

# Comments on the specs02.pdf

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In order to assure consistency between the problem formulation and the corresponding model, I would consider replacement of the obviously incorrect inequality (9) by:

1. Equation defining the amounts of each of the fuels as a function of the activities of the applied technologies:

$$\sum_{i \in I} a_{ji} \cdot ACT_i^t = x_j^t, \quad j \in J, t \in T \quad (1)$$

where:

- $j$  denotes fuel type,  $J = \{gasoline, diesel\}$ ,
  - $a_{ji}$  relates the amount of  $j$ -th fuel produced by the unit of  $i$ -th ACT,
  - $x_j^t$  stands for the amount of  $j$ -th fuel produced jointly by all considered technologies.
2. Adding the supply-demand constraint, specification of which depends on the chosen definition of demand. Here we can consider one of the following two options:
    1. If the demand is given for each fuel type, i.e., as  $d_j^t$ , then:

$$x_j^t \geq d_j^t, \quad j \in J, t \in T. \quad (2)$$

2. If the demand is given for a linear aggregation of  $d_j^t$ , e.g., by coefficients  $\alpha_j$  conforming to:

$$0 \leq \alpha_j \leq 1, \quad \forall j \in J; \quad \sum_{j \in J} \alpha_j = 1. \quad (3)$$

In such a case constraint (2) shall be replaced by:

$$\sum_{j \in J} \alpha_j x_j^t \geq d^t, \quad t \in T. \quad (4)$$