



SPE ELECTRICAL



CASE STUDY 7: UCP CHOICE

3 OFF SOLAR FARMS: POWER SYSTEM STUDIES

Client:	UCP Choice
Industry:	Renewables
Plant Type:	Solar PV
Project:	System Studies
Contract:	Lump Sum
Date:	2017

“SPE was appointed to undertake a stage 3 G5/4 harmonic assessment and P28 transformer inrush study for 3 different 5MW solar farms.”

SPE was contracted by UCP Choice to carry out a series of power system studies for 3 new 33kV, 5MW solar PV farms within the UK and for a number of different DNOs.

SPE’s scope included undertaking a full G5/4 Stage 3 harmonic assessment of each site, requiring import of the existing DNO network model into Digsilent. SPE modelled the background harmonics and PV array output before checking the harmonic distortion levels throughout the network for a variety of operating scenarios, as well as the system performance to harmonic resonance sweep.

In addition, SPE also carried out a detailed P28 transformer energisation study using the PSCAD simulation package to determine the voltage disturbance caused by energising the transformers individually or as a group. This study also reviewed the long-term and short-term flicker created by the PV units on the network.