



	DATA AND VISIBILITY	OPERATING ENVELOPES	PASSIVE AND ACTIVE DER	CUSTOMER ACCESS AND TARIFFS	NETWORKS AND OPTIMISATION
STAGE 1	<p>Customer connection data is static and little to no "live" data</p> <p>Limited to no LV visibility</p> <p>DER register in place</p>	<p>Fixed export limits</p> <p>Dynamic operating envelopes (DOE) being trialled</p> <p>Simple allocation of export capacity</p>	<p>DER mostly passive PV and poor disturbance performance</p> <p>Minimum DER technical standards under development</p>	<p>Network access and tariff reform high priorities.</p> <p>New residential time-of-use tariffs (e.g. solar sponge tariff)</p>	<p>Customer DER unmanaged</p> <p>Active DER solutions rarely used to solve network constraints</p>
STAGE 2	<p>Customer DER settings start being provided to NSPs automatically</p> <p>Increasing network visibility and automation of data gathering for constrained networks</p>	<p>DOEs start in constrained networks</p> <p>Introduction of flexible, near real time export limits</p> <p>Export capacity allocated based on forecasts</p>	<p>DER technical standards in place</p> <p>Active emergency PV shedding capabilities introduced in some jurisdictions</p>	<p>Networks access arrangements for DER exports in regulations</p> <p>Network tariff reform expanded e.g. V2G, EV, and time varying feed in tariffs</p>	<p>DER integration trials, optimising DER across local networks</p> <p>Network batteries become more widespread</p>
STAGE 3	<p>Automated near real-time data collection</p> <p>Constraints are dynamically calculated according to the network's infrastructure status</p> <p>Most customers have a smart meter</p>	<p>DOEs commonly used in high DER penetration network areas</p> <p>Export capacity allocated based on real time data</p>	<p>DER technical standards refreshed</p> <p>DER response capabilities improving</p>	<p>Network access, DER value, and network service value refined</p> <p>Gradual transition to network cost reflective tariffs, incentivising supportive consumer behaviour</p>	<p>Networks maximise levels of inherent hosting capacity</p> <p>DER integration platforms and local DER markets evolve</p> <p>Desired DSO/ market optimisation end-state identified and justified</p>
STAGE 4	<p>Automated real-time data collection and comprehensive network visibility enables optimal network performance</p>	<p>DOEs used in whole system optimisation</p> <p>DOEs optimise network hosting capacity for fairer, more equitable access</p>	<p>Active and optimised DER unlocks value across the system, providing grid support and value all customers</p>	<p>Network tariffs are cost reflective, equitable and dynamic</p> <p>Local costs integrated into wider market orchestration</p>	<p>Delivered desired DSO and market optimisation</p> <p>Market operations allows key data exchanges supporting whole system optimisation</p>