerment and Landscape

- Communities feel “locked out” by Scottish landscape policy, according to this research
- 432 private landowners own 50% of rural Scotland
- **Recommends aligning landscape, historic environment and natural heritage policies with sustainable development and human rights**
- Renewables offer economic opportunity?
- Like broadband, could clean cheap energy stem out-migration?



# Orkney

- Fair Isle #SGEA18
- Combines wind, solar and storage
- 24/7 power for the island for first time
- Benefits remote communities with insecure energy supply



# Who owns the land? Community land ownership

- Scottish Land Fund
- Community Land Scotland
- November 2018 - Orkney islanders given £260,000 for estate purchase
- money will allow residents on Rousay to develop visitor facilities on the Trumland estate and secure the site for a community-owned wind turbine



# Community benefit, shared and local ownership

- Community benefit: income for communities located near windfarms
- By 2017 £12m (ISK 1.8b) had been paid out in just 1 year
- **Local Energy Scotland** runs the Scottish Government scheme
- 1GW target of locally run energy by 2020
- **Community Energy Scotland** – a charity that helps communities develop green energy ideas



# Repowering

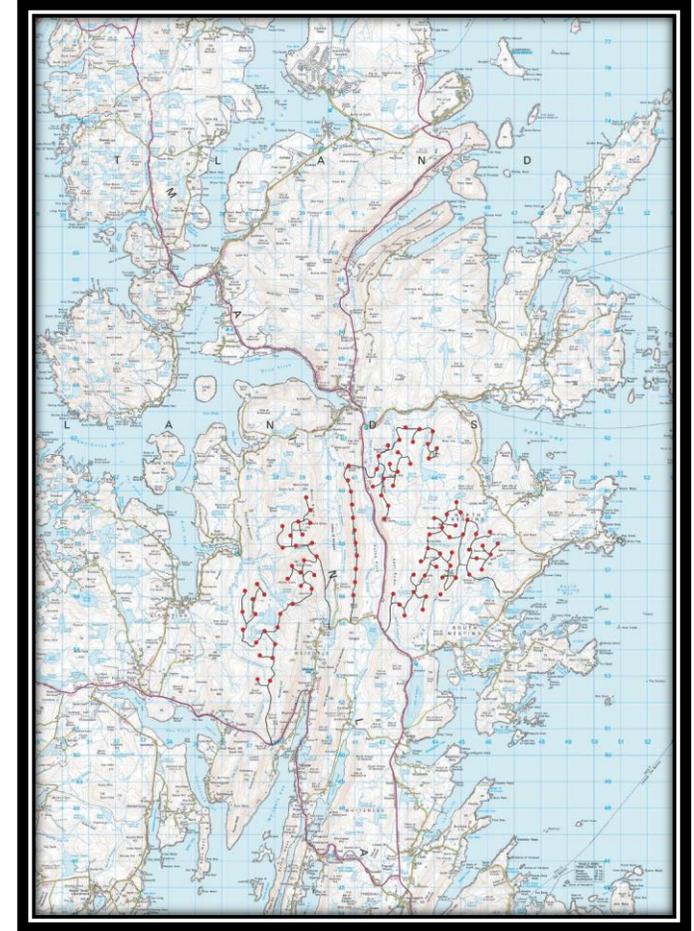
- Life extensions typically after 25 years (when the insurance expires)
- Refit same size turbines on same foundations
- Upscale the size of the turbines (increased height to turbine tip and increased rotor diameter)
- Reduce the number of turbines on same site for the same power
- 5MW -7MW turbines are reaching 225m. to tip
- June 2018 SNH guidance - Assessing the impact of repowered wind farms on nature – not yet published. One to watch.

# Repowering and new generation windfarms

- Onshore wind subsidies largely removed in 2017 across the UK
- This means new proposals will now normally be for very large turbines to maximise the return on investment
- It means turbine blades will sweep a larger diameter and tip height may > 200m.
- Repowering applications will often need revised EIAs

# Shetland

- Viking wind farm – consented in 2012
- Challenged by anti-windfarm campaigners in court but failed
- Still not built
- 50% community-owned ... Around 200MW ... Largest in UK
- Variation of consent seeks to increase max tip height of 103 turbines, from 145 metres (m) to a max of 155 m
- Increase max rotor diameter from 110 m to a max of 120 m
- Still to be decided by Scottish Government (as at Jan 2019)
- You can permit development but it may be modified or not even be built!



# Wind to hydrogen

- Excess wind energy electricity fuels an electrolyzer to produce hydrogen from water
- Battery storage for heat
- Fuel cells for ferries?



- Potential trials for electric flight on 2 minute hop in Orkney

# Ideas for Iceland #1. Consultation works

- Develop a **draft** spatial policy that meets national, regional and local priorities
- Align that with energy and environment policy
- Show that wide opinion has been taken into account
- Consult on the policy imaginatively – on paper, in presentations and in exhibitions, on-line and face-to-face
- Plan **with** your communities rather than top-down

## Ideas for Iceland #2. Plan-led is best!

- A plan-led approach can avoid disagreements later in the process because it provides a context for individual decisions
- Participation in development plans is beneficial
- Need to reach seldom heard groups and minorities or communities of interest ... social inclusion
- **Political plan-ownership crucial to provide certainty to developers and confidence to residents**

# Ideas for Iceland #3. Wind farm decisions

- Keep it simple
- Provide training, with the right staff
- Use the evidence to support recommendations
- Only apply planning conditions that are necessary, relevant, precise, enforceable and reasonable
- Avoid going to court!