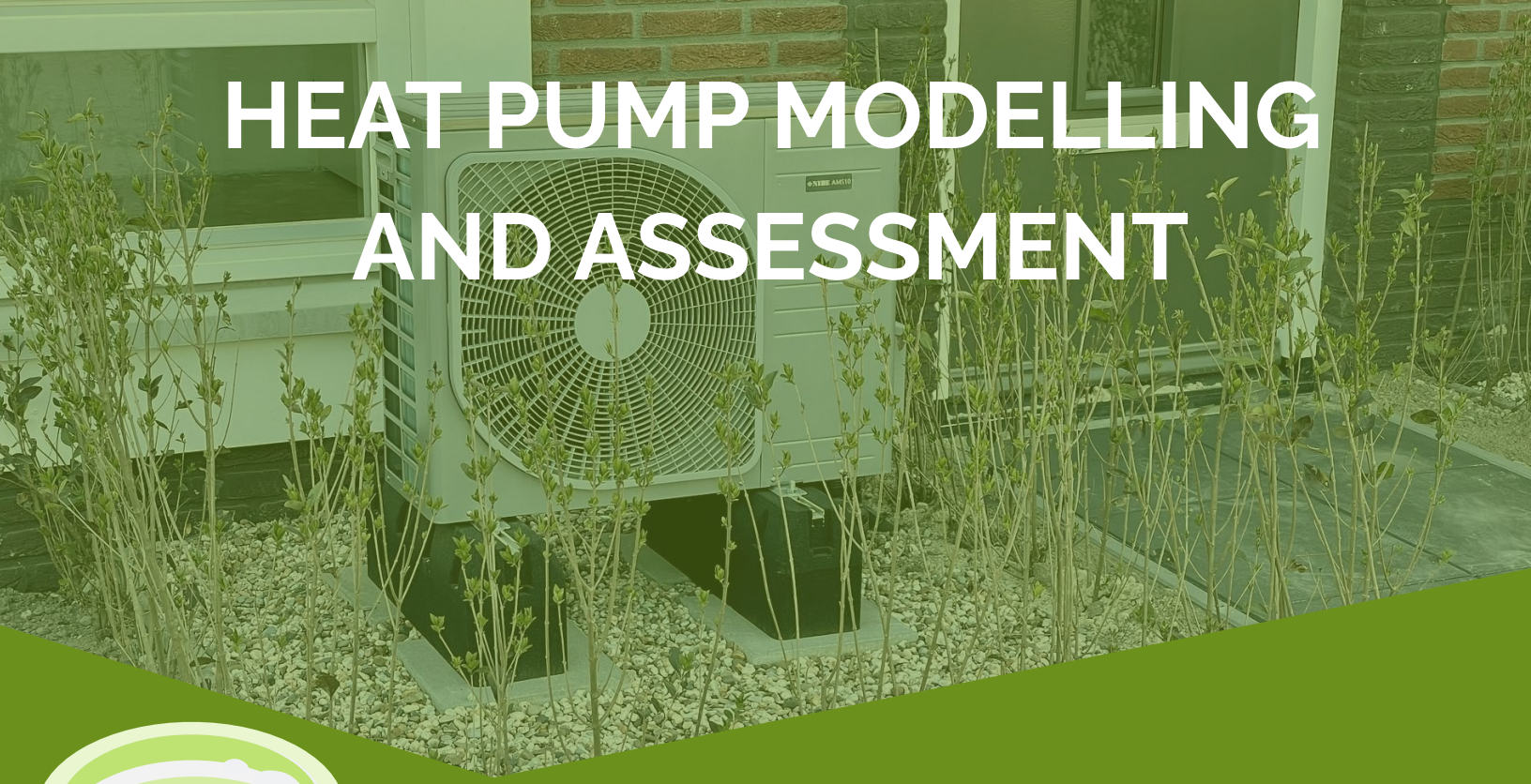
HEAT PUMP MODELLING AND ASSESSMENT



CASE STUDY

OVERVIEW

Threepwood Consulting were commissioned to develop a heat pump flicker and harmonic emissions model and simulate its performance based on expected operation of the system.

A NOVEL WAY TO ASSESS HEAT PUMP POWER QUALITY PERFORMANCE PRIOR TO CONNECTION TO THE LOW VOLTAGE NETWORK

OBJECTIVES

- Establish an appropriate methodology to 'simulate' the harmonic and flicker emissions.
- Assess the heat pump to relevant standards.
- Assist with preparation of heat pump data for upload to ENA heat pump database.

SCAN ME

Threepwood Consulting

PROJECT CHALLENGE

The UK electricity network operators refer to a Heat Pump (HP) database for the power quality characteristics of HPs. This database contains details of some 500 models – these are a range of soft start and variable speed designs. BS EN 61000-3-12 and BS EN IEC 61000-3-11 are the product standards to which domestic HPs are assessed.

The testing of devices with a rated current above 60A or even 32A is quite onerous – test instruments above 32A are expensive and not common in Europe. Setting up the 'wet side' of the HP test requires a significant effort.

PROJECT APPROACH

Threepwood assisted a HP manufacturer with an assessment of power quality impact of the HP design.

PROJECT OUTPUT

Developed Electromagnetic Capability (EMC) modelling criteria to conform to BS EN 61000-3-2 and 3-3 or BS EN 61000-3-11 and 3-12 compliance.

KEY RESULTS

Client Satisfaction

Legislative Compliance

Comprehensive and Robust Solution

Commercial Range EMC and Electrical Assessment