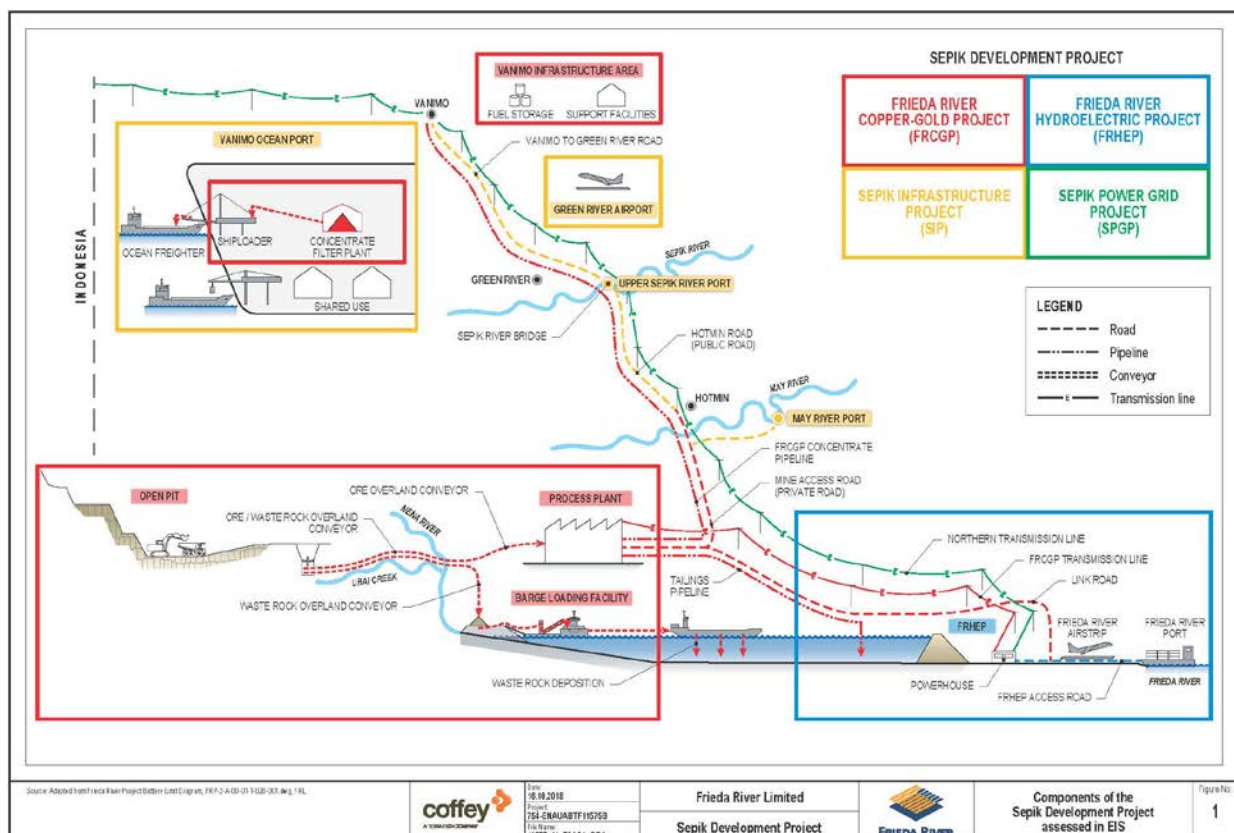


Impact assessment for a resource and regional development project

Kristen Hall (kristen.hall@coffey.com, Coffey Services Australia Pty Ltd), Daniel Moriarty (daniel.moriarty@coffey.com, Coffey Services Australia Pty Ltd) and Michael Hawkins (michael.hawkins@panaust.com.au, PanAust Limited)

Introduction

The Sepik Development Project proposes a shared-use infrastructure model to deliver widespread benefits and an enduring contribution to Papua New Guinea's (PNG's) development. The Frieda River Hydroelectric Project and the Frieda River Copper-Gold Project commercially underpin the Sepik Development Project and these are supported by the Sepik Power Grid Project and the Sepik Infrastructure Project (Figure 1).



The proposed Frieda River Copper-Gold Project is located in a remote area of PNG and is one of the largest known undeveloped copper resources in the world. Previous feasibility studies approached the development as an enclave mining project where supporting infrastructure would predominantly be used solely for the purpose of the mine. However, the extremely remote location and complete lack of existing infrastructure posed a challenge to development and despite fifty years of investigation by various companies, an economically viable project proved difficult to define. Frieda River Limited has chosen an alternative, innovative approach, deliberately moving away from the enclave mining model to propose a shared use infrastructure model that aligns with the PNG Development Strategic Plan 2010-2030. This approach not only supports a commercially viable mining project but also presents a transformative development opportunity for the underdeveloped Sepik region of PNG. The shared-use or enabling infrastructure includes:

- An international ocean port close to Asian markets in north-western PNG.
- New and upgraded regional roads connecting two provinces in rural PNG, providing access to isolated villages and enabling public transport and commercial ventures along a route that has no current transport infrastructure.
- Upgraded regional airport at Green River allowing for commercial air services to population centres such as Vanimo, Wewak and Mount Hagen that facilitates tourism, fresh produce distribution and employment opportunities.
- A new electricity transmission line from the mine area to Vanimo that has the capacity to provide a reliable supply of clean and sustainable power to regional industry and communities.

PNG Development Strategic Plan 2010-2030

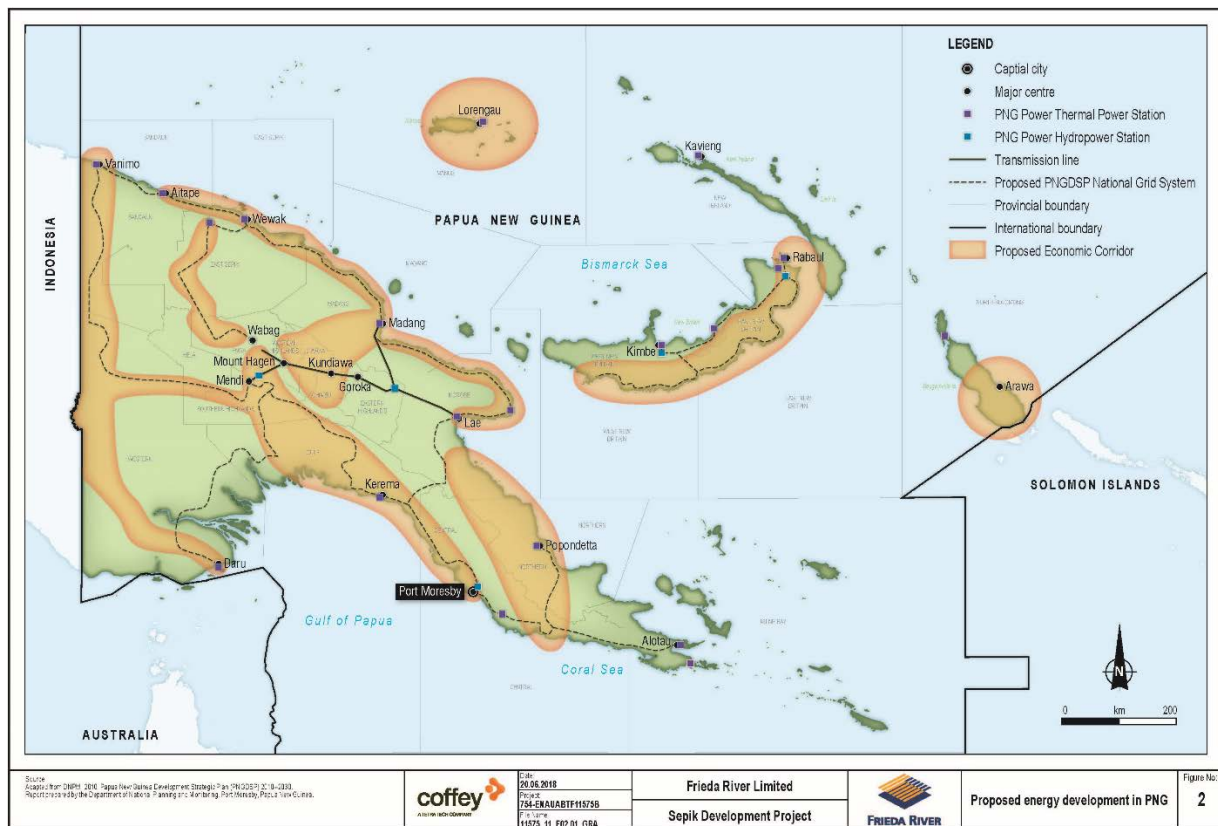
The PNG Development Strategic Plan 2010-2030 (DNPM, 2010) sets out to provide direction in policy making to achieve the goals of Vision 2050. Vision 2050 describes the country's long-term strategy and reflects the aspirations of Papua New Guineans, with the goal that PNG will be ranked in the top 50 countries in the United Nations Human Development Index by 2050 (NSPT, 2009). As at 2015, the country was ranked 154 out of 188.

One of the central themes of the PNG Development Strategic Plan 2010-2030 is to advance the PNG economy beyond the mining and petroleum sectors. There is a focus on creating the enabling environment for investment and economic participation through the construction, operation and renovation of physical structures that provide a platform for most other economic activities. This includes telecommunications, electricity, water and waste services, roads and public works programs, ports and airports, shipping and aviation services. The Sepik Development Project provides an enabling environment for the investment and economic participation envisaged in the Plan that is unlikely to eventuate in this part of PNG without the support of a private development.

The export transmission line aligns with the Border Corridor economic region for the Western, Southern Highlands and West Sepik provinces identified in the PNG Development Strategic Plan 2010-2030 (Figure 2). It is envisaged that the Frieda River Hydroelectric Project and Sepik Power Grid Project will assist in supplying power to northwest PNG and its 100-plus years life enables a reliable, renewable supply of power long after the thirty-three-year Frieda River Copper-Gold Project has closed. The development of the infrastructure corridor will improve the viability of regional industry including agroforestry and palm oil operations by providing reliable access to markets, lower cost power and communications.

Development of the economic corridor will promote the bilateral objectives of PNG and Indonesia to develop the border area and enhance cross-border trade, investment and broader cooperation.

Aligning the Project with the objectives of the PNG Development Strategic Plan 2010-2030 brings mutual benefits to the national and provincial governments, the community and the developer through accelerating the implementation of the Plan to deliver the associated benefits faster than would



otherwise be likely if the plan was to rely on public funding, improving the commercial viability of the project and potentially increasing government and community support for the development beyond that of a typical mining project.

The Sepik Development Project will provide the enabling infrastructure, but government or other commercial entities will need to participate to maximise the benefits to the region; it cannot all be proponent-led and funded. For example, the Frieda River Hydroelectric Project and Sepik Power Grid Project will make power available to the region, but a power distributor will need to invest to connect the communities to the grid. In addition, any resource development is only operational for a finite period of time; the proposed mine life for the Frieda River Copper-Gold Project is 33 years but has credible potential for extension beyond this time. Once the mine closes, third-parties will be required to take over the management and maintenance of the shared-use infrastructure if it is to remain operational. The shared-use model increases the likelihood of this occurring by encouraging other users of the infrastructure during the mine life and providing a financial incentive to do so, therefore making the transition to post-closure realities easier at the end of mining.

Environmental impacts

Aligning resource development projects with regional development goals can also reduce environmental impacts. In a developing country such as PNG, the Government has limited resources and expertise to conduct strategic impact assessments to understand and manage the cumulative impacts of multiple projects across a region. While an Environmental Impact Statement does assess cumulative impacts of other proposed projects, there is no regulatory requirement for this and typically proponents do it through alignment with relevant international standards. The process of completing the cumulative impact assessment can be a difficult process due to the limited, or poor quality of information available, particularly for smaller projects that are not required to release information publicly. This generally leads to projects being approved independently without consideration of cumulative environmental impacts or opportunities for collaboration or alignment of the projects, for example, sharing infrastructure or supporting common landowner companies or suppliers.

Aligning the needs of the Sepik Development Project with the PNG Development Strategic Plan 2010-2030 potentially reduces duplication of infrastructure. Ultimately this can reduce environmental impacts in the region through:

- Reduced clearing of land due to smaller infrastructure footprints.
- Potential for improved environmental management as industry is sharing the cost of managing and maintaining infrastructure.
- Enabling the development of a clean and sustainable hydroelectric power source for the region.

The attainment of regional development goals can also result in a trade-off with socio-economic and environmental impacts. Social infrastructure such as roads and power are desirable by communities, with the potential to significantly improve education, health, trade, village amenity and community infrastructure in a remote area of PNG. However, this can result in negative socio-economic impacts such as in-migration and associated environmental impacts through increased demand for land and natural resources. In the context of a regional development project, the Environmental Impact Statement needs to present an honest and transparent discussion on both the socio-economic benefits and the associated negative socio-economic and environmental impacts to allow the Government and the community to make an informed decision.

Conclusion

In a country such as PNG where there are limited resources available to conduct strategic impact assessments for regional development, the Sepik Development Project demonstrates how industry can align the needs of a resource project with the development goals for the region to maximise the mutual benefits to Government, communities and the developer.

References

- DNPM. 2010. Papua New Guinea development strategic plan 2010–2030. Report prepared by the Department of National Planning and Monitoring. Port Moresby, Papua New Guinea.
- NSPT. 2009. Papua New Guinea vision 2050. Report prepared by the National Strategic Plan Taskforce for the Independent State of Papua New Guinea. Waigani, Papua New Guinea.