

## **861 – Electrical engineering challenges and opportunities in EV charging**

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Abstract: Whilst assumed simple in design and application, the heart of EV charging can be complex, especially when working across multiple geographies, standards, products and designers.

The paper will identify and discuss some of the key differences experienced in EV charging design and products compared to traditional oil and gas electrical engineering.

This includes site selection, power connection requirements, electrical design including earthing systems, harmonic effects, remote monitoring and control, cabling systems when using distributed or integrated chargers.

The paper will also explore opportunities offered by solid state equipment, alternative semi-conductors, and efficiency concerns.

The resulting paper will be a useful toolkit for engineers integrating from traditional electrical industries into the low margin, high quantity of installations and multiple country requirements presented by EV charging installations.