

عنوان مقاله:

GIS-based Optimal Route Selection for Oil and Gas Pipelines in Uganda

محل انتشار:

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خلاصه مقاله:

The Ugandan government recently committed to development of a local refinery benefiting from recently discovered oil and gas reserves and increasing local demand for energy supply. The project includes a refinery in Hoima district and a 205 kilometre pipeline to a distribution terminal at Buloba, near Kampala city. This study outlines a GIS-based methodology for determining an optimal pipeline route that incorporates Multi Criteria Evaluation and Least Cost Path Analysis. The methodology allowed for an objective evaluation of different cost surfaces for weighting the constraints that determine the optimal route location. Four criteria (Environmental, Construction, Security and Hybrid) were evaluated, used to determine the optimal route and compared with the proposed costing and length specifications targets issued by the Ugandan government. All optimal route alternatives were within 12 kilometres of the target specification. The construction criteria optimal route (205.26 km) formed a baseline route for comparison with other optimal routes.

کلمات کلیدی:

GIS, MCE, LCPA, Oil & Gas, pipeline routing

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