

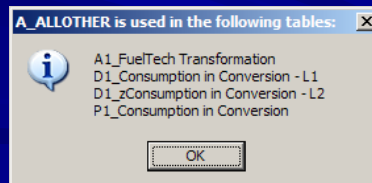
# VEDA Update

KanORS Consulting Inc.

## VEDA-BE (Back-End)

- Towards systematic reports
  - Bi-level sets
  - Ability to combine multiple tables
  - Exporting pivot tables

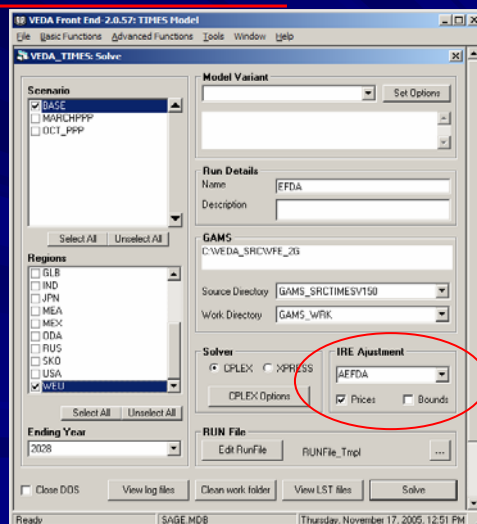
### ■ Sets in Tables



## VEDA-FE (Front-End)

- Inheriting trade bounds and/or prices from an existing run
- Scenario Processing
- New QC routines:
  - FLO\_SHAR
  - User constraints

## Trade Bounds/Prices



# New scenario: System Settings

| TS  | BD | Prmt     | Yr        | AFR  | AUS    | CAN    | CHI    | Sets   | Comm_Of | Comm_In   | Tech_Name  | Tech_Desc           | Sets       | Comm_Of | Comm_In | Tech_Nar                                 | Tech                   |      |  |
|---|----|----------|-----------|------|--------|--------|--------|--------|---------|---|--|---------------------|------------|---------|---------|--|------------------------|------|--|
| <b>Interpolation Options</b>                |    |          |           |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 5   |    | Share    | 0         | 3    | 3      | 3      | 3      |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 6   |    | FX       | Share     | 0    | 0      | 0      | 0      |        |         |   |  | RES* COM* TRA* IND* | Fuel Tech* |         |         |  |                        |      |  |
| 7   |    | UP_LO    | Share     | 0    | 15     | 15     | 15     |        |         |   |  | RES* COM* TRA* IND* | Fuel Tech* |         |         |  |                        |      |  |
| 8   |    | UC_RHSRT | 0         | 1    | 1      | 1      | 1      |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 9   |    | UP_LO    | CAP_BND   | 0    | 3      | 3      | 3      |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 10  |    | FX       | NCAP_BND  | 0    | 1      | 1      | 1      |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 11  |    | UP_LO    | ACT_BND   | 0    | 3      | 3      | 3      |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 12  |    | FX       | ACT_BND   | 0    | 3      | 3      | 3      |        |         |   |  | TRINGA111,INDEL111  |            |         |         |  |                        |      |  |
| <b>Dmy Imp Prices</b>                       |    |          |           |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 17  | TS | BD       | Prmt      | Yr   | AFR    | AUS    | CAN    | CHI    | Sets    | Comm_Of <td>Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td></td> | Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td> | Tech_Name           | Tech_Desc  | Sets    | Comm_Of | Comm_In <td>Tech_Nar <td>Tech</td> </td> | Tech_Nar <td>Tech</td> | Tech |  |
| 18  |    |          | IRE_PRICE |      | '4     | 2222   | 2222   | 2222   | 2222    |   |  |                     |            | IMP_Z   |         |  |                        |      |  |
| 19  |    |          | IRE_PRICE |      | '4     | '4     | '4     | '4     | '4      |   |  |                     |            |         |         |  |                        |      |  |
| <b>RESID Relaxation</b>                     |    |          |           |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 23  | TS | BD       | Prmt      | Yr   | AFR    | AUS    | CAN    | CHI    | Sets    | Comm_Of <td>Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td></td> | Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td> | Tech_Name           | Tech_Desc  | Sets    | Comm_Of | Comm_In <td>Tech_Nar <td>Tech</td> </td> | Tech_Nar <td>Tech</td> | Tech |  |
| 24  |    |          | RESID     | 2000 | '1.001 | '1.001 | '1.001 | '1.001 |         |   |  |                     |            |         |         |  |                        |      |  |
| <b>Process/Commodity special attributes</b> |    |          |           |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 29  | TS | BD       | Prmt      | Yr   | AFR    | AUS    | CAN    | CHI    | Sets    | Comm_Of <td>Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td></td> | Comm_In <td>Tech_Name</td> <td>Tech_Desc</td> <td>Sets</td> <td>Comm_Of</td> <td>Comm_In <td>Tech_Nar <td>Tech</td> </td></td> | Tech_Name           | Tech_Desc  | Sets    | Comm_Of | Comm_In <td>Tech_Nar <td>Tech</td> </td> | Tech_Nar <td>Tech</td> | Tech |  |
| 31  |    |          | PRC_TSL   |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 32  |    |          | PRC_WINT  |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 33  |    |          | COM_TSL   |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |
| 34  |    |          | COM_LIM   |      |        |        |        |        |         |   |  |                     |            |         |         |  |                        |      |  |

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# VEDA-FE: FLO\_SHAR QC

| Region | ELC | IND | RES | TRA | UPS |
|--------|-----|-----|-----|-----|-----|
| AFR    | ✓   | ✓   | ✓   | ✓   | ✓   |
| AUS    | ✓   | ✓   | ✓   | ✓   | ✓   |
| CAN    | ✓   | ✓   | ✓   | ✓   | ✓   |
| CHI    | ✓   | ✓   | ✓   | ✓   | ✓   |
| CSA    | ✓   | ✓   | ✓   | ✓   | ✓   |
| EEU    | ✓   | ✓   | ✓   | ✓   | ✓   |
| FSU    | ✓   | ✓   | ✓   | ✓   | ✓   |
| GLB    | ✓   | ✓   | ✓   | ✓   | ✓   |
| IND    | ✓   | ✓   | ✓   | ✓   | ✓   |
| JPN    | ✓   | ✓   | ✓   | ✓   | ✓   |
| MEA    | ✓   | ✓   | ✓   | ✓   | ✓   |
| MEX    | ✓   | ✓   | ✓   | ✓   | ✓   |
| ODA    | ✓   | ✓   | ✓   | ✓   | ✓   |
| SRA    | ✓   | ✓   | ✓   | ✓   | ✓   |
| USA    | ✓   | ✓   | ✓   | ✓   | ✓   |
| WEU    | ✓   | ✓   | ✓   | ✓   | ✓   |

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## FLO\_SHAR QC

- 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.

## QC: ADRATIO - LO

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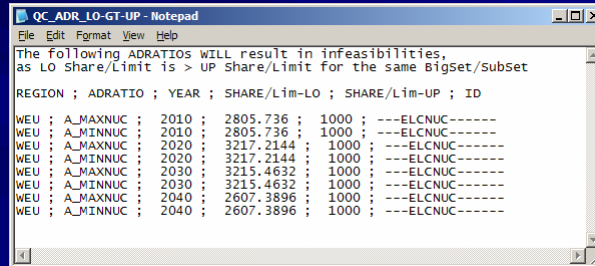
The following ADRATIOS MIGHT shut down the entire BigSet of Technologies
as the sum of LO shares over the BigSets is > 1
(These have been disabled to ensure a feasible run)

REGION ; ADRATIO ; YEAR ; TOTAL SHARE ; ID
BRZ ; S_TRT_ELC ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_ETH ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_FUC ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_HYB ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_LPG ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_MET ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_TRT_NGA ; 2035 ; 1 ; TRT** , AFV , *---
BRZ ; S_MGAS10N ; 2035 ; 1.16 ; MINGAN* , IMPGAN*----
BRZ ; S_MGAS10P ; 2035 ; 1.16 ; MINGAN* , IMPGAN*----
BRZ ; S_MOIL1upn ; 2035 ; 1.33 ; MINOIN* , IMPOIN*----
BRZ ; S_MOIL1upp ; 2035 ; 1.33 ; MINOIN* , IMPOIN*----
BRZ ; S_B10REN1 ; 2035 ; 1.48 ; ---ELCGEO , ELCBIO , ELCSOL , ELCWIN , ELCHYD , ELCBGS , EL
BRZ ; S_HYDREN1 ; 2035 ; 1.48 ; ---ELCGEO , ELCBIO , ELCSOL , ELCWIN , ELCHYD , ELCBGS , EL
BRZ ; S_HYDREN2 ; 2035 ; 1.48 ; ---ELCGEO , ELCBIO , ELCSOL , ELCWIN , ELCHYD , ELCBGS , EL
BRZ ; S_TRT_DEG ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_DWG ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_ELC ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_ETH ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_FUC ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_HYB ; 2040 ; 1.01 ; TRT** , AFV , *---
BRZ ; S_TRT_LPG ; 2040 ; 1.01 ; TRT** , AFV , *---

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# QC: ADRATIO - UP

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QC_ADR_LO-GT-UP - Notepad
File Edit Format View Help
The following ADRATIOS WILL result in infeasibilities,
as LO Share/Limit is > UP Share/Limit for the same BigSet/Subset

REGION ; ADRATIO ; YEAR ; SHARE/Lim-LO ; SHARE/Lim-UP ; ID
WEU ; A_MAXNUC ; 2010 ; 2805.736 ; 1000 ; ---ELCNUC-----
WEU ; A_MINNUC ; 2010 ; 2805.736 ; 1000 ; ---ELCNUC-----
WEU ; A_MAXNUC ; 2020 ; 3217.2144 ; 1000 ; ---ELCNUC-----
WEU ; A_MINNUC ; 2020 ; 3217.2144 ; 1000 ; ---ELCNUC-----
WEU ; A_MAXNUC ; 2030 ; 3215.4632 ; 1000 ; ---ELCNUC-----
WEU ; A_MINNUC ; 2030 ; 3215.4632 ; 1000 ; ---ELCNUC-----
WEU ; A_MAXNUC ; 2040 ; 2607.3896 ; 1000 ; ---ELCNUC-----
WEU ; A_MINNUC ; 2040 ; 2607.3896 ; 1000 ; ---ELCNUC-----
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