

VEDA-FE Release Notes

KanORS Consulting Inc.

Version 2.1.9 [September 14, 2006]

- Commodity attribute tables (COMEMI, COMAGG and PRCCOMEMI) can now be created in SubRES files.
- Technology characterization (PCG, TSLVL and PRC_VINT) are not inherited across tables anymore.
- Debug: update of FLO_DELIV from scenario files was producing incomplete data.

Version 2.1.88 [September 4, 2006]

- Debug: STG_CHRG and STGIPS did not work.
- The support of attribute CUM has been handed over to the GAMS code. No reprocessing will be needed if the time-periods are redefined.

Version 2.1.87 [August 28, 2006]

- Debug: EFF and CEFF did not work with MAT.

Version 2.1.865 [August 24, 2006]

- Some field sizes have been changed in the active database template. You just need to download the updates; no need to do any data reprocessing apart from reimporting any UC Scenarios.

Version 2.1.86 [August 22, 2006]

- ~TFM_GAMS: <name of GAMS program> this tag is supported in scenario files; processed after the FILL tag, before UPD and INS. The idea is to be able to read information via FILL tables, process it with a GAMS program and write the output in the same scenario file, and send it to the model via INS tables. The GAMS program is expected to be in the SuppXLS folder. Scen_DemProj of the NEEDS project provides a full working example of this tag.
- Clicking the frames on graphic view form opens the corresponding folder in windows explorer.
- New table ~DRVR_Allocation has been introduced in Demand scenario files. This can be used to associate drivers and sensitivity series with demands.
- Active database is automatically recreated when VFE_Work is recreated
- Whenever VEDA-FE is pointed to a template folder, it aligns the structure of all MDB files in the databases folder, and the active database, with the corresponding databases in the VFE_Tmpl folder. Now it will not be necessary to start from scratch when the contents of VFE_Tmpl are updated.
- Various option settings are now stored in the template folder.
- Debug: column headers Comm-IN-A and Comm-OUT-A were not working for subRES files.
- ~PRCCOMEMI: this table can be used to generate the attribute FLO_EMIS(REG,ALLYEAR,PRC,CG,COM,S). Technologies can be specified using

wild cards, but comma separated entries are **not** supported. See the EMI tab in NEEDS templates for an example.

- ~ADRATIO_FLOTYPE:<commodity type>[,<commodity mask>] This tag determines the commodities for which UC_FLO attributes are to be generated. In addition to the type (NRG/ENV/MAT/DEM), it is now possible to (optionally) specify a mask using * and/or ? as wild cards. For example, ~ADRATIO_FLOTYPE:NRG, *ELC* will generate UC_FLOs for all commodities of type NRG which have “ELC” anywhere in the name.
- VEDA-FE will prompt the user to delete the active database after any subRES import. This is because reimporting a subRES into an existing database significantly slows down the VEDA-TIMES conversion process. See the known bugs and workarounds section at the end of this doc.
- Efficiency improvement in the VEDA to TIMES conversion process (thanks Antti!).

Version 2.1.65 [May 23, 2006]

- Fuel shares through user-constraint scenarios. See supplementary documentation.
- Default scenario ordering enhanced

Version 2.1.6 [May 7, 2006]

- Time slices and time periods: when setting up a database from scratch, the most recent time period and timeslice settings will be used automatically. Buttons on the import form can be used to modify these settings.
- Active database simplification: a template folder is allowed only one active database now, which is named automatically based on the location of the templates. So, now the “model” is identified uniquely by the template folder.
- Dummy imports created more cleanly (thanks Antti!): only three processes created per region: IMPNRGZ, IMPMATZ, and IMPDEMZ.
- Minor EFF improvement in reading FI_Comm tables.
- Debug: vintaging declarations were not working properly in some cases
- Debug: SubRES delete: some entries were not handled properly.
- Debug: Vintaging indicator on process information was not updated. But this will still not be updated if the vintaging declaration comes from a scenario file.
- Scenario Zyssettings (if it exists) is imported at the end of each import process, even if “import scenarios” box is not checked.
- FloShare QC checking has been disabled, as the current TIMES code (on the www now) does a better job.
- Some options have been removed from the Advanced functions menu.
- VEDA-FE automatically adds DEM output for DMD techs; this functionality has been cleaned-up as follows:
 - Any process declared as a DMD that does not have at least one DEM commodity as output will be given an output of 1 for the “matching DEM”
 - Matching DEM: that DEM commodity that has the maximum number of characters in the beginning of the process name. For example, if there two of the DEM’s are TT and TTP, the process TTPDST00 will be assigned a unit output of TTP, provided it has no existing DEM

output. Note that the topology definition (Comm-OUT col) is checked; parameter definition is not compulsory (=1 by default).

- Scenario name: no longer comes from the ~scenario tag... it is taken from the file name. Specifically, it will be interpreted as follows: Sce*_<ScenarioName>.XLS.
Examples:
 - Sce_BaseExtra_V1 [scenario name: BaseExtra_V1]
 - Scenario_BaseExtra1 [scenario name: BaseExtra1]
- Trades: the entire functionality has been completely revamped. The following options are available now:
 - Define trade links: Three different types can be defined: unidirectional, bidirectional, and markets
 - Create scenario: all parameter information will now be in scenario files. there can be more than one.
 - Import Scenario: after creating scenarios, they need to be imported.
 - Unlike regular scenarios, they don't need to be reimported when a new active database is created (as they are stored in Trades.MDB). they are lost only when explicitly deleted.
 - Note that I have only tested the attributes in the DEMO file... I recommend that you don't try any other IRE_* for sure, and the others when you are running high on patience. And please report and successes/failures on this front to me.
- New fields in scenario files:
 - Other_Indexes: this is used to handle the following indexes, depending on the parameter: CommGrp, ImpExp, InOut, Region, Region2.
 - In trade scenarios, double-click will present options, but in regular scenarios, entries have to be made manually
 - AllRegions: this is used for attributes that don't have a unique region index. IRE_BND is one example.
- Fill table in scenario files: this is a very major development, which will be extremely useful in projects like NEEDS and EFDA.
 - Motivation: one has access to existing information via UPD tables, but it is not "transferable". Meaning, one can't insert attributes for Tech2, based on attributes for Tech1, for example. A typical application in EFDA and NEEDS projects would be the new Industrial technologies, where the existing techs need to provide input parameters for the techs coming from the subRES.
 - Use: (see the example in DEMO TIMES model) one can pull whatever values one wants in a TFM_FILL table, and then create a TFM_INS table that is linked to the FILL table!!
 - Details: The TFM_FILL table displays useful information about the fill operation by coloring the Region and Scenario cells:
 - Color Signification for the Region Cells:
 - i. **Blue** color represents only one record found and
 - ii. **Purple** color represents that more than one records were found for the specified parameter and its dimensions, while filling the region value in the relevant row.

one record found
More records found

- Color Signification for the Scenario Cells:
 - i. Blue: This color represents more than one Scenario names found.
 - ii. Red: This color represents Scenario name mentioned by the user is not found.
 - iii. Black: This color represents that only one Scenario name is found.

more than 1 scenarios found
1 scenario found
invalid scenario

- If the Scenario name written by the user is Invalid or multiple scenarios are found for any of the rows, the scenario file will be opened after the fill operation.
 - The TFM_FILL table is also available in subRES transformation file. The only difference is that it is populated with numbers from the BASE scenario.
- User-Defined Commodity Groups: VEDA now supports user-defined CGs.
 - Creating: via ~TFM_COMGRP tables.
 - There can be multiple tables in one file.
 - All entries are made in the BASE scenario, irrespective of the scenario where these are created.
 - All existing UD CG's are deleted when a file with this table(s) is encountered.
 - So, I recommend that all UD CG's are created in a single scenario file.
 - Viewing: they are visible in Advanced Functions//CommGrp Master
 - Using: They can be used (manually) in the Other_Indexes Column for Regular scenarios.
- Share/Share+:
- MODLYEAR: dump cleaned-up.

Version 2.0.707 [March 9, 2006]

- For TIMES, only the interpolation setting (=2) is generated for NCAP_BND for technologies with non-zero stock declarations in the base-year templates. This replaces NCAP_BND=0 which was generated for all milestone years earlier.
- If the only RESID specification is in the base year, then a value of 0 is automatically inserted for year = base year + NCAP_TLIFE.

Version 2.0.706 [Feb 3, 2006]

- Inheriting conventions from the MARKAL world, VEDA used to expect exogenous IRE processes (defined as MIN/EXP/IMP/RNW) to carry the commodity name with them. This has been relaxed for TIMES. Now, only the first three characters are restricted to the above list.
 - The VEDA-FE database templates have also been updated

- You will need to reimport all templates with exogenous IRE processes (typically only in the UPS/SUP templates), else there will be fatal errors in the dd file.

Version 2.0.705 [Feb 2, 2006]

- VEDA used to delete topology entries for p-c with 0 input/output for all specified years. This has been discontinued for SubRES, as it is possible that some non-zero's are introduced thru the transformation file.
 - I should probably check again after transformation! (later)
- SubRES transformation instructions can now be on multiple sheets in the workbook.
- A version check has been added for the templates update database. This is valid for the following projects only: NEEDS, EFDA, NEMARKAL.

Version 2.0.704 [Feb 1, 2006]

- COM_AGG reinstated.

Version 2.0.703 [January 26, 2006]

- Fine-tuning of the IRE Adjustment interface on the solve form.
- Debug: timeslice dimension was missing from the attribute IRE_PRICE
- The installation has been refreshed to reflect the new folder structure. Not compulsory to use if you have been using \geq version 2.0.70, and have refreshed your database templates.

Version 2.0.701 [January 11, 2006]

- VEDA got very confused if the active database or active template folder went missing.
- The update tables (~UPD) in scenario and transformation files were throwing errors in certain specific cases.

Version 2.0.70 [January 10, 2006]

- Commodity declarations check has been added (to be elaborated)
- Decimal separator check has been added.
- Feedback during import scenarios.
- R1C2 for comm attrib tables: for example, this means that rows have commodity1, and cols have commodity2.
- COM_AGG reinterpreted: temporarily, COM_AGG is used to derive VDA_EMCB and FLO_EMIS entries.
- Major enhancement in the automatic template update procedure; concept of "Project" has been introduced:
 - Can deal with any vintage of templates
 - Comprehensive log of changes made is produced
- Under QC of User constraints, one can now choose to not disable them automatically.
- IRE option on the solve form visible only when applicable. i.e., when one chooses to run with at least one region missing from the full list.

- The database templates have been moved from \database templates\ to \VFE_Tmpl\. For versions $\geq 2.0.656$, they must be downloaded from the KanORS site, and unzipped in VEDA-FE\VFE_Tmpl\ folder.

Version 2.0.657 [December 19, 2005]

- BOTIME is set to 1970 if it turns out to be later than this based on the model data. This is done to make sure that data included in the climate module does not throw \$170s.
- Minor debugs related to the user options.

Version 2.0.656 [December 19, 2005]

- Multi-selected scenarios will be imported in alphabetical order of file names.
- Climate module is functional by default. New option added to choose the calibration year for CO2 concentration.
- All solve form options now stored by the template folder. If the template folder is new, then the most recent settings are used.
- The database templates have been moved from \database templates\ to \VFE_Tmpl\.

Version 2.0.655 [December 17, 2005] (STOCHASTIC)

- Enhancement: VEDA-FE now supports the stochastic programming features introduced in the TIMES code version 2.0.0. Details:
 - A new menu item “Import Stochastic” added in the import scenario menu, which supports all attributes described in the stochastic TIMES doc. Two new columns are added in the regular scenario file: Stage and SOW.
 - The S_* and SW* attributes will be ignored by normal scenario import; the import stochastic option will recognize only these attributes.
 - One should not mix stochastic and non-stochastic attributes in a single scenario, but multiple stochastic scenarios can be defined.
 - The SW* parameters, which define the event tree (without region index) should be put under a new region: “AllREG”
 - Stochastic parameters are not supported by browse yet.
 - Interpolation options are also supported.
 - To use this feature:
 - Define and import a stochastic scenario
 - Check the option “Activate Stochastic” under the “Set Options” button on the Solve form.
- Enhancement: the model variant options are now stored by template folder. If the template folder is new, then the most recent settings are used.
- VDD files are required to be in the SRC code folder now. They already exist in the TIMES code version 2.0.0.
- New user option in the General section: Use SOW for all VD files. This option will produce VD files for deterministic runs with SOW=1; useful if one wanted to import deterministic and stochastic scenarios in the same VEDA-BE database.
- Superfluous set declarations have been removed from the scenario DD files. This has no impact on the results, but the DD files are cleaner.

Version 2.0.65 [December 15, 2005]

IMPORTANT: NEEDS users need to download and unzip the template update file (NEEDS Templates update (V2p1)) in the folder where VEDA-FE is installed.

- Enhancement: Template update – VEDA can now accept a set of instructions and perform simple template updates like correcting/adding/moving formulas or information. (to be elaborated...)
- Enhancement: A new feature “Archive model” has been added in the file menu. Eventually it will create a zip file, but for now it just compacts all databases in the template folder.
- Debug: VEDA to TIMES mapping was not correct if EFF and CEFF were both specified for a process

Version 2.0.646 [December 8, 2005]

IMPORTANT: database templates have been put up as a separate download item. For version 646, you need to unzip them in the \database templates\ folder under VEDA-FE.

- Debug: ACT_BND on IRE processes was being translated into IRE_BND. This had no impact on results though.
- Debug: IRE Adjustments – EPS values were not read properly.
- Debug: Import scenarios from the import form: trade-related attributes were not imported when using this feature. It was ok if the scenarios were imported via the scenario import menu.
- Enhancement: location of VEDA templates can now be declared under user options. This makes it easier to choose a template folder if you store all of them in the same location.
- Renamed the template for active database
- Enhancement: the following options have been added under Import settings in the user options section in tools menu:
 - Check for sheet errors
 - QC of user constraints
 - Check for unexpected negative values of parameters
 - Check for inconsistent activity bounds
 - QC of flo shares
 - Generate vintage bounds for the SubRES techs
 - Create dummy imports for energy/material
 - Create dummy imports for demands
 - Check all excel files and databases for consistency before solving (this has been added in the “General” section)
- Debug: the sheet error checking was throwing an error for empty sheets.
- Debug: an important feature was added to VEDA-FE some time back, but not advertised because of a bug, which has been removed: **double click on the browse screen will open the excel template, and point to the cell where that number**

originated. For transformed numbers, both files are opened, the region-sector template as well as the transformation file.

Version 2.0.64 [November 28, 2005]

IMPORTANT: The zip file includes an MDB, which should go to the \database templates\ folder in VEDA-FE. Make sure to create a new active database for all models after applying this update.

- Enhancement: #Div/0 and #REF errors in the sheets, and 0 values for certain parameters (EFF, START, and LIFE) used to stop the import process. Now, the import process continues, and these errors are popped up in text files. The erroneous cells/parameters are deleted. These error logs are saved in the VEDA-FE\Logs\ folder.
- Debug: dummy imports (for demands) were created only for the last sector that was imported.

Version 2.0.63 [November 24, 2005]

- Debug: the process and commodity set declarations via scenario files were not being applied properly.
- Enhancement: the Import screen now offers the choice to import all scenarios at the end of process, or not.

Version 2.0.62 [November 22, 2005]

- Enhancement: the form “About” under Help menu now shows the name and date/time of the exe in use. The path is displayed as well.

Version 2.0.61 [November 17, 2005]

- Debug: in some cases, demands are not appropriately updated during the import process. this version includes a workaround: perform “Demand Projection” from the demand module after the import is done.

Version 2.0.60 [November 16, 2005]

- Debug: if a form was hidden behind another, trying to open it again resulted in no action. Now the hidden form is visible.

Version 2.0.59

- SAGE-related temp fix.

Version 2.0.58 [November 2, 2005]

- Debug: there was an error while importing all scenarios if the process started with all green.

Version 2.0.57 [November 1, 2005]

- Enhancement: User Constraint QC
 - Extended to examine the interpolated years.
 - The constraints that are identified as being potentially problematic, are disabled automatically. (the message does not reflect this in 2.0.57)
- Enhancement: Activity bound QC
 - The last scenario (alphabetically) is considered for each data element.

Version 2.0.56 [October 24, 2005]

IMPORTANT: The zip file includes an MDB, which should go to the \database templates\ folder in VEDA-FE. Make sure to create a new active database for all models after applying this update.

- Enhancement: Scenario import
 - Scenario file import dialogue now shows only the Sce*.XLS files. If you have named the scenario file not starting with “Sce”, then you can select “All XLS” from the combo “Files of Type”.
 - All Sce*.XLS files in the \SuppXLS folder are automatically imported at the end of import process. These files are imported in alphabetical order of file names.
 - Records added/modified through the scenario import process are available for all subsequent scenario manipulations, even in the same scenario. And in case qualifying records are found in multiple scenarios, the one from the highest order scenario (alphabetically) is taken.
 - Example, we have *.9 for EFF of all techs in set CHP. And then a subsequent declaration of *.9 for EFF of CHP with Comm_IN=ELCCOA. This will result in all non-coal CHP efficiency being *.9, and the coal CHP being *.81.
 - Process/Commodity declarations PRC_TSL, PRC_VINT, COM_TSL and COM_LIM can now be declared in ~INS tables.
 - How it works: write the attribute in the Parameter column, set the technology/commodity filters, and write ANNUAL/SEASON/DAYNITE as the value for *_TSL, Yes/No for PRC_VINT, and FX/LO/UP/N for COM_LIM.
 - Limitation: there is no way to browse these settings right now. The only way to check is to look at the scenario dd file.
 - COM_CUMNET and COM_CUMPRD are now supported in scenario files.
 - How it works: write two years separated by ‘-’ in the Year column.
- Enhancement: QC routines towards the end of the import process:
 - Neg Val: all parameters, except the UC coefficients and elasticities, are reported if they have negative values.

- Conflicting Activity Bounds: if a FX/LO bound is too high wrt to the RESID, CAP2ACT, AF.
 - Limitation: this is only done for the base year, and only for ANNUAL TS at this point. I should probably mine the GDX file for this.
- User Constraints QC: two types of situations are identified and reported
 - For share UC's: When several FX/LO constraints defined on the same BigSet add up to >1.
 - For all UC's: When two constraints are defined on the same set of technologies, and the LO/FX limit exceeds the UP/FX limit.
- The default costs for dummy imports have been reduced to 9999, as very high values were creating scaling problems for the solvers. Users are strongly encouraged to adjust the dummy import costs in a scenario, and carefully watch out for their penetration in the results.
- Enhancement: Enhancement: If a “_Trans” file is mistakenly specified for SubRES import, the file with actual data (same name as the specified one, but without the “_Trans” at the end) is selected automatically.
- Enhancement: VEDA now remembers your selection to generate vintage bounds or not, on the import form.
- You can choose to not do FLO_SHAR QC on the import form.

Version 2.0.55 [October 17, 2005]

IMPORTANT: The zip file includes an MDB, which should go to the \database templates\ folder in VEDA-FE. Make sure to create a new active database for all models after applying this update.

- Enhancement: the new IRE bounds/prices feature (released yesterday) now senses the “exogenous” regions based on the trades declarations (stored in Trades.MDB), rather than the templates in the templates folder. So, now this feature will work even if you have fewer templates in the templates folder.
- Enhancement: the set MILESTONYR has been removed from the dd files, so that the Ending Year selection on the solve form duly applies.

Version 2.0.54 [October 16, 2005]

IMPORTANT: The zip file includes an MDB, which should go to the \database templates\ folder in VEDA-FE. Make sure to create a new active database for all models after applying this update.

- Enhancement: IRE bounds/prices for endogenous IRE processes, which become exogenous when the partner regions are not included in a run.
 - How it works: it is controlled by the new options on the solve form, under “IRE Adjustments”
- Enhancement: FLO_SHAR QC – the following has been implement to avoid dysfunctional specification and numerical difficulties for the solver:
 - FX/LO FLO_SHAR summing to > 1 are reported.

- FX/UP FLO_SHAR (if all C covered) summing to < 1 are reported.
- Processes for which FX FLO_SHAR sums to 1.
 - The dominant commodity in each region, commodity group, over all year, timeslice is identified, and deleted (only) for those year, timeslice where the sum of FX shares=1. In case there are several commodities with the same share, any one is selected.
 - For the commodities with no FLO_SHAR, one with FX=0 is inserted.
- How it works: it has been made an integral part of the VEDA-TIMES conversion, adding only a few seconds to the processing time. The invalid FLO_SHAR are reported in text file pop-ups; these files are saved in the VEDA-FE\logs folder. At this point, the deleted FLO_SHAR are put in a scenario “ZZeleted-FSQC”, and the new ones are inserted in a scenario called “ZInserted-FSQC”. To use this feature, the first scenario should not be included in runs, and the second should be.
- Enhancement: no extrapolation in VEDA-FE anymore, using the inter/extrapolation switches of GAMS via the interpolationsettings scenario. This gives more flexibility to the user, and reduces the size of many files, including the dd. Users must remember to import this scenario separately, and after importing all other scenarios. Otherwise, the inter/extrapolation settings will not be generated for the parameters added via other scenarios.
- Enhancement: <RunName>_RunSummary.log is generated in the Wrk folder, with key settings of the solve form. For example, an ordered list of the scenarios and regions selected.

Version 2.0.53 [October 12, 2005]

IMPORTANT: The zip file includes an MDB, which should go to the \database templates\ folder in VEDA-FE. Make sure to create a new active database for all models after applying this update.

Relevant for all TIMES models

- Debug: CPD from templates mapped to CHP for TIMES.
- Debug: TSLVL set to DAYNITE for all CHP.
- Debug: IRE processes no longer in set TOP, only in TOP_IRE
- Debug: COST (of SRCENCP) mapped to IRE_PRICE, rather than ACT_COST.
- Debug: Bounds on endogenous IRE processes mapped to IRE_BND.
- Debug: UC_ACT instead of UC_FLO for IRE processes.

Version 2.0.52 [September 21, 2005]

- Relevant for all
 - Debug: Creating new scenario threw an error on some computers.
 - Debug: During the import process, the reporting of bad parameters like 0 for LIFE or EFF was not precise.

Known bugs and workarounds

- Bug: If a subRES is **reimported** into an existing active database, then the entire processing becomes **very** slow.
 - Workaround: create a new active database before reimporting any subRES (or importing a new one in-to a database which has been processed).
- Bug: there are problems with entering trade parameters in the matrix view as well as the time series view.
 - Workaround: the scenario files can be used for this purpose. Create the links in VEDA, observe the names and description of technologies in browse (F7), and build a scenario file accordingly.
- In graphic mode, sometimes the VFE_Work icon remains pink (inconsistent) even if the processing is complete. But the colors on the import form, and the feedback provided in text files that pop-up is correct.