Creating a More Sustainable Future through Locomotive Design

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Goal

Improve the efficiency of locomotive shipping 300 miles, meet the new EPA emission requirements, carry a minimum of 175000 tons of freight all while remaining within reasonable cost range.

Background

Investment Data

Emissions Data

Selection

Rating Method

Ranking Criteria

Options

Rating Method

Systematically ranked our 33 options from .7 to 10

Rating Method

After-treatment

Emissions - 5

Tier II to Tier III

Cost - 4

Tier II to Tier IV

Freight - 1

Mix-Match Tier III and Tier IV

Conclusions

A combination of 22 Tier III and 22 Tier IV level locomotives will yield a 175000 ton freight capacity with 100 kg PM and 5050 kg of NOx of emission per 300 miles. This upgrade will cost 71.5M