

The cost of CO₂ abatement from Britain's only PWR: Sizewell B

EPRG Working Paper 2013

Cambridge Working Paper in Economics 2047

David Newbery

Abstract

This paper calculates the cost per tonne of CO₂ abated by Sizewell B (SZB, the nuclear power station commissioned in 1995). Other zero-carbon renewables received contractual support. A long-term Contract-for-Difference (CfD) is modelled with a strike price reset every 5 yrs. by the regulator under the Regulatory Asset Base model of electric utilities. The answer depends on the Weighted Average Cost of Capital (WACC), given the range of observed utility WACCs. At a low WACC the cost is £₂₀₁₉34.1/tonne CO₂ abated and £₂₀₁₉49.2/t. CO₂ at the high WACC, compared with the roughly £40/t. CO₂ paid by GB generators in 2019. Had the design for SZB been replicated for the 6.4 GW new nuclear the saving might have been £9-18 billion.

Keywords Cost of CO₂, Nuclear power, RAB, WACC, Cost Benefit Analysis

JEL Classification D61, H23, L94, C54, E43, H54, L94, Q54

Contact
Publication

dmgn@cam.ac.uk
May 2020