

BIOWIN VERSION 5.2

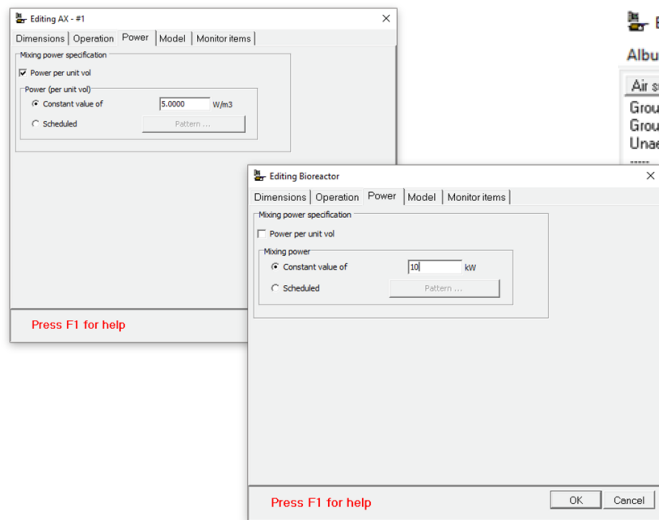
NEW FEATURES + USABILITY IMPROVEMENTS

SPEED IMPROVEMENTS

- A robust steady state solver is crucial for simulation analysis. In BioWin 5.2 the underlying numerical engine of the steady state solver has been updated to bring huge speed gains - **50 times faster!**
- BioWin 5.2 uses a new dynamic integration method for significant simulation speed gains – particularly for large flowsheets and systems incorporating biofilm elements.

POWER REQUIREMENTS

- BioWin 5.2 has even more options for tracking an element's power consumption.
- All elements can track power on either a unit volume/flow basis, or a direct user input kW (or hp) basis. Each of these options can be constant or vary with time.

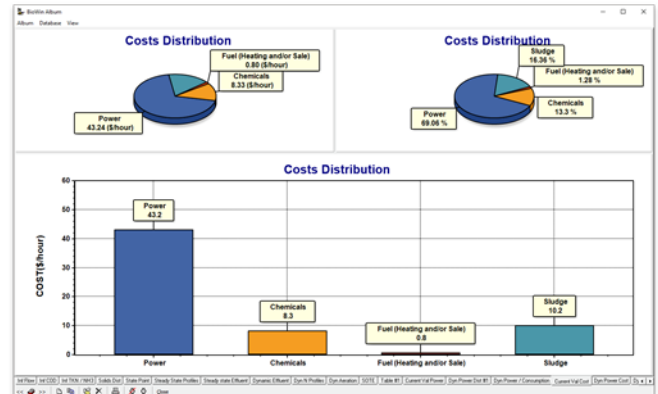


The screenshot shows the 'BioWin Album' interface with the 'Album Database View' tab selected. It displays a table with the following data:

Air supply group	Power [kW]	Intake pressure [kPa]	Discharge pressure [kPa]	Intake airflow [Humid m3/hr (field)]
Group #1	146.30	97.83	148.98	9034.42
Group #2	64.52	97.83	148.98	3983.97
Unaerated	0	97.83	148.98	0
.....	210.82	13018.38

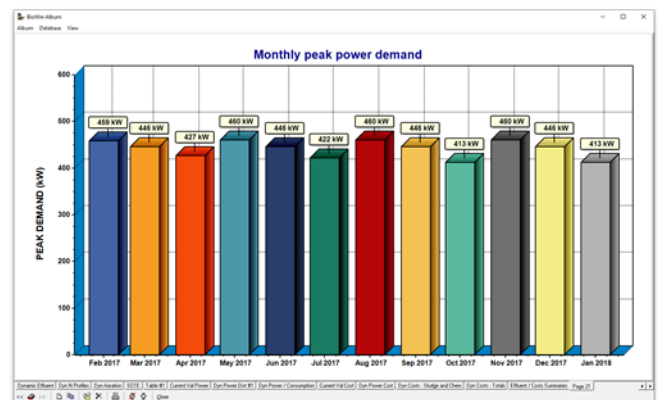
NEW OPERATING COSTS

- BioWin 5.0 tracked three sources of operating cost: energy consumption, chemical/consumables, sludge disposal. A fourth cost is added for BioWin 5.2: fuel consumption. If the user chooses to have biogas generated in the anaerobic digestion sold, that will show as a cost credit (negative cost).



- Two new outputs related to power requirements have been added to BioWin 5.2:

- 1) Pre-defined air supply group tables
- 2) a chart that shows peak 15-minute power



THE ENVIROSIM TEAM

www.envirosim.com • info@envirosim.com
tel +1 905-481-2607 • fax +1 905-481-2610

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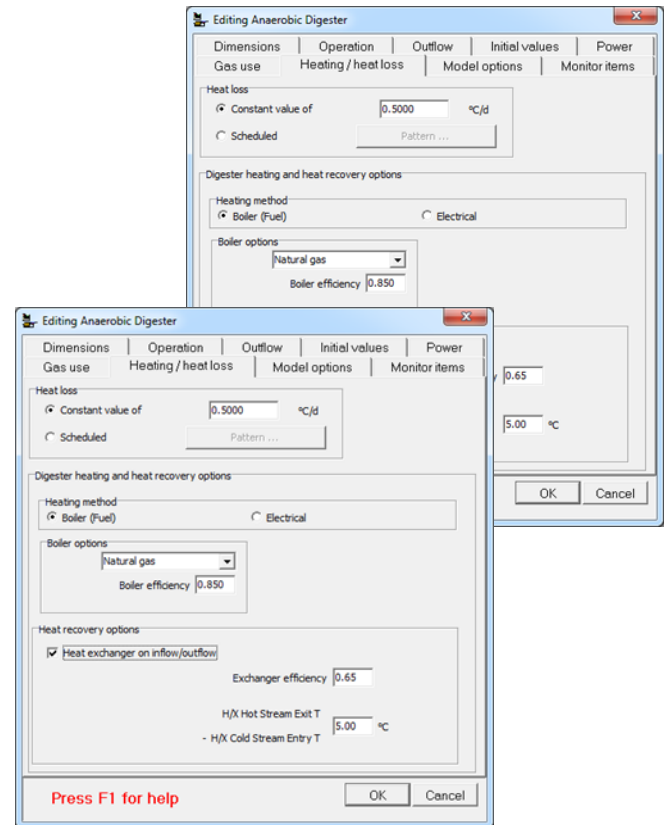
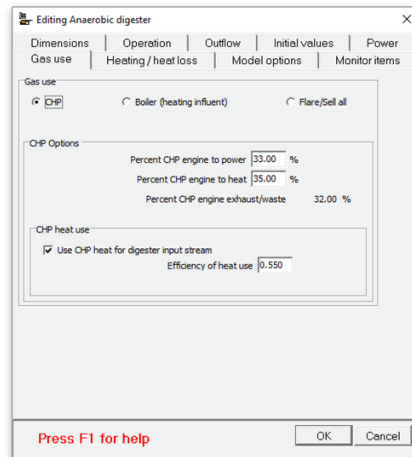
HEATING REQUIREMENTS

- BioWin 5.2 extends the heat-tracking capability introduced in version 5.0. Heat loss from anaerobic digesters can now vary with time for better tracking of seasonal variations.
- There is now an option for heat recovery in anaerobic digesters and thermal hydrolysis units.
- Choose between three uses for biogas generated by anaerobic digesters:

1) Heating the digester only

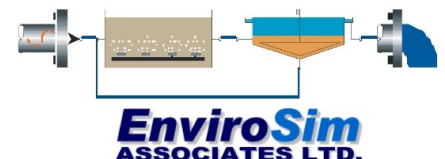
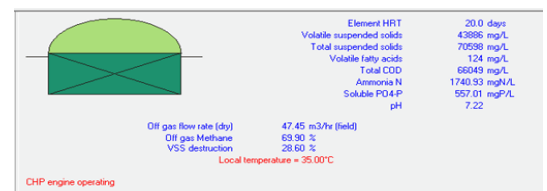
2) Used in a Combined Heating / Power (CHP) engine for power and heat generation

3) Sold or flared



USABILITY IMPROVEMENTS

- Users can choose whether or not the Notes window is displayed when you open a BioWin file, by checking or unchecking the **Automatically show notes after loading file** box under **Tools > Customize > General**
- Anaerobic digesters and variable volume bioreactors may now be set to “constant” volume.
- Pop-up hints have been added to clarify pipe minor loss calculations in pump flowsheet elements
- If a CHP engine is associated with an anaerobic digester element, red text is shown in the fly-by pane as a visual indicator.
- Improved handling of how BioWin Album tables and charts are added to the BioWin Notes editor *via* the right-click “Add to notes” command. For example, tables are automatically formatted before being pasted to the Notes editor and tables with many columns are automatically divided into smaller tables that will fit the Notes editor.



www.envirosim.com info@envirosim.com
tel +1 905-481-2607 fax +1 905-481-2610