

Renewable Energy Local Projects for a Net Zero Future

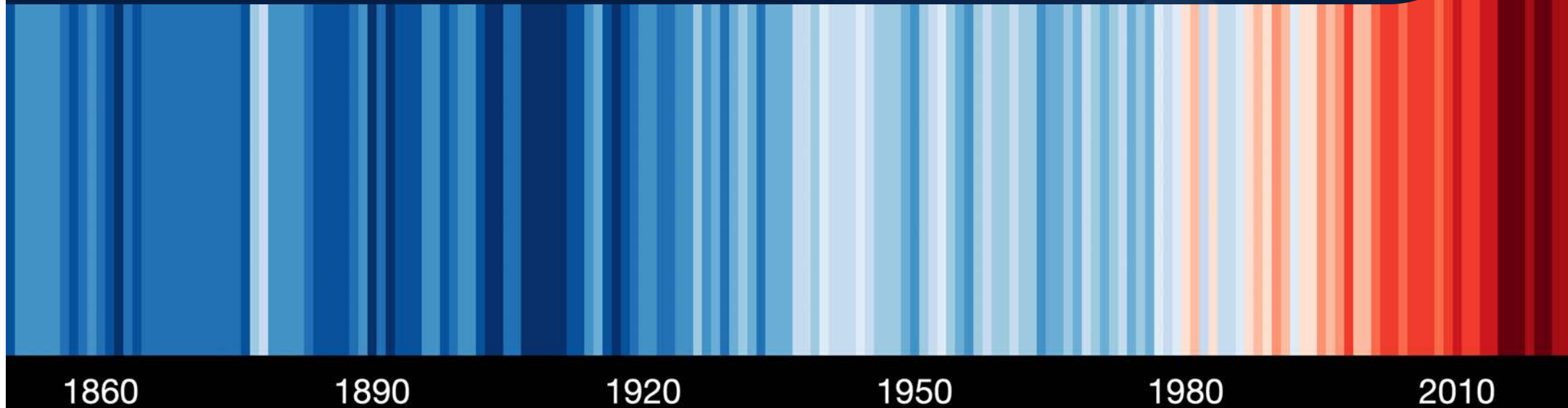
John Fairlie

MD AWRenewables

7th October 2023



Climate Change



- The global population remains reliant on fossil fuels for heating, transport and energy generation
- Deforestation is strangling the planet's natural ability to convert CO₂ to O₂
- Warmest ever July, August and September, 2023 set to be hottest year on record
- Temperatures exceeded 1.5 degrees for 1 in 3 days during 2023
- Without urgent change, Climate Change will continue to accelerate

Tackling the Climate Emergency

- As a nation, we are committed to becoming net zero carbon by 2050
- ‘...our world needs climate action on all fronts -- everything, everywhere, all at once.’
 - How we travel
 - What we eat
 - How we make electricity
 - How we heat our homes
- Fossil fuels must be replaced by renewable technologies in the form of wind and solar
- And we are doing exactly that here at Leighton Buzzard



Our History – Wind – Double Arches

Double Arches Heath and Reach

- Erected in 2014
- At that time tallest Onshore Wind turbine in the UK
- 100m hub, 87m rotor, 143.5m tip
- 1.5MW capacity, 4,400,000kWh/annum
- Capable of producing enough electricity to power over 1,100 homes
- A real success story for onshore wind



Our Present – Wind – Checkley Wood

Checkley Wood Heath and Reach

- Our technology is improving all the time
- 4.1MW Wind Turbine
(First UK Wind Farm at Delabole 1991 comprised 10 x 400kW turbines = 4.0MW!)
- 89.5m hub, 115m rotor, 147m tip
- Longer Blades, larger swept area
- 10,152,000kWh/annum
- This machine can produce enough electricity to power over 2,500 homes
- **The first to be commissioned since the lifting of the ban**



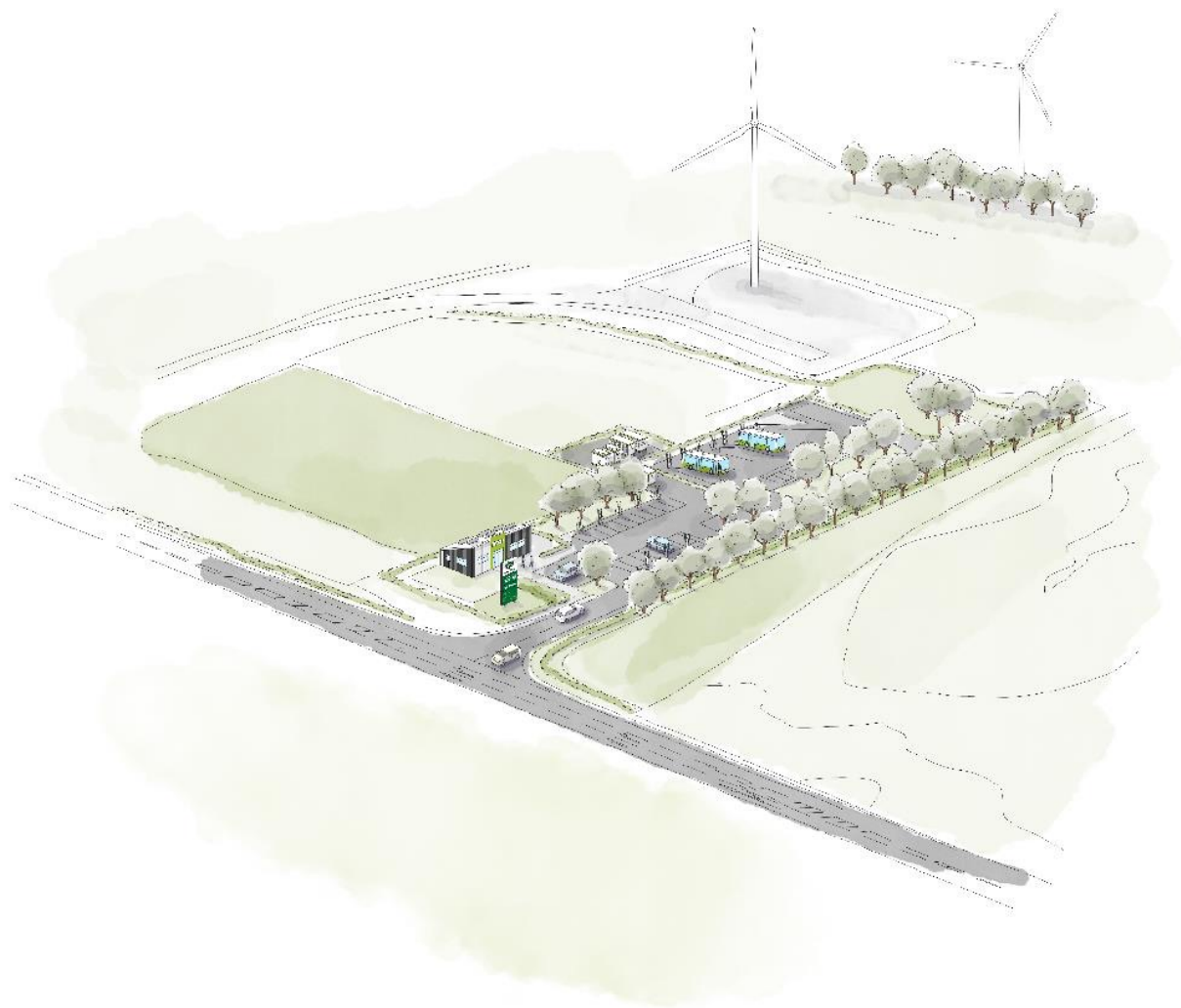
Our Present – Wind – Checkley Wood



Our Present – Wind – Checkley Wood



Our Present – Electric Vehicle Charging – Checkley Wood



- Uniquely powered by wind and later, also solar
- Completely renewable electric vehicle charging
- European first
- Storage and overnight depot for local Electric Bus service
- Working with CBC to upgrade Leighton Buses to be fully electric
- Coffee shop – direct wired
- Opening February 2024

Our Future – Going Further – Astral Green

Astral Green Energy Park

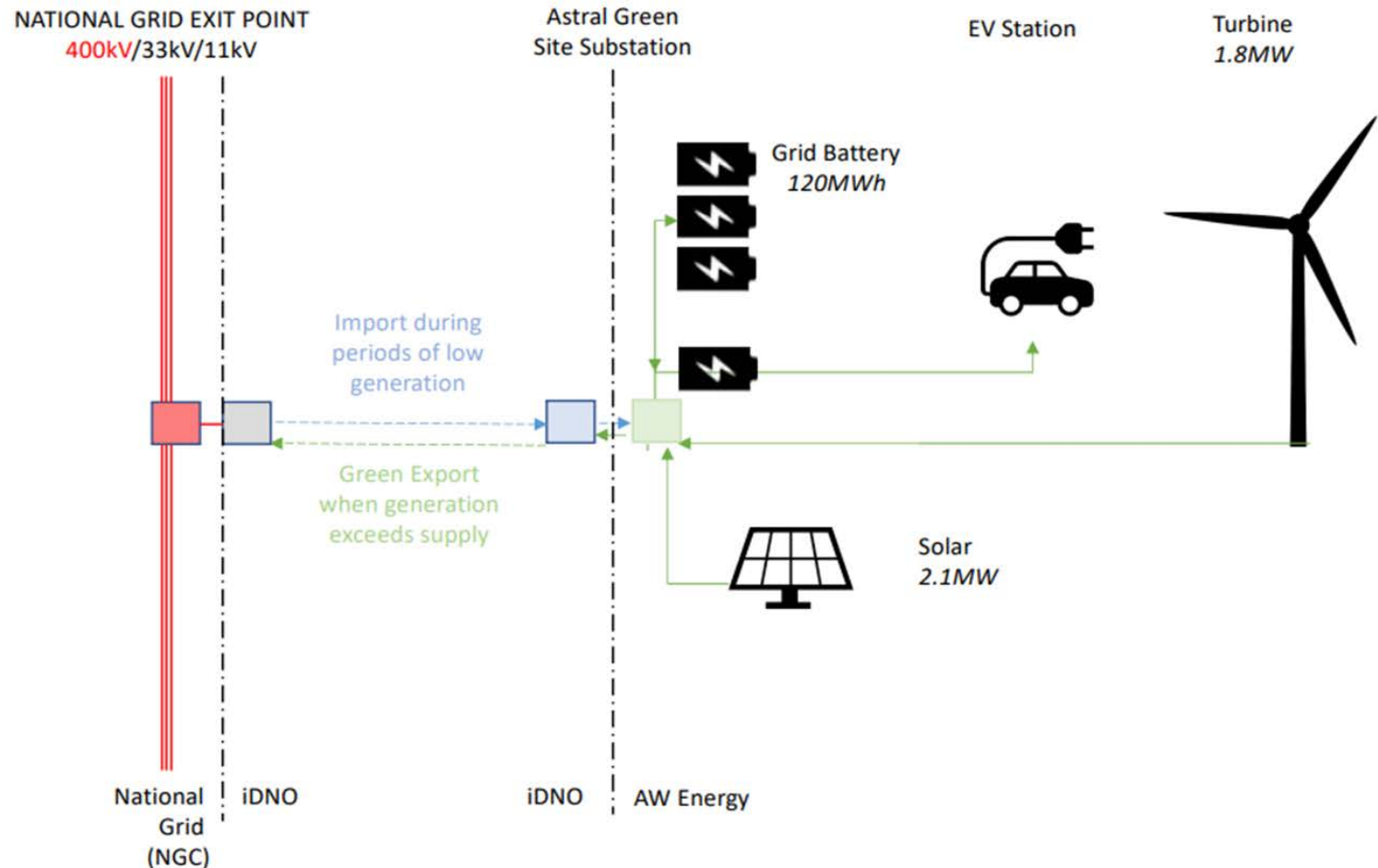
- The next step on from Checkley Wood
- Wind Turbine **99m tip height, 1.8MW capacity**
- 2.1MW Solar
- Renewable powered EV charging station
- Battery storage
- Grid exit point



Our Future – Going Further – Energy Centres

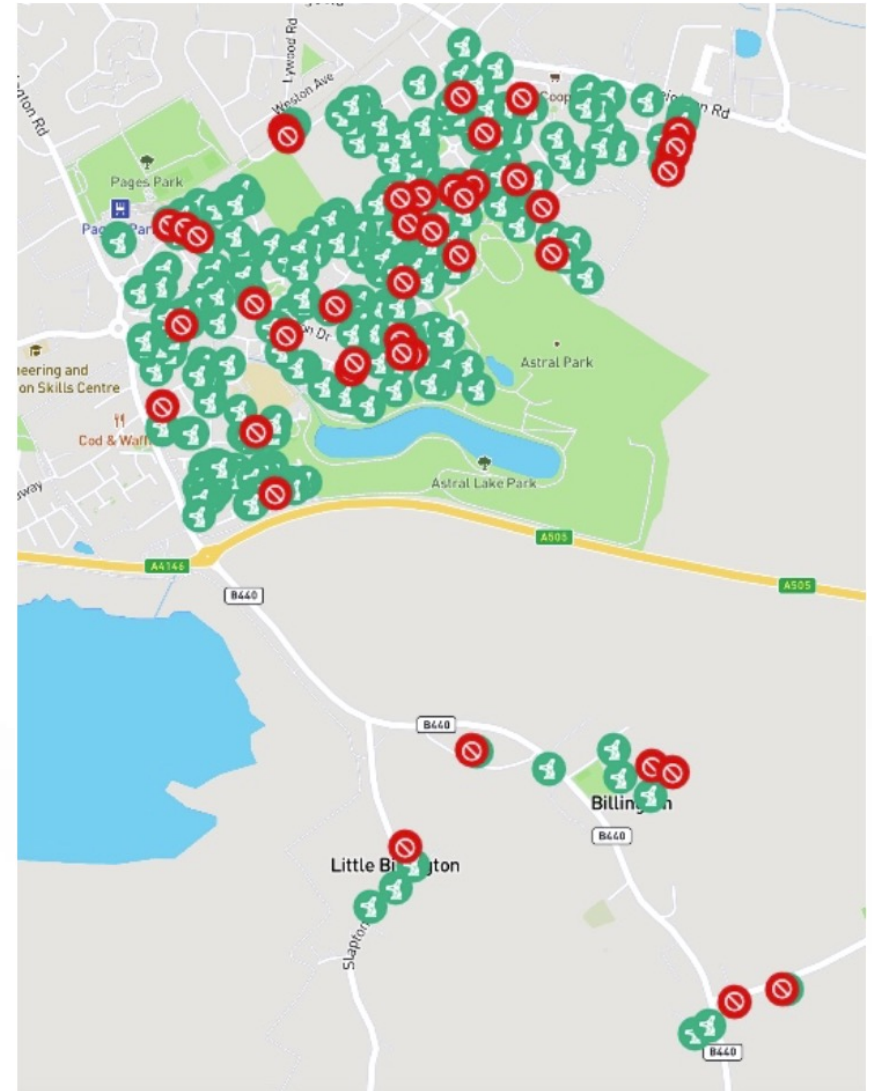
Energy Centres

- A vision to establish energy centres to support local communities
- Direct-wired renewable power
- Tailored to the needs of the local population
- Softer on the grid
- Servicing the needs of homes and businesses



Renewable Energy Development - Challenges

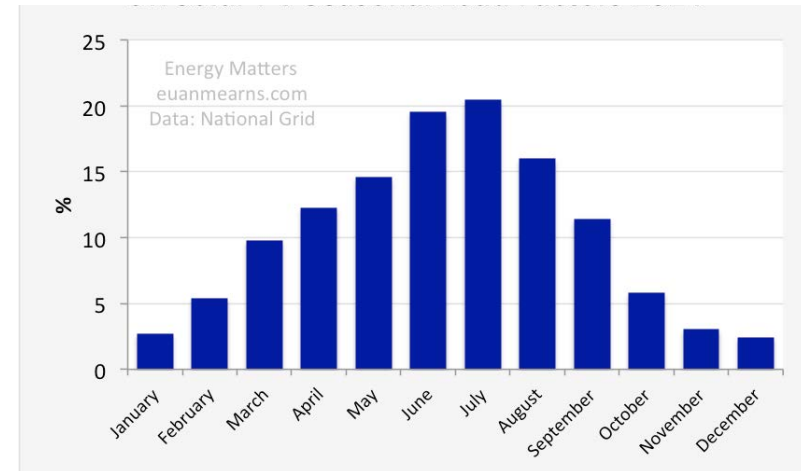
- Planning Policy
 - Strong foundation of support for further renewables development through the Climate Change Act, Climate Change Committee 6th Carbon Budget, Skidmore Review;
 - Lifting of the onshore wind ban in England:
Footnote 54, NPPF
*a planning application for wind energy development involving one or more turbines should not be considered acceptable unless it is in **an area identified as suitable for wind energy development in the development plan or a supplementary planning document**; and, following consultation, it can be demonstrated that the **planning impacts** identified by the affected local community have been **appropriately addressed** and the proposal has **community support**.*
- Astral Green – our surveys indicate an 88.7% level of community support!



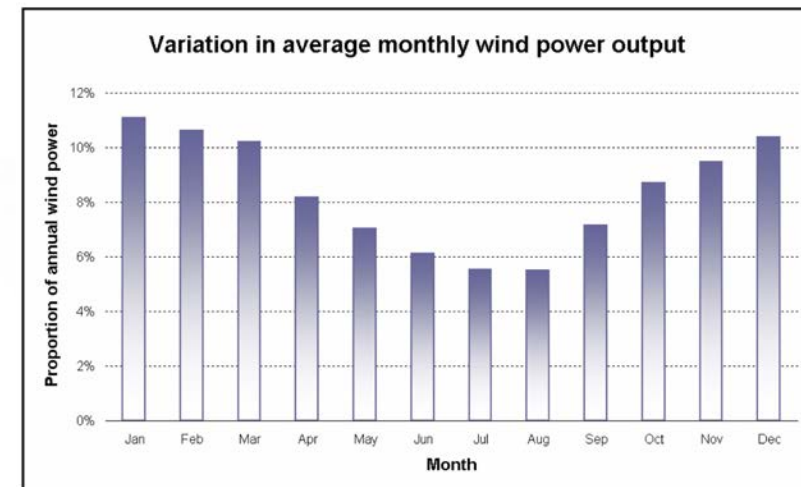
Renewable Energy Development - Challenges

- Grid

- Under investment in grid infrastructure;
- Distribution Network Operators overstretched;
- Connection rules do not prioritise delivery of consented projects;
- 'Speculative' large scale projects 'book' capacity from the grid for years;
- Batteries are considered as generators;
- Projects are allocated grid on the basis of their maximum output, not their actual production
- Grid offers now coming in into mid/late 2030's!



Solar Monthly Profile



Wind Monthly Profile

What can you do?



Change the Narrative!

- Spread the word! The public want and support renewables!
- Respond to consultations

Support Local Projects

- We have demonstrated overwhelming public support for Astral Green
- Please support our scheme when registered

The Future – Net Zero Communities



- Single High Capacity Turbines (6.2MW) or Clusters
- Complimentary Solar and Storage
- Direct-wired renewable power to EV stations and homes and businesses
- Ground source heat with ambient heat networks to homes

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