Sizewell C—Summary—Coastal morphology, climate change and the effectiveness of EDF's Flood Risk and Shoreline Change assessments. May 2021

Summary document of the main paper

The offshore geomorphology of the Greater Sizewell Bay is dominated by the Sizewell-Dunwich banks. The banks act as a natural offshore 'breakwater' limiting storm wave energy onto the Sizewell foreshore and have provided recent historical stability and protection to the existing nuclear installations. The banks, however, are largely formed from unconsolidated sand and mud deposits and the northern, Dunwich section is currently indicating marked instability.

EDF appears to have limited the scope, and hence the underlying principles, of its Flood Risk (FRA) and shoreline change assessments—including the Expert Geomorphological assessment (EGA)—by treating the Sizewell-Dunwich banks as an *immutable and permanent wave energy relief feature* in its modelling scenarios.

This assumption is counter to received knowledge from bathymetric surveys. It is not consistent with authoritative, geomorphological orthodoxy—*an orthodoxy validated by EDF's own research* in its 'BEEMS' technical documents obtained under 'Freedom of Information' and referred to extensively in this paper.

There is certainly a difficulty addressing the potential consequences of the loss or major compromise of the Dunwich bank: the 'soft' Sizewell shoreline could return to the '***most eroded coastline on record***'*, as it was between 1736 and 1836 before the development of the Sizewell-Dunwich bank northwards*. The subsequent shoreline recession, wave breaking over the Minsmere levels and flooding of the contiguous Sizewell marshland would then increase the flood risk to the Sizewell C main nuclear platform landward side.

Nevertheless, coherent flood risk and shoreline change assessments, and hence the flood design parameters, for Sizewell C must include, and be informed by, the three most recent and documented '100-year' major episodes in coastal processes recorded for Sizewell. There should also be a full consideration to offshore morphological change and the implications of the loss or major compromise of *at least the Dunwich bank and nearshore bars* over the lifetime of the development.

I am unable to locate evidence that EDF has considered these scenarios and therefore, in my view, EDF's FRA and shoreline change assessments are not acceptable or sufficient in their present form.

The Executive Summary of the main paper briefly details what I consider to be *these critical limitations* in EDF's Flood Risk Assessment and shoreline change assessments. This includes EDF's approach to climate change data, 'tolerable' overtopping levels, and the length of time that flood resilience is required for the nuclear site. All statements made are referenced and justified in the main body of the paper from authoritative sources—EDF's pre-DCO reports, the DCO documentation itself, BEEMS documents as stated, and accredited academic studies.

Main paper: Hyperlink to main document
Nick Scarr