

Comments: Burdekin Dam does not satisfy current Australian National Committee On Large Dams Guidelines

Facts:

1. The BD is a huge energy resource that is unutilised. More than \$300m of straight power generation were not realised last year alone because flood waters were spilled directly over the dam.
2. BD does not satisfy current ANCOLD (Australian National Committee On Large Dams) Gravity Dam Guidelines for stability to the current Hazard Category, and the present weather patterns are slowing, e.g. Hurricanes Harvey, Florence & Dorian stalled and dropped biblical volumes of water that would topple the existing dam if a similar event occurred in the BD catchment.
3. ANCOLD upgrades need the expenditure of approximately \$300m to fix the "overtopping" stability problem.
4. The BD was designed for a 14.7m phase II raising, with provision for a 1,500MW Pumped Storage Power Station, and this should go ahead, and include for the ANCOLD upgrades that must be made.
5. A preliminary design was done downstream for the Blue Valley Dam at the confluence of the Burdekin and Bowen rivers which can provide the required downstream pump storage and capture more power.
6. The scheme is close to the Origin Power distribution grid at Woodstock/Strathmore, capable of feeding power North, South and West on the proposed Copper String to Mt Isa.
7. All the intermittent solar and wind power coming on stream in North Queensland needs a very large battery to balance and stabilize the electrical grid, and hydro pumped storage is, by a factor of 10, the most economical battery system.
8. The design build and commissioning of a 1,500 Mw Pump/Storage scheme may take 5-7 years.
9. The existing North Queensland coal and gas generators are old, inefficient, expensive, dirty, near their design life and in need of replacement.

Benefits in building a Pumped Hydro scheme:

1. Burdekin Pumped Hydro is already over half built and is the cheapest battery for the grid by a factor of at least X10 (note that Genex Power claims X15), this will stabilize the grid for all the intermittent solar/wind power coming on stream in North Queensland.
2. This scheme maximizes the potential for power from existing flow of the Burdekin and Bowen rivers utilising 88.7M head compared to a 62M head proposed, a 43% increase. Note the Blue Valley Dam has a 34M head.
3. The BD raising will reduce spills to the Great Barrier Reef Marine Park, greatly minimising the degrading silt plume.
4. The scheme will be a huge benefit to the local economy from the \$2.8B plus construction cost.
5. The scheme will have a substantial tourist potential because: a) it is close to, and an easy day trip from Townsville. b) the Blue Valley Dam will have a substantially stable water level, with a 2M variation. c) it will also provide substantial cottage lot potential around that lake.
6. There will be substantial benefits to the local economy in employment, cheaper power and tourism.
7. A 50Mw floating solar farm can also be constructed on Lake Dalrymple, behind the dam. This could rotate to follow the sun for a 20% increase in solar efficiency.
8. The raising of the BD & the new Blue Valley Dam will quadruple the water storage for irrigation, drought proofing and provide substantial new acreage of suitable farmland for drought displaced farmers.

Construction Suggestions:

A) Go out to the world, including all pension funds, etc. for an EOI proposal call like those for major toll roads, privatized airports or seaports, for a Design/Build/Operate requests for a Pumped Hydro development on the Burdekin, including:

1. Provision of a 50/80-year lease on the sites including the Dams.
2. Could be \$X per GI of the Q1 water used through the Blue Valley power station, \$Y for the Q2 through the BD power station, less \$Z per GI for the Q3 of water that is pumped back up to the BD. Starting 5 Years. from date of contract, with a penalty of 30% for ALL water not used for power generation after 5 years from date of contract or letter of intent.
3. Includes for all ANCOLD upgrades required for the Burdekin Dam complex.
4. Sun Waters to have joint control of the Burdekin Dam design / operation, with a Qld. Government appointed and as agreed to by the successful proponent of an Expert Design / Technical Review Panel as Arbitrator.
5. 50% of materials for construction must be locally sourced.
6. 75% of labour used in the construction must be locally sourced.
7. Includes no landside development, all of which will be totally controlled by the Qld Government.
8. All foreshore installations, except those required for the dams' maintenance, will be restored environmentally or revert to Sun Waters for their discretionary use.
9. The North Australian Infrastructure Fund can contribute up to \$1B through Sun Waters on a shared equity/ownership basis, if required.

B) Construct as a normal Government owned project through Sun Waters, financed by the Qld Government with supplemental funding from the Northern Australian Development Fund.