

# Power Sector Overview

Presenter : Paul Deane

ESRI 2025

HOST INSTITUTION



PARTNER INSTITUTIONS



FUNDED BY:



# I will focus on Three Topics

**Are electricity imports from the UK good for the environment?**

**Is the Carbon Border Adjustment Mechanism helpful?**

**What is the expected trajectory of the Power System in Ireland to 2030?**

# Topic 1

**Are electricity imports from the  
UK good for the environment?**

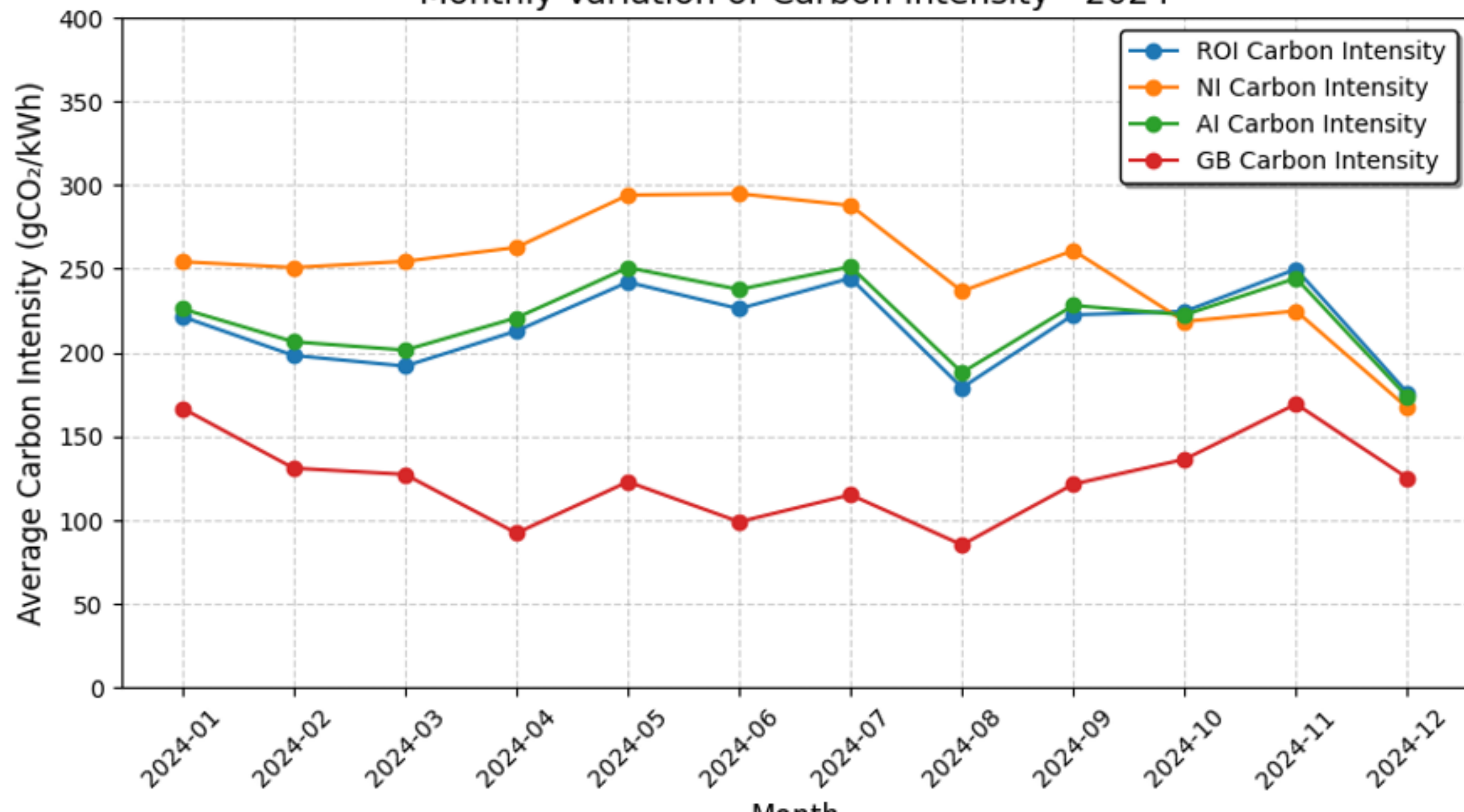
**Dissertation Title:**

**Quantifying the Carbon Emissions  
Impact of Electricity Imports to Ireland**

**Student Name: Brian Whooley**

**Course: ME Energy Engineering**

Monthly Variation of Carbon Intensity - 2024



# What we found

Imported electricity carried approximately 720 thousand tonnes of embedded CO<sub>2</sub> from the UK

If the same volume of electricity had been generated domestically at the same time it would have produced 1.2 million tonnes

This is a **net benefit** of 481 thousand tonnes of CO<sub>2</sub>

# Carbon Border Adjustment Mechanism

탄소국경조정제도

SINIRDA KARBON DÜZENLEME MEKANİZMASI کاربن بارڈر ایڈجسٹمنٹ میکانزم

МЕХАНІЗМ ВУГЛЕЦЕВОГО  
КОРИГУВАННЯ ІМПОРТУ

MECANISMO DE AJUSTE  
EN FRONTERA POR CARBONO

कार्बन सीमा समायोजन तंत्र

MÉCANISME D'AJUSTEMENT  
CARBONE AUX FRONTIÈRES

**CBAM**

MECANISMO DE AJUSTAMENTO  
CARBÓNICO FRONTEIRIÇO

炭素国境調整措置

MEKANISME الآلية الحدودية لضبط الكربون

PENYESUAIAN BATAS KARBON

ISIXHOBO SOKUHLENGHALENGISA UMDA WE-KHABON

碳边境调节机制

# Topic 2

**Is the Carbon Border Adjustment  
Mechanism helpful?**



# CBAM for Electricity for All Island System

It is not clear that there is a problem of Carbon leakage to be addressed

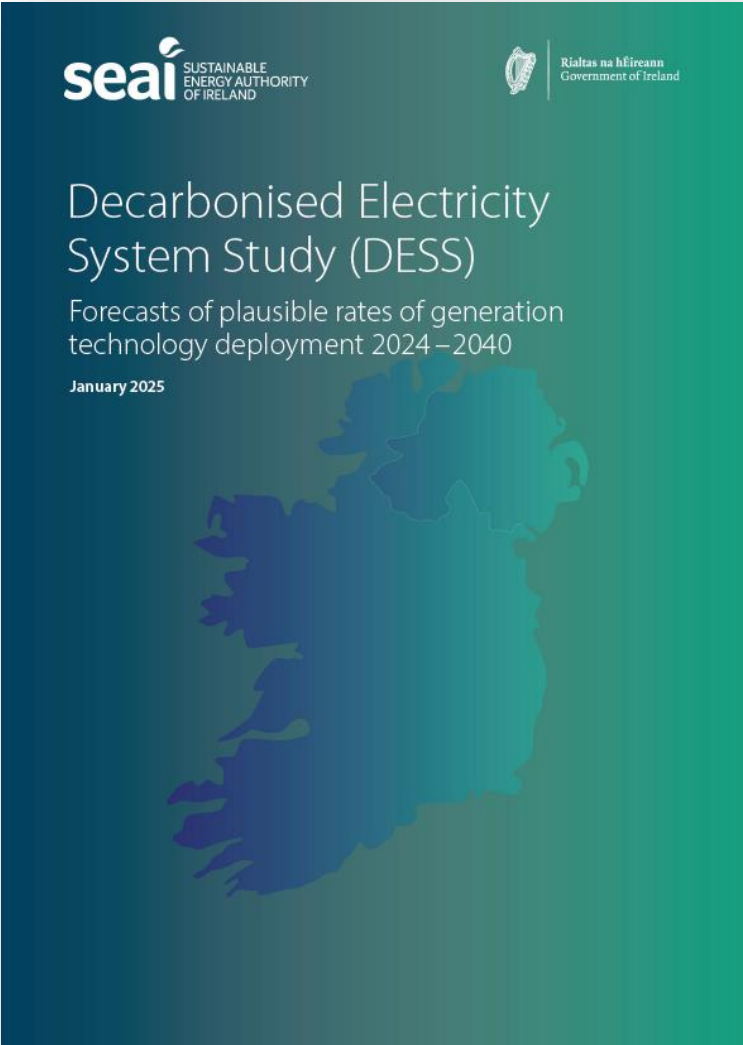
There is a genuine risk that CBAM will create disproportionate administrative burdens and costs compared to the emissions reduction that it could potentially deliver

The CBAM methodology is flawed because it looks to tax historic emissions rather than actual emissions

# Topic 3

**What is the expected trajectory of the Power System in Ireland to 2030?**

# Electricity Demand is projected to grow quickly; supply expected to come online slowly



Today Ireland is at 40% renewable electricity

The same projected supply of renewable electricity in 2030 leads to different Renewable Electricity (RES-E) outcomes because RES-E Penetration is a function of Demand

Low Build Out of Data Centers-2030	Medium Build of Data Centers-2030	High Build Out of Data Centers-2030
74% RES-E	65% RES-E	59% RES-E

# I focused on Three Topics

**Are electricity imports from the UK good for the environment? YES**

**Is the Carbon Border Adjustment Mechanism helpful? NO**

**What is the expected trajectory of the Power System in Ireland to 2030?  
Challenging**