Analisis pemilihan teknologi yang berdampak terhadap biaya pembangunan dan operasi-pemeliharaan pada kereta cepat Jakarta-Surabaya = Technology selection analysis that effects initial and operational maintenance cost in high speed Jakarta-Surabaya

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Abstrak

Kereta cepat merupakan salah satu mega proyek yang direncanakan oleh pemerintah Indonesia di antara Jakarta dan Surabaya. Untuk menghasilkan biaya pembangunan dan operasional ? pemeliharaan yang optimum, diperlukan optimasi pemilihan rute dan pemilihan teknologi yang berupa sarana dan prasarana kereta cepat. Penelitian ini menggunakan analisis life cycle cost dan in - depth interview. Dua rute utama yang dibahas adalah rute - 1 sepanjang 958.6km dan rute - 2 sepanjang 868.5km.
Hasil penelitian menunjukkan pemilihan teknologi kereta cepat Jakarta - Surabaya terdiri atas rolling stock berjenis electrical multiple units, dan prasarana berupa struktur jalur ballasted, persinyalan Continuous Train Control with Fixed Block, pelistrikan 25kV AC, dan infrastruktur pendukung (jembatan, viaduk, terowongan dan stasiun). Biaya pembangunan kereta cepat Jakarta - Surabaya berdasarkan pemilihan teknologi di atas untuk di rute - 1 sebesar Rp 187.542.564.094.771,- dengan biaya operasi - pemeliharaan sebesar Rp19.222.006.189.437-, serta biaya pembangunan kereta cepat Jakarta - Surabaya di rute - 2 sebesar Rp 170.364.733.318.068,- dengan biaya operasi - pemeliharaan sebesar Rp 17.401.894.210.191,-.
.....High - speed train is one of the mega project that has been planned by Indonesia?s government between Jakarta and Surabaya. In order to generate an optimum initial and operational - maintenance cost, it is required an optimation route selection and technology selection analysis such facility and infrastructure of high ? speed train. This research will be approached with life cycle cost analysis and in depth interview. There are two main routes that have been analyzed in this research, namely the first route throughout 958.6km and the second route throughout 868.5km.
The result of this research shows that technology selection for high - speed train in Jakarta Surabaya for facility is electrical multiple units rolling stock, and for infrastructures are ballasted railway structure, continuous train control with fixed block signalling, 25kV AC electrification, and supported infrastructure (bridge, viaduct, tunnel and station). The result of initial cost for high ? speed train in Jakarta ? Surabaya based on technology selection for the first route is Rp 187.542.564.094.771,- with operational - maintenance cost is Rp19.222.006.189.437- as well as the initial cost of high speed train Jakarta - Surabaya in the second route is 170.364.733.318.068,- with the operational ? maintenance is Rp 17.401.894.210.191,-.