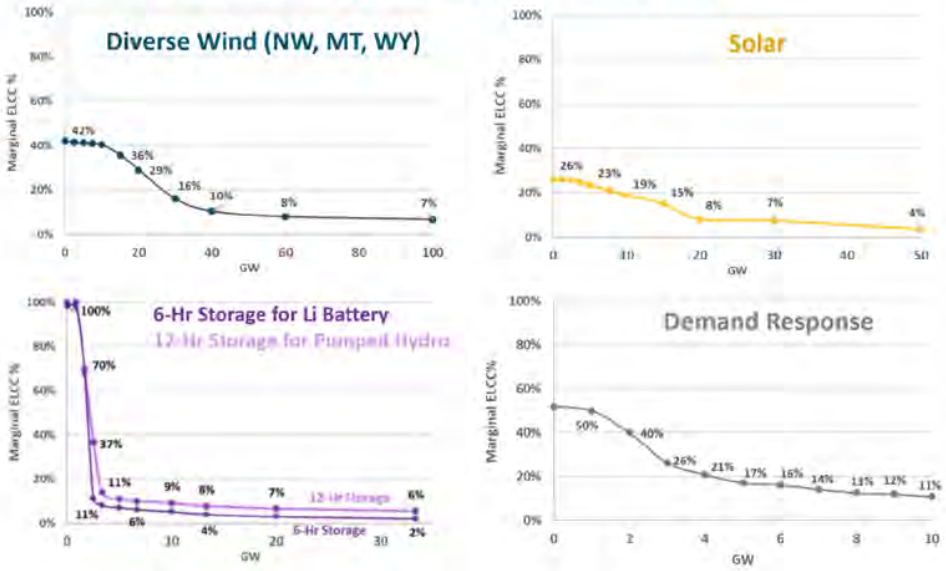
Figure 13. Solar, Wind, Storage, and Demand Response Capacity Values



The capacity value for energy storage resources shown in Figure 13 are very different from those in other regions, such as California or the Desert Southwest, declining much more quickly as a function of penetration. There are two reasons for this. First, the Pacific Northwest is a winter peaking region in which loss-of-load events are primarily expected to occur during extreme cold weather events that occur under drought conditions in which the region faces an energy shortfall. These events, such as the one illustrated in Figure 3 above, result in multi-day periods in which there is insufficient energy available to charge storage resources, severely limiting their usefulness. This is unlike the Southwest, where the most stressful system conditions occur on hot summer days in which solar power is expected to be abundant and batteries can recharge on a diurnal cycle. Second, the Pacific Northwest already has a very substantial amount of reservoir storage which can shift energy production on a daily or even weekly basis. Thus, the Pacific Northwest is already much closer to the saturation point where additional diurnal energy shifting has limited value.

Nevertheless, recognizing that the capacity value of energy storage is still being researched, in the Northwest and elsewhere, we include a sensitivity case in which energy storage resources are assumed to have much higher ELCC values, similar to what is expected in the Southwest at comparable penetrations.

Comment [AB16]: E3 is still reviewing this case and deciding whether to include or not.