# Solar inverter filter inductor design

## Overview

This paper presents an extensive discussion on the design of the inverter-side inductor for GCIs. The inverter-side inductor (Li) is calculated based on the allowable inverter peak-peak ripple current to reduce the losses due to the ripple component. In this thesis, a way of rapidly designing, modelling, and constructing filter inductors for DC/AC inverters is investigated. A design tool is developed to provide multiple design possibili-ties by varying geometric parameters. While the grid-side inductor of the LCL filter can utilize an iron core and follow the standard grid frequency inductor design, the inverter-side inductor design needs attention since it has significant. In inverter design, inductor is a key component to achieve energy conversion and waveform shaping. Such findings highlight why inductors, though often overlooked, have become a central focus in engineering.

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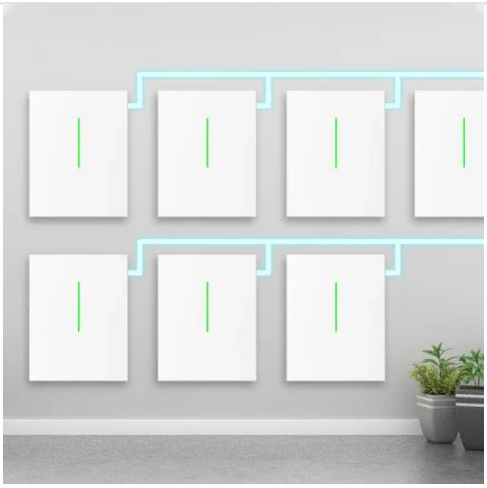

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