These comments are in response to the proposed Table on Page 34 of Pay's report -

The table below is based on the three Argonne National Laboratory's (Argonne) research papers referenced in Pay's bibliography. Argonne recommends in all three papers that the "limit of visibility for casual observers be used as a minimum distance for visual impact assessments." This appears to translate to Argonne's Visibility Rating Level 3 (see Table 2 on page 17 of their transmission line report). Argonne indicates their 1-6 rating scale is based on the BLM's VRM system and Visual Contrast Ratings. Their Level 3 rating correlates to where potential direct effects to historic resources may occur. Please note that Argonne indicated in their 11-27-2018 email they do have any data for the heights of the facilities in their examples. Argonne also does not appear to discuss design features (e.g., circuit types of the transmission lines - single vs. double may affect massing and proportion) in their reports and whether any of their examples might feature parallel facilities (e.g., 2 transmission lines running parallel).

Undertaking Type	**Argonne Recommended Minimum Distances for Visual Impact Assessments -**
230kv monopole tower electric transmission line	2.5 miles (see page 26)
230kv H-frame tower electric transmission line	3.5 miles (see page 26)
500kv monopole tower electric transmission line (note contradictory statements)	5 miles (page **1)** 8 miles (see page 26)
500kv lattice tower electric transmission line	10 miles (see page 26)
Solar Energy Fields (Parabolic Trough)	"easily visible" at 14 miles (includes both day and night conditions)
Solar Energy Fields (PV facility)	"easily visible" at 22 miles (daytime conditions)
Wind Energy Fields (turbines 300-400 feet in height)	Suggested visual impact analysis radius due to movement of turbine blades: 30 miles during day - more for night due to lighting
Concentrated Solar Power Towers (5-20 MW)	"easily visible" at 20 miles

Please note that visual effects may have the potential to extend beyond the direct physical effects APE for a "Vertical Structure less than 10 feet". Therefore, a site visit is recommended to determine visibility of the casual observer for those undertakings. As width and massing of new structures are unique to each undertaking and setting, a visual impact analysis could help define the APE and be based on "viewshed limiting factors" such as topography, vegetation, manmade structures, viewer height, target height, earth curvature, atmospheric refraction etc. (list of factors courtesy the Wyoming BLM's *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands 2013).*