Renewable Energy as Post-Mining Land use in Queensland

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# ABSTRACT

A baseline assessment of post-mining land use (PMLU) in Queensland concluded that in the Bowen Basin and Surat Basin, renewable energy produced by solar and wind had vast potential, but the pathway to implementation was not clear. This project aimed at examining how renewable energy projects could be set up on a mining lease, rather than adjacent to it or as an ancillary later use for post-relinquishment land, and be accepted as a productive post-mining land use by regulators and stakeholders.

A thorough review of the legal instruments and approval processes demonstrated that if a mine were to nominate renewable energy as PMLU, it would need to embark on a complex and potentially lengthy approval process. There are four pathways, depending on the land tenure. For all pathways, numerous approvals are required and there is no entity coordinating them, at either Federal or State level. It can be argued that the difficulties inherent in obtaining the approvals via each pathway mean that no pathway holds a viable option to have a renewable energy facility as a PMLU, as opposed to a use that is ancillary to a PMLU and independent of the previous mining activity.

The potential for implementing renewable energy projects on mine sites was tested by applying a multi criteria analysis to land use data collated from three case study sites. Several financial indicators of solar and wind farms were calculated. Results indicated that wind farms were unlikely to be suitable on a single mine, despite generating financial returns, as the extent of disturbed land available is not sufficient to support installation of several wind turbines. Several mines would need to collaborate to install a utility-scale wind farm. Conversely, solar farms are suitable on a single mine, but their financial returns are uncertain.

There is a requirement to engage with regulators to discuss how regulatory frameworks could be updated to encourage adoption of renewable energy as post-mining land use, and to consider closure completion criteria adapted to the installation of renewable energy facilities, particularly in relation to landform design intent. In addition, the availability of financial schemes to support installation of solar plants should be investigated.