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(57) Abstract :

The present invention discloses a computer model for smart energy-efficient transportation planning comprising a data acquisition unit (101), AI-based predictive engine (102), energy optimization module (103), multimodal integration unit (104), real-time traffic monitoring system (105), and simulation and policy support module (106). The invention integrates predictive analytics, optimization algorithms, and real-time adaptability to minimize energy consumption, reduce congestion, and enhance multimodal efficiency. Experimental validation confirms reductions in fuel consumption, emissions, and overall travel inefficiencies, making the invention a scalable and sustainable framework for modern transportation systems.

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