Load Stretching Algorithm

The motivation for this is that given a load forecast shape, , we want a linear transformation, such that and . That is, we can pick the average and peak and get a load shape based on the original with a given energy (mean) and peak (max) value.

I’ll give you the answer first and offer a more detailed explanation after. If you take the peak for the original load forecast to be and the energy to be , then

and

This comes from some basic substitution:

And

Substitute for in the second equation gives the answer for :

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I’m sure this is a basic result from somewhere, but we’ve reproved it for you. Basically this gives you a function that transforms using the energy and peak from the existing forecast and the targeted energy and peak in a linear transformation.

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