An interesting paper quantifying competition and collaboration in the feedback loops of the SHE nexus and how these feedbacks are impacted by IWDPs at different time scales.

**Major comments/questions**

1. *Line 129 to 131:* How do the dam release rules factor into the estimation of dam discharge, and are they integrated alongside the catchment area ratio?
2. Section 2.3 Was the FDC constructed using naturalised flows or the current/modified flows in this study? What are the implications?
3. Section 2.3 / Table 4: The MTMMHC method effectively sets ecological flows retrospectively, but how can it be adapted for real-time dam operations? How can operational decisions account for the significant variation in MEF between wet and dry years, especially when such conditions are uncertain at the start of the year?
4. Figures (from figure 7): The caption for the figures should be more informative. For Figures 7 and 8, for instance, it should state the scenarios, with or without IWDP respectively, the priorities and what each LRR represents (S, H or E). Also, it would be good for Figure 8 to be immediate below 7 so readers can easily compare the effect if IWDPs.
5. Line 454- 464: What metrics were used to quantify runoff variations across time scales? Was the link between runoff and feedback loops validated?
6. Results and Discussion: Very little discussion or reference to other studies. For instance, no comparison to real world observations from the HRB; have any of the scenarios occurred in reality? And if so, were the feedback loops in line with the findings? Also, the impacts of IWDPs on feedback loops are reported, but how do these findings translate into actionable management strategies? Are there optimal thresholds for water donation and receiving that maximize system-wide stability of the SHE nexus? How can this framework guide policy or reservoir operation strategies in basins like HRB? Are there specific recommendations for balancing S, H and E, especially in low flow months, where competition between water supply, hydropower, and environmental needs intensifies?

**Minor comments**

Line 107: “It has been widely application”. Correct to “It has been widely applied”.

Line 125: “approaching 1 meant”. Correct to “approaching 1 means”.

Line 145: You need to state that P is precipitation (I assume P<25% means precipitation below the 25th percentile)

Figure 3: The arrows of outflows (reg. water supply flow, ET and seepage, water donation) start at different locations for the *i*th reservoir and the (*i+1)*th reservoir.

Line 229: Should this read: “Thus, the differences between Nexus I and Nexus III can figure out **impact of different IWDP clusters** on the SHE nexus”?

Table 4: What are the units of the e-flows?