An equivariant infinite loop space machine is a functor that constructs genuine equivariant spectra out of simpler categorical or space level data. In the late 80's Lewis-May-Steinberger and Shimakawa developed generalizations of the operadic approach and the $\Gamma$-space approach respectively. In this talk I will describe work in progress that aims to understand these machines conceptually, relate them to each other, and develop new machines that are more suitable for certain kinds of input. This work is joint with Anna Marie Bohmann, Peter May and Mona Merling.