

Tiny model (id 91)for WS testing

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Feb-01-2013, 13:42

Introduction

This draft summarizes a sample of SMS and data specified for testing the WSs; therefore it is composed of elements needed for testing functionality of the initial set of WSs, Thus the sample does not attempt to represent an actual model and its data.

The initial testing of WSs focuses on:

- Handling SMS
- Interactive data definition and modification.
- Upload data from XML-templates
- Upload data from a data-wrapper testing application.

The SMS and all data are handled in the DW (slightly modified version of the DW presented in Trondheim).

The SMS summarized below has been specified a dedicated prototype for interactive SMS specification. The data has been partly uploaded using the XML-templates, partly entered and/or modified interactively, and partly uploaded from the data-wrapper testing application.

Notation and data sample

Some ids/labels of sets and parameters are taken from the SMS of the model uploaded by Emilio on Jan. 26 to the eroom. Labels of other entities are defined using a convention that helps to identify the role of the entity by the corresponding first letter of the id:

- x - for decision variables
- y - for outcome variables
- z - for auxiliary variables
- other letters imply that the corresponding entity is a parameter.

Some data elements are taken from the screen samples uploaded by Martin on Jan. 30.

SMS

The following convention is used:

- A single upper-case letter denotes main sets
- A single lower-case letter denotes an index of a member of the corresponding set; e.g., $i \in I$ are indices of set I
- First letter of a subset indicates the parent main set
- Subscripts of indexed subsets, parameters and variables denote the corresponding indices.

Sets

I : energy technologies, i.e., $i \in I$.

Subsets:

- $IGen$: Energy generation technologies (have energy input and outputs).

K : energy types, i.e., $k \in K$.

Subsets:

- $Kinp_i$: Input energy types, $i \in Igen$
- $Kout_i$: Output energy types, $i \in Igen$

T : short-term period, i.e., $t \in T$.

P : pollution type, i.e., $p \in P$.

Parameters

$demDes_{kt}$: desired demand for k -th type of energy in t -th period

$demMin_{kt}$: minimum demand (level that must be supplied) for k -th type of energy in t -th period

$emMax_p$: maximum allowed emission level of p -th type of pollution

$emInt_{ip}$: emission intensity (amount/use) of p -th type of pollution by i -th technology

Variables

Variables are just place-holders; will be defined later, thus not to be implemented in the SMS now

Decision variables:

$xUse_{kt}$: demand for k -th type of energy in t -th period

Outcome variables:

$yCostTotal_{kt}$: demand for k -th type of energy in t -th period

Auxiliary variables:

$zCostGen_{kt}$: demand for k -th type of energy in t -th period