Reconciling the Economic Impacts of Offshore Wind Developments in the UK

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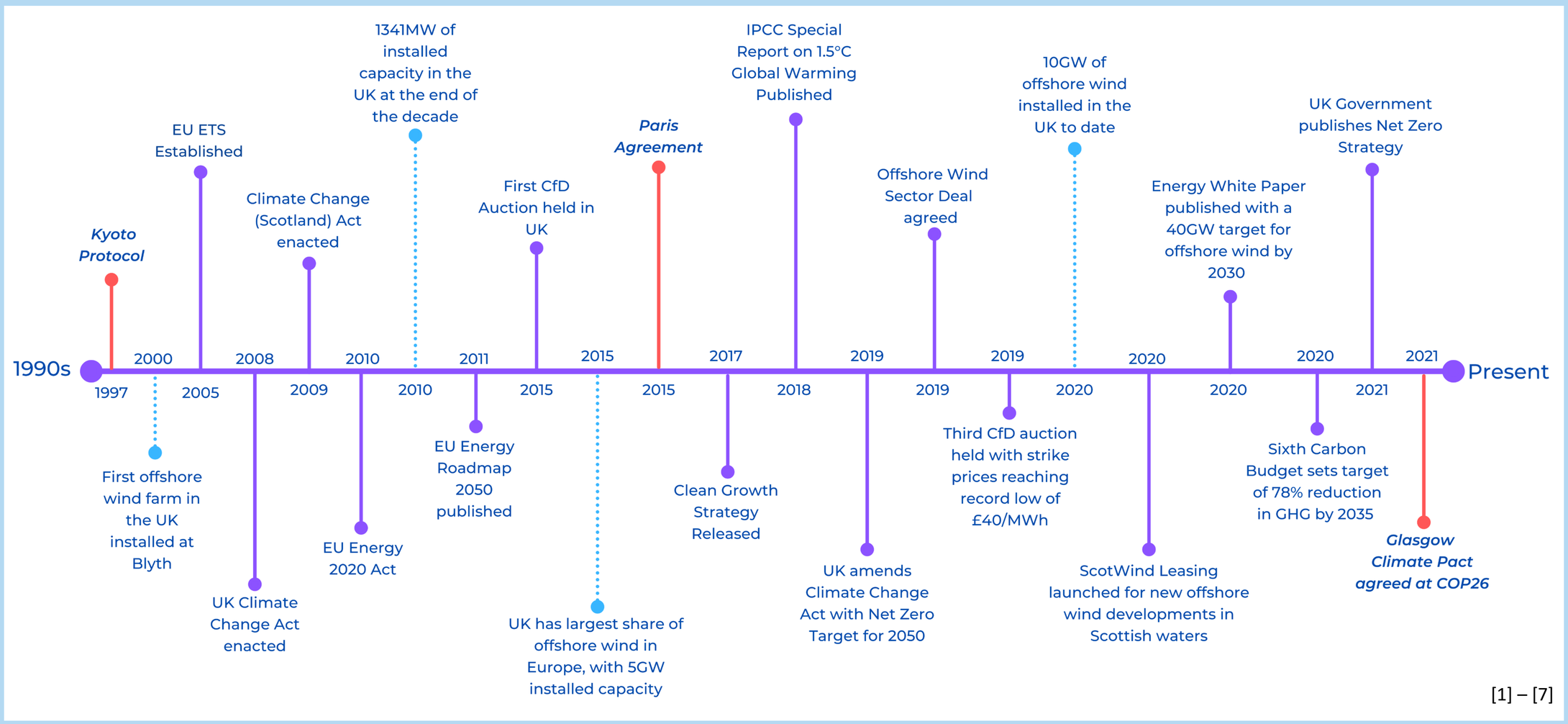
Introduction

Offshore wind is one of the fastest growing energy technologies in the UK, with a four-fold increase in installed capacity targeted by 2030 [1]. To ensure that the economic benefits delivered from this expansion are maximised, it is crucial that a full understanding of the operation and interactions of the sector are developed. A review of the development of renewable energy policy which has led to the current landscape has been performed, which puts in context the relevance and importance of this work. There has never been more emphasis on the growth of the offshore wind sector and its position as a key technology in the net zero transition.

Objectives

Currently, economic modelling and engineering cost modelling are considered separately from each other and performed with different objectives. The aim of this project is to reconcile these two differing viewpoints, to further the understanding of the operation of the offshore wind sector. The output of one side is of importance as an input to the other, to ensure that all stakeholder needs are being met. Through the use of traditional economic modelling techniques and engagement with industry, the embeddedness of the offshore wind sector in the wider economy will be analysed. Key areas of focus are local content and the supply chain.

Renewable Energy Policy Timeline: 1990s – Present



[1] – [7]

Planned Future Work

- Assessing the Consequences of a Changing Energy System using Multi-national IO Tables
- Time Series Approach for Embeddedness of Electricity Sector
- Case Study on Economic Impact of a New Offshore Wind Development
- Engineering Viewpoint on Supply Chain Planning and Local Content

Methodology

The economic modelling work being performed will utilise the Input-Output (IO) framework. IO is a "general interdependence" model [8], and can be used to illustrate patterns of purchases and sales between all sectors of the economy and to external actors such as Government and exports. Thus the technique is well-suited to analyse the embeddedness of the offshore wind sector in the wider economy, and its interactions therein. Alongside this work, engagement with industry stakeholders will continue, to ensure that the links between economic modelling and engineering decision making are appropriately considered within the analysis.

References

[1] BEIS (2020). *'The Energy White Paper – Powering our Net Zero Future'.*
[2] BEIS (2019). *'Offshore Wind: Sector Deal'.* [3] BVG Associates (2021). *'UK Offshore Wind History'.* https://guidetoanoffshorewindfarm.com/offshore-wind-history
[4] EWEA (2011). *'The European offshore wind industry – key trends and statistics 2010'.*
[5] EWEA (2015). *'The European offshore wind industry – key trends and statistics 2015'.*
[6] BEIS (2019). *'Contracts for Difference (CfD) Allocation Round 3: results'.*
[7] CCC (2020). *'The Sixth Carbon Budget – The UK's path to Net Zero'.*
[8] Rose (1995). *'Input-output economics and computable general equilibrium models'.* Structural Change and Dynamics