

Sustainable plastic waste management, good roads-good economics-good environment: Himachal Pradesh: A case study

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Abstract

The project of sustainable plastic waste management: Concept to policy and policy-implementation 2011 and beyond, which won National Award Under Good Governance Practices, (for 2009-10) in 2011, conceptualized in 2001 was a need felt innovation in a Himalayan state having fragile ecology and environment with globally the 8.3 billion tons of plastic produced, 6.3 billion tons have been discarded. Every year, nearly 13 million tons of plastic wastes are added to oceans globally. Initially with three-pronged strategy (3Ps becoming most important) of persuasion, participation (People, Political and Permanent executive), Penal action paid rich dividends aiming at (4Rs) and SDG goals, 2016 Less Plastic world UNEP, 2018. It got propagation, replication, national-global recognition with metropolis, bigger ULBs seeking support for replication, ultimately forcing State, through ministry of road transport, highways, shipping GOI, making mandatory use of plastic waste in all road constructions (9th November 2015), conceding to the untiring efforts of principal author in public interest. The plastic waste based roads having scientifically proven record are not only 30% more durable compared to conventional bituminous roads but do save 34K-40K per Km consuming 1-ton plastic waste. The coating of plastics over aggregate improves impact, Los Angeles abrasion and crushing value with the increase in the percentage of plastics. The extracted bitumen showed almost near value for Marshall Stability. The entire road reported good skid resistance and texture values. The unevenness index values of 3000 mm/ km have not developed any potholes, rutting, raveling or edge flaw, even though these roads are more than four years of age. The application plastic waste to poly fuel/gasolysis is yet another multi utility, cost effective, eco-friendly mile stone achieved, in rendering economically viable, scientifically proven, socially acceptable, solution to weed out the menace of plastic waste. The installations of PET bottle crushers, water ATMs, making Swatch Bharat Abhiyan, a dream come true.

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Biography

Rakesh Kapoor has completed has experience in teaching and research in Earth and Environmental Sciences in EIAs QCI/NABT approved FAE for power sector, cement, mining and

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