

List of main changes between WILIAM v1.1 and v1.2 (Vensim)

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LOCOMOTION Consortia

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Below is a synthesis list of the main changes introduced in the v1.2 (Vensim) by module; those related with inter-module links are included within one of the involved modules.

Transversal

- Updated Documentation
- Updated data
- Cleaning of views
- Update, documentation, usability and addition of policies to the scenario_parameters.xlsx. This version includes a total of 88 input scenario parameters and all modules are well-covered)
- Bug fixes
- Updating of model SWITCHES
- Code optimization: the size of the model (.mdl) has been kept constant and the size of model parameters files has been reduced by 2/3.
- Creation of an User Guide
- Update of model diagrams
- Update of .vpmx for users of freeware [Vensim Model Reader](#)

Demography

- Updated version of households composition.

Society

- New view with the modeling of nutrition indicators

Economy and finance

General

- Inclusion of main policy parameters of economy module and their documentation in scenario_parameters.xlsx. Explanations on how to develop a consistent scenario.

Labour

- New specification wage curve

Investment firms

- New investment function Consumption
- Updated households data
- Dynamic propensities to consume
- Split energy households/buildings

Energy

General

- Updated Template for Visualisation of Energy Module Results from .lst data export ("RESULT ANALYSIS ENERGY MODULE template v1.xlsx")

End Use

- implemented Price-based Final Energy Substitution Mechanism (including a bug fix related to numerical issues in Energy-Intensity claculation). Feature not fully validated yet.
- Implementing Carbon Tax effects on energy substitution (For Households and Industry)
- Fix data passenger transport for consistency between energy and economy module

Transformation

- updated empirical data
- Improved OPEX calculation
- Fixed a bug related to the biomass price feedback

Capacities

- fixed Bug in LCOE Calculation
- Testing a vintaging Approach for Capacity expansion

Variability Management

- fixed Bug in PROSTO_dedicated_capacity_expansion

Materials

Coal

- Fixed errors in the Coal model- Stock and Flow of Resources and Reserves

Gas

- Decoupling of the price function of Oil and gas after 2020. Now one price function for before 2020 and one for after
- Introduction of a price filter similar to the one applied in Oil

Fossil Fuels in General

- User has the option to choose low medium and High resource estimates in the scenario sheet.

Materials in General (Ni, Cu, Fe and Al)

- **Increasing or decreasing trends of material intensities.** Based on GDP output per resource unit, consider substitution and trends for energy intensities. Technological progress choose a stylized approach. **First approach is programmed need to be refined and equipped with select options!**
- **Set recycling policy – adapted- the user has now the same options as for the materials energy technologies. Possible to set EOL rates with starting and target Years.**

Materials energy technologies

- Bugs fixed rest of economy calculation and requirements for RES and EV and in relation to amount of resources extracted compared to available reserves and resources which was affecting subtechnology allocation

Land-use and water

- Solve error in signal of availability of forest products
- Updated livestock parameters

Climate

- Validation of total GHG emissions
- Update CH₄ and N₂O emissions factors