

# ANSWER-MARKAL Recent Enhancements

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## Recent ANSWER-MARKAL Enhancements - 1

### ◆ **ANSWER-MARKAL version 6.3.1 Software Update (released end Feb. 2010)**

- New AnswerV6.exe v6.3.1 providing quite a few enhancements.
- Latest version of ETSAP GAMS-MARKAL code, version 5.9a, also distributed.

### ◆ **ANSWER-MARKAL version 6.3.1 Enhancements**

- New Lumpy Retirement of Capacity model variant: mathematics specified by Dr Ken Stocks of Intelligent Energy Systems (IES), Sydney; GAMS implementation and ANSWER enhancements by Noble-Soft Systems.
- Technology Filters allow filtering by Commodity Name and/or Commodity *Description* and/or Commodity *Set Memberships*.
- Max. length of Scenario and Case Names can be increased to either 12 or 16 characters, New Database facility allows Scenario and Case Names to be 8 or 12 or 16 characters.
- Case Management facilities allow New Case, Copy Case, (full) Edit Case.
- Alternative "New" format available for "File, Import Model Data from Excel", in particular with Items data specified in a much simpler fashion than previously.
- "File, Export Scenario Data to Excel" recoded to run many times faster than previously.



## Recent ANSWER-MARKAL Enhancements - 2

### ◆ ANSWER-MARKAL version 6.4.1 Software Update (released end July 2010)

- New AnswerV6.exe v6.4.1 providing a small number of enhancements.
- Latest version of ETSAP GAMS-MARKAL code, version 5.9b, also distributed.
- “Under the hood”, and invisible to most users, quite a bit of work undertaken to create first AnswerV6.exe supporting both standard ANSWER-MARKAL databases, and also special Library Region ANSWER-MARKAL databases used by International Energy Agency for their Energy Technology Perspectives (ETP) model.

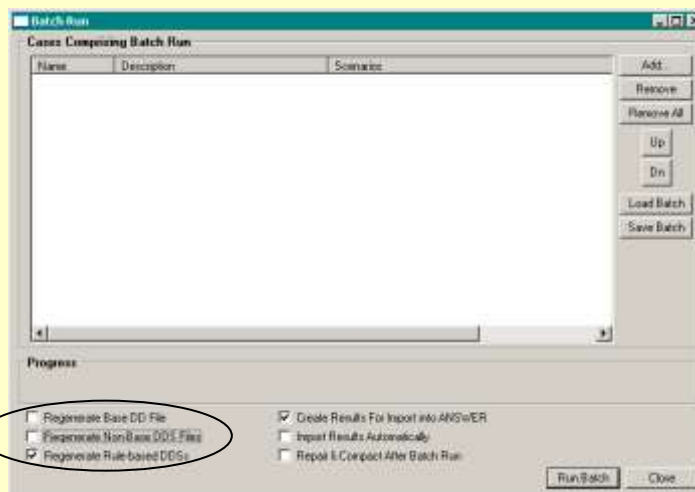
### ◆ Batch Run Enhancements September 2010, to better handle US EPA multi-region model, with very large number of Rule-based constraints (>4000)

- “Temporary” tables inside ANSWER database used to create Rule-based constraints were growing in size so rapidly that Batch Run with >6 runs would fail because ANSWER database would hit Microsoft Access 2 GB limit. Rate of growth in size reduced.
- “Regenerate BASE DD/non-BASE DDS Files” checkboxes added to Batch Run form to allow user to avoid unnecessary regeneration of DDs/DDSs and so speed up Batch Run.
- “Repair and Compact Database” facility enhanced so that prior to Repair and Compact being initiated, all records in all “temporary” tables are deleted.



## Recent ANSWER-MARKAL Enhancements - 3

“Regenerate BASE DD/non-BASE DDS Files” checkboxes added to Batch Run form



## Recent ANSWER-MARKAL Enhancements - 4

### ◆ *Batch Run Enhancements - revisited November 2010*

- Much improved handling of growth in size of “temporary” tables in ANSWER database used to create Rule-based constraints.
- Now possible for Batch Run to comprise as many runs as user wishes, even for large multi-region models with large number of Rule-based constraints, without hitting Microsoft Access 2 GB limit. (Assuming results will not be imported back into ANSWER)
- New AnswerV6.exe (v6.4.12) that implements this improved handling will be distributed to ANSWER-MARKAL users shortly after Cork Meeting.

