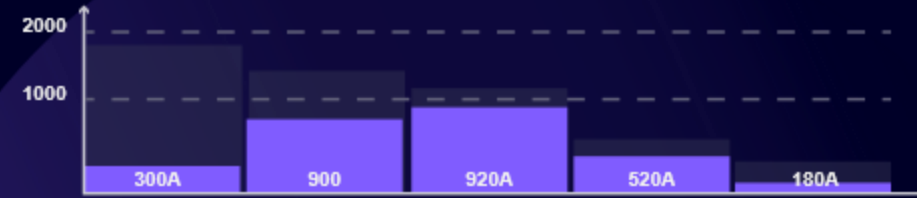


3

Switchgear combination with **center infeed**



Standard design of the switchgear and control gear assembly

A detailed definition can be found in ISO TR 63196:2020

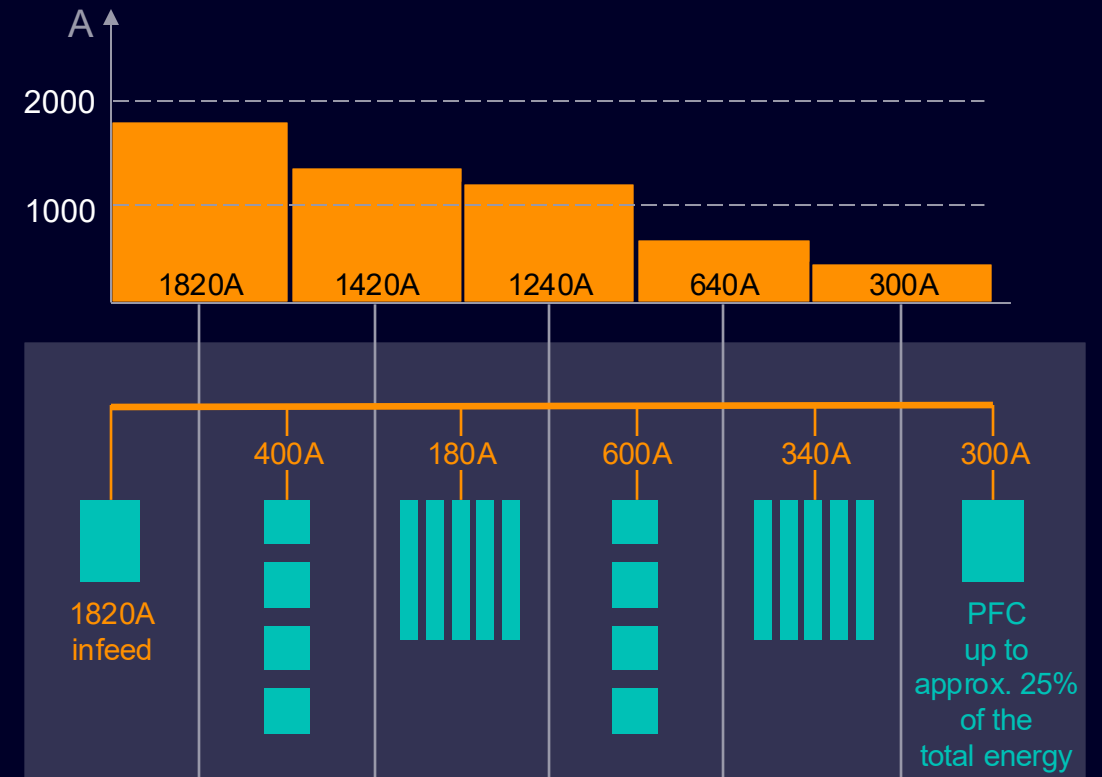
The **design of switchgear and control gear assemblies** are able to contribute towards energy efficiency in two different ways

1. Through the **construction and design** such as through the packing density or effectiveness of the housing ventilation / cooling.
→ The lower the operating temperature, the lower the conductor resistances
2. Through **effective distribution of the electrical energy**
Decrease in the number of current-carrying conductors.
Connections and busbars can make up to 25% of the total losses

The infeed is often on the side:

- The **load** of the continuous **busbar** is very high here and decreases from left to right

Power distribution at the busbar in A



Recommendation: Design of the switchboard assembly through middle feed

Example of a switchboard system (SIVACON S8)

The **maximum current** on the main busbar is reduced by **49.5%** from 1820 A to 920 A.

The **power loss** was reduced by **72%** from 96 W to **26.7 W**.

Savings*:

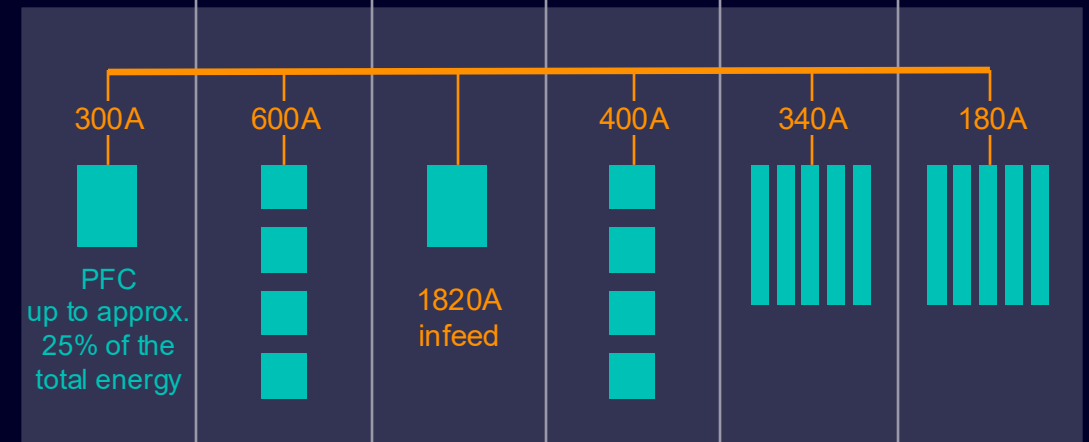
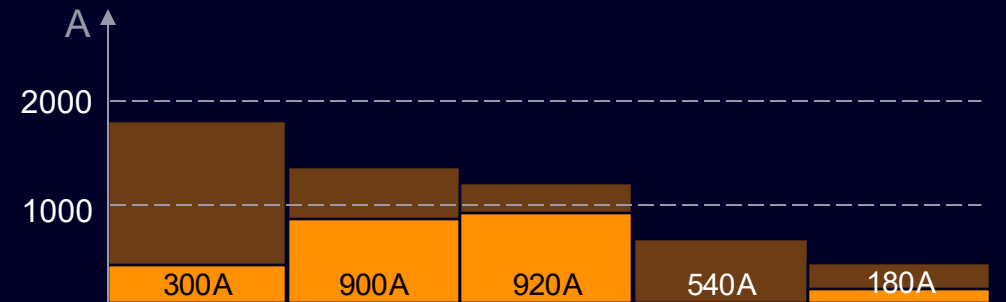
CO ₂	Energie	OPEX
2.550 kg	6.800 kWh	600 € - 1.520 €

Additional investment:

0 €



Power distribution at the busbar in A



Typical layout of a switchgear assembly with infeed in the middle

* Premises: Duty cycle 0.5; duration 20 years; CO₂ emissions 0.42 kg per kWh (electricity mix in Germany); CO₂ emissions for copper production 2.3 kg / kg Cu; electricity price € 0.25;