A supply-driven inventory routing problem

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Overview

We consider an inventory routing problem (IRP) in which routing and inventory replenishment decisions are dictated by supply rather than demand. This problem emanates from logistics related to biogas distribution in which biogas is transported in containers from many suppliers to a single facility using a single vehicle. We propose a novel and compact formulation for the supply-driven IRP that enables exact solving realistic instances. Furthermore, our model incorporates closed-loop distribution and bidirectional flows of containers. Each container also acts as storage capacity at a supplier and holds continuous inventory contents. We perform computational experiments to derive insights on the behavior of optimal schedules.

Methods

We employ a Mixed-Integer Linear Programming (MILP) approach.

Results

No results have been obtained yet.

Conclusions

No conclusions have been obtained yet.

References


Coelho, Leandro C., Jean-François Cordeau, Gilbert Laporte. 2014. Thirty years of inventory routing. Transportation Science 48(1) 1–19.


