

## One thing we have learnt this week – hydropower in Dubai

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The last thing I think about when thinking about the middle east is

hydropower in Dubai, or anywhere in this region for that matter. Dubai to me is large skyscrapers, lots of motorways with people driving large cars, shopping malls and tourists having picnics on sand dunes. Its not the first place in the world I would think about for hydropower. In fact its the last place. However this week I have learnt that there are two schemes mooted for a reservoir in Dubai. I must admit that I believed that most water in the middle east came from underground aquifers which are probably running out. But people need to drink and there is an existing reservoir on the island of Hatta. This is an unusual situation for the reservoir since its both an island and an [exclave](#) in United Arab Emirates territory. Where the water goes at the moment is a bit of a mystery to me. However an existing reservoir exists fed by springs and rainwater. It does rain in the middle east deserts - just [not very much](#). There are other ways for water to gather and form springs though at night the temperature falls to near freezing point (an example of the greenhouse effect in operation). At this point the atmosphere cannot hold its previously saturated moisture and it precipitates on rocks sand etc. Its goes underground and forms aquifers and springs depending on the local topography. The middle east is joining the renewables revolution. The proposed hydropower in Dubai is to be linked with wind and solar power. It will be a pumped storage scheme is a proposed capacity of 400MWp. Solar power will be used to pump the water up the hill. The dam currently exists and will be converted to pumped storage from merely water storage. How this will affect the existing water use is unclear. Dams in the tropics are net contributors to global warming due to the release of methane from bacteria in the sediment at the bottom of the reservoir. Since this dam already exists this objection does not apply and looks like a good idea to me. With mountains down the western side of Saudi there is obviously more potential for hydropower than you would think in this region. All the countries now have renewable programmes but are still very wedded to oil and gas. Neil

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