Sidestepping Science:
Review of the Pöyry Report on the Xayaburi Dam

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Summary of Xayaburi Dam's areas of non-compliance

The Lao government has committed to comply with the MRC's Preliminary Design Guidelines for Mainstream Dams. According to the Pöyry report, the Xayaburi Dam is now "principally in compliance." In contrast, the MRC's technical review of the Xayaburi Dam "highlights a number of areas of uncertainty on which further information is needed to address fully the extent of transboundary impacts and mitigation measures required." The table below summarizes the Xayaburi Dam's compliance with key requirements set forth in the MRC's Preliminary Design Guidelines. This table is not intended to be a comprehensive list of all requirements with which the Xayaburi Dam fails to comply.

Key MRC requirements	In compliance?	Comments
Fish passage		
A number of different options for fish passage upstream and downstream need to be considered for the range of species, volume of migrations and flow conditions encountered at a dam site. (Para. 51)	No	As noted by the MRC and Pöyry, the developer has not collected this baseline data.
Effective fish passage is usually defined as providing safe passage for 95% of the target species under all flow conditions. (Para. 61)	No	Pöyry does not reference the 95% target and does not provide evidence that technology exists to meet this target.
Where fish passage rates are unlikely to be adequate to maintain viable populations, the developers must develop and propose mitigation options as one element of compensation programs for lost fisheries resources. (Para. 63)	No	As noted by the MRC and Pöyry, the developer does not have sufficient baseline data about people's livelihoods to develop compensation programs.
The planning and design of the fishways should be fully integrated into the dam	No	Pöyry proposes to finish designing the fish passages after construction is already

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design concept from the earliest stages of planning. (Para. 12)		under way, instead of incorporating it into the design phase. The MRC highlights irreversible impacts that could occur during construction.
Target species should be selected based on considerations of commercial and livelihood importance, broad coverage of ecological guilds,[2] as well as conservation of threatened species. (Para. 66)	No	As noted by the MRC and Pöyry, the developer does not have sufficient baseline data to do this. The four governments have not identified target species.
The preferences, tolerances and biological attributes of the target fish species relevant to successful movement through the facilities should be clearly established. (Para. 13)	No	As noted by the MRC and Pöyry, there is insufficient baseline data to meet this requirement.
The peak biomass likely to be using the facilities must be determined and the appropriate structure sizing of fishways, cycle time of fish locks and/or lifts, and water availability established. (Para. 69)	No	As noted by the MRC and Pöyry, the developer has not determined this information.
Sediment transport		
When predicting rates of sediment accumulation in reservoirs it is important…to account for dams upstream of the reservoir in question that would reduce sediment delivery to the reservoir. (Para. 16)	No	As noted by the MRC and Pöyry, there is insufficient data about the impacts of Chinese dams in the Upper Mekong.
The sediment management regime needs to be coordinated for any cascade of dams. (Para. 116)	No	There is no indication that Pöyry and the Lao government considered the sediment management regime for the cascade of six dams in upper Lao PDR.
The inter-relationships between hydraulics, river morphology and ecology need to be considered in design stages (individual dams) and when assessing the cumulative effect of sediment changes due to operation of a cascade of dams. (Para. 118i)	No	Pöyry fails to mention the interaction between sediment transport and ecosystems, and does not assess this requirement.
Developers should design mainstream dams to pass fine suspended sediment and coarse bedload material in a way that most closely mimics the natural timing of sediment transport dynamics in a river. (Para. 120)	No	The MRC and Pöyry suggest that sediment transport should mimic the natural timing and dynamics of the river, but also note that there is insufficient data about what the natural conditions are.
Water quality and aquatic ecology		
Water related diseases should be foreseen and prevented at all potential dam sites in	No	Pöyry does not consider the potential impacts of the dam on disease vectors.

[2] The MRC categorizes Mekong fish species into different behavioral guilds. See MRC preliminary design guidance, p. 10-11, para. 57.

the mainstream. (Para. 146)		
Minimum flow releases as well as restrictions on changes to natural variability need to be assessed using appropriate environmental flows assessment (EFA) techniques and approaches. (Para. 31)	No	As noted by Pöyry, the developer has not conducted an environmental flow assessment or other assessment of the impact of the dam on ecosystems.
Safety of dams		
All aspects of the World Bank Operational Policy (OD/GP 4.37) for the safety of dams should be reflected by developers and operators, including required reviews by an independent panel of experts of the investigation, design and construction of the dam and start of operations and sub-plans. (Para. 188)	No	Pöyry does not mention the requirement to comply with the World Bank's operational policy.
Developers and operators should ensure there is full and effective consultation with local communities and local government authorities and all concerned organizations and agencies, especially with regard to the emergency preparedness plan. (Para. 191)	No	As the MRC and Pöyry note, no emergency preparedness plan is yet in place. Furthermore, there has been no consultation with local communities and local government authorities on emergency preparedness.