AVEVA™ Process Simulation

Built from the ground up, delivering the process digital twin,
to the next generation of engineers.

North America Advisory Group Meeting

James Kattapuram, AVEVA Process Simulation Development Director
Cal Depew, AVEVA Process Simulation Product Director

20 October 2021 Rev 6

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AGENDA

01 **Vision and Trends**

02 Roadmap

03 New Features since last year

04 Feedback and Comments

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The Process Side of Digital Transformation

Designed from the ground up, delivering the process digital twin, to the next generation of engineers

Designed from the Ground Up

- Multi-core
- Continuously saved for cloud
- Role-based user interface
- Open model writing

Delivering the Process Digital Twin

- Design, Rating and Dynamic Mode
- Libraries for different Assets for the Lifecyle
- Design and Operating Digital Twin

To the Next Generation of Process Engineers

- Groundbreaking Ease of Use
- Instantaneous results
- Intuitive User Interface

Reduction in simulation effort across the lifecycle
Collaboration internally and externally

Adaptable for Sustainable Process Development

Improved engineering workflow

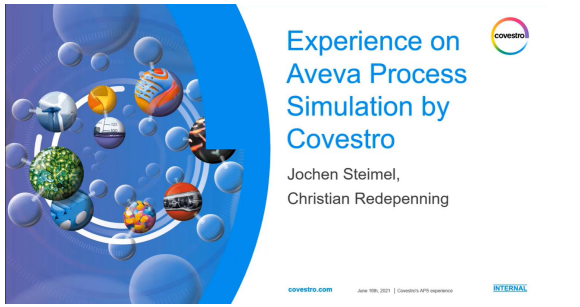
Enables True Digital Transformation

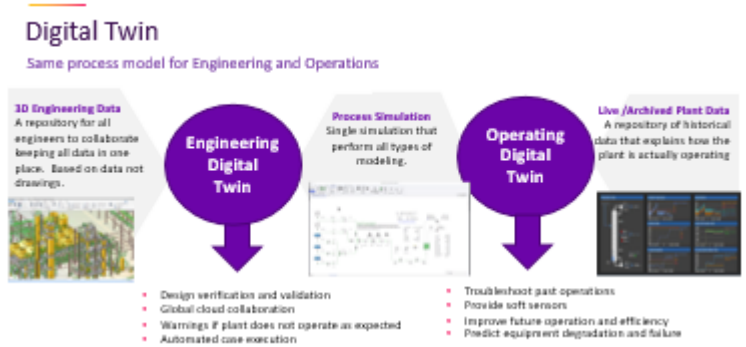
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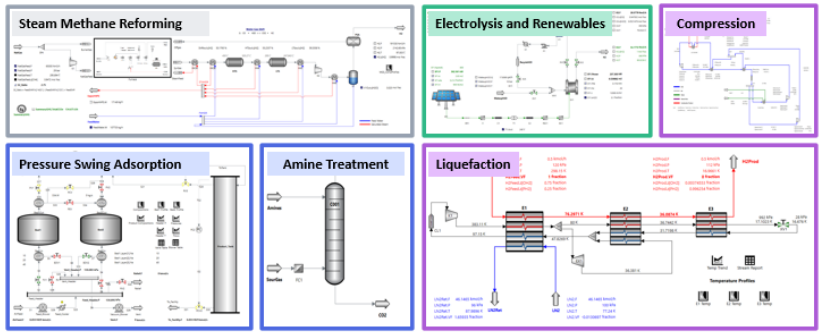
AVEVA Process Simulation

Three Major Themes

- **Chemicals Process Industry**
  - Major Feature Set is complete with secondary features underway
  - European Advisory Board included presentation by Covestro
- **Digital Twin for Design and Operating Plants**
  - Enhanced by the combination of AVEVA and OSI (PI)
  - Chemical Plant Performance Monitoring
  - Equipment Monitoring with APA using ML
  - Advanced Real Time System under development
- **Sustainability**
  - Greenhouse Gas Emissions
  - Renewables, Hydrogen, Circular Economy







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2021 European Advisory Group

Covestro presentation at European Advisory Group meeting

- Key Points
  - Background, Partnership, Lifecycle, Digitalization
  - Aniline – “Never before seen convergence”
  - MDI – “Very happy with really fast convergence .. can handle such large systems”
  - Custom Modeling “Easier to understand a very complex (custom equipment) model”
  - Integration with Python, OSI, and DECHEMA.
- Conclusion

  “We pulled nearly completely away from existing tools to AVEVA Process Simulation”



Link

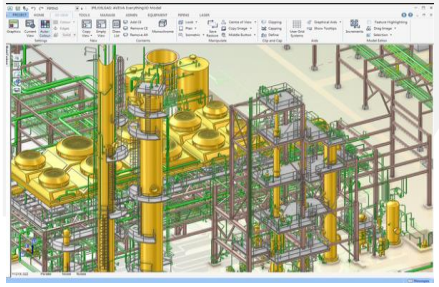
Message: We have moved one customer completely to APS in Chemicals

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Digital Twin

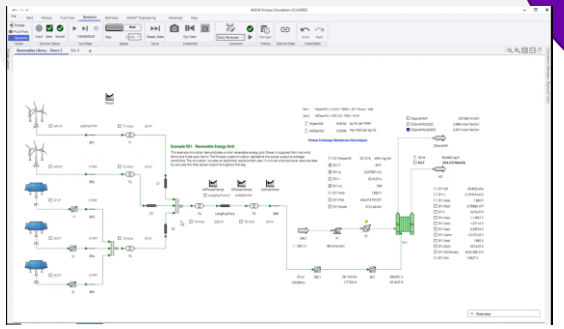
Same process model for Engineering and Operations

3D Engineering Data
A repository for all engineers to collaborate keeping all data in one place. Based on data not drawings.



Engineering Digital Twin

Process Simulation
Single simulation that perform all types of modeling.



Operating Digital Twin

Live /Archived Plant Data
A repository of historical data that explains how the plant is actually operating



- Design verification and validation
- Global cloud collaboration
- Warnings if plant does not operate as expected
- Automated case execution

- Troubleshoot past operations
- Provide soft sensors
- Improve future operation and efficiency
- Predict equipment degradation and failure

Message: One Model for Two Types of Digital Twin

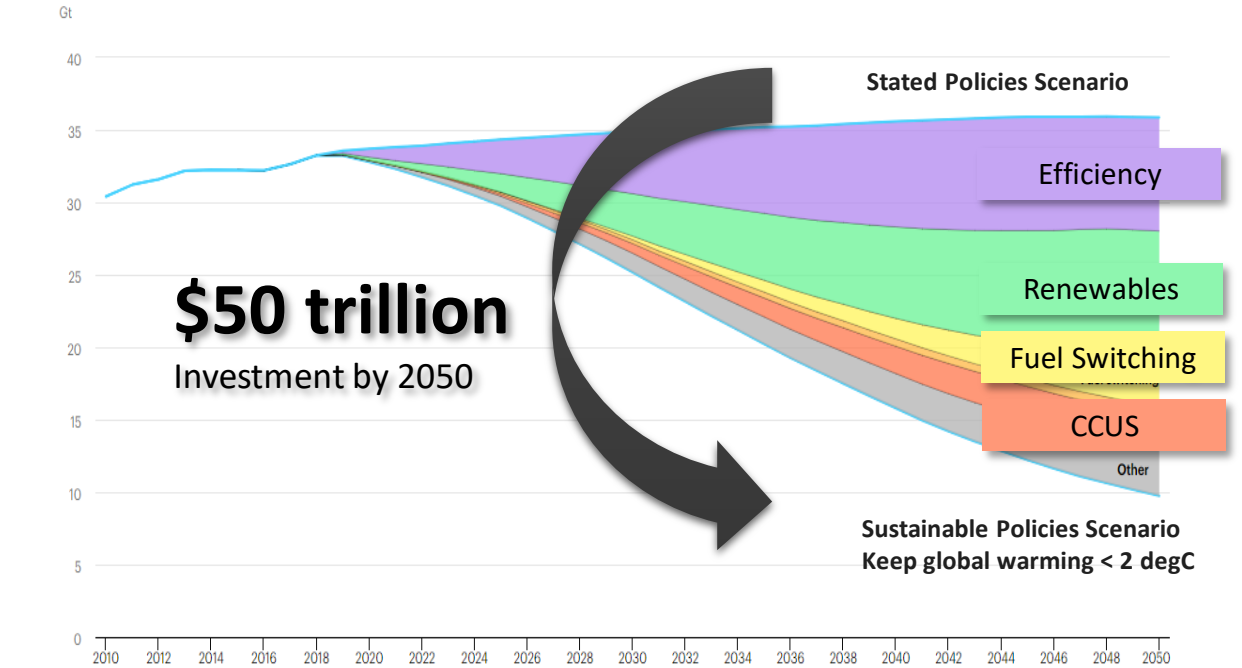
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Sustainable development has become top agenda for the world to address climate challenges

SOURCE: United Nations, International Energy Agency, Morgan Stanley

UNITED NATIONS
PARIS CLIMATE AGREEMENT
185 countries

CO2 emissions reductions by measure in the Sustainable Development Scenario relative to the Stated Policies Scenario, 2010-2050



IEA. All Rights Reserved

Stated Policies Scenario · Efficiency · Renewables · Fuel switching · Nuclear · CCUS · Other · Sustainable Development Scenario

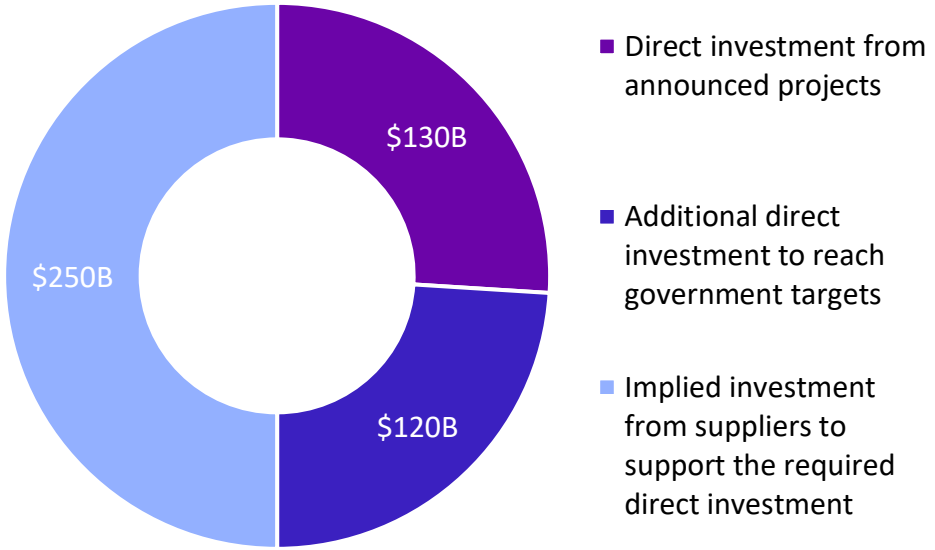
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State of the Hydrogen Economy

Rapid acceleration across all regions

- Currently $500 billion in the Hydrogen investment pipeline (through 2030)
  - $150 billion are ‘mature’ investments (planning, construction, commissioning, or operational)
- Europe remains the leader in the hydrogen economy and accounts for over 80% of new projects investments
- Other regions are growing faster relative to Europe and quickly catching up

The Hydrogen Economy at a Glance

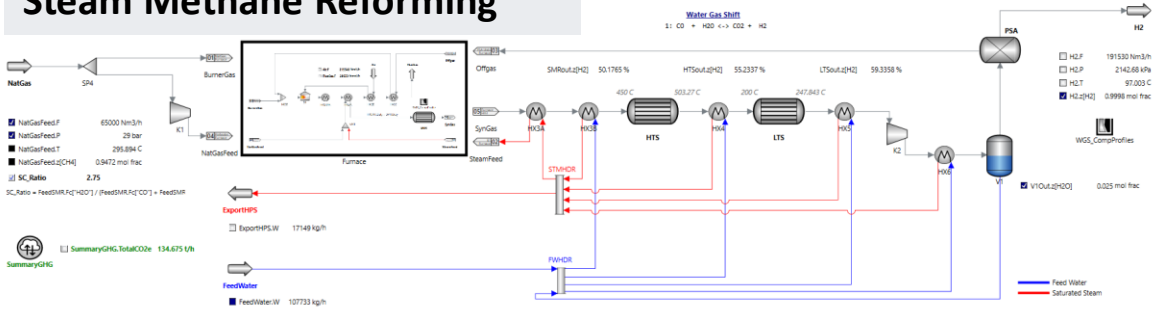


Source: Hydrogen Council, McKinsey & Company. Hydrogen Insights July 2021 Update, July **2021**

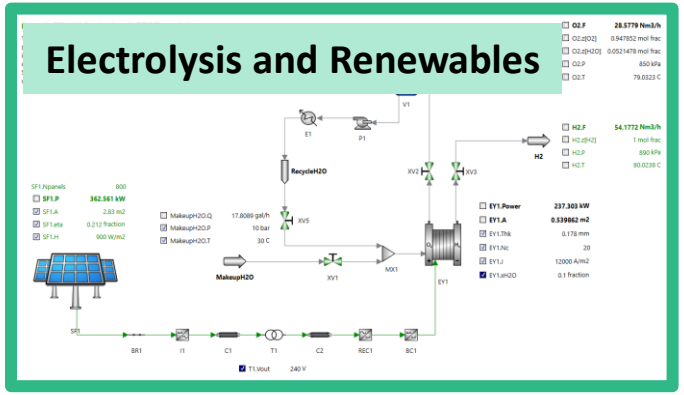
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Hydrogen Processing in AVEVA Process Simulation

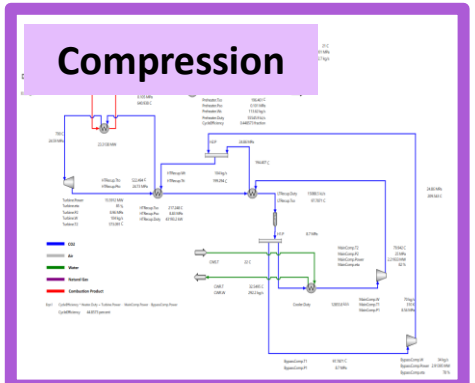
Steam Methane Reforming



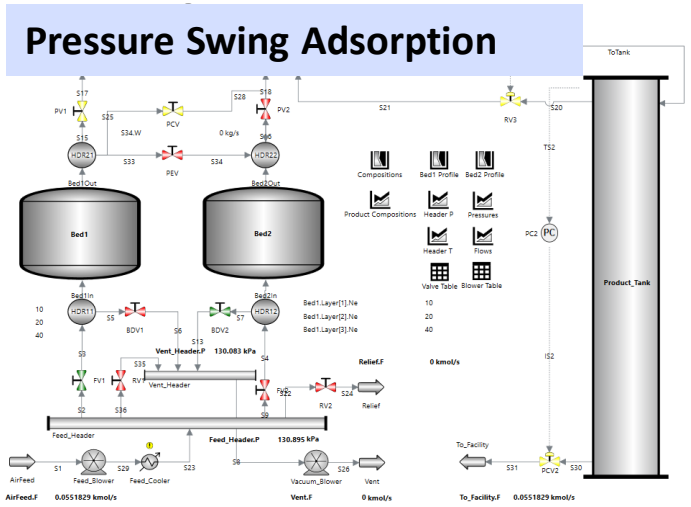
Electrolysis and Renewables



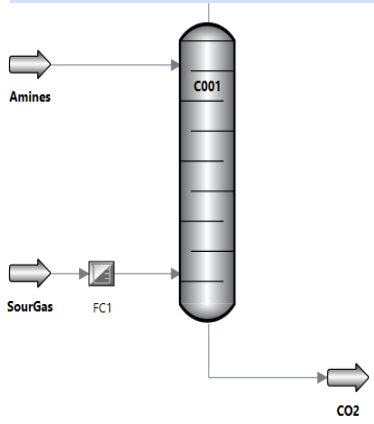
Compression



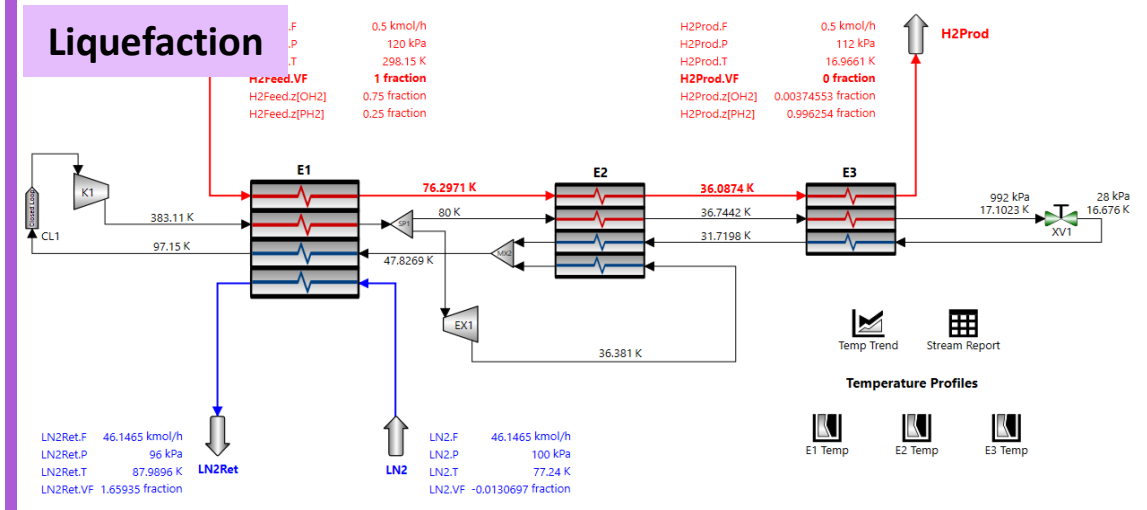
Pressure Swing Adsorption



Amine Treatment



Liquefaction



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01 Vision and Trends

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AVEVA™ Process Simulation Proposed Release Plan

Continue rapid development of Features for Chemical Process Simulation

AVEVA™ Process Simulation 5.1 Released (Jan 2021)

Thermo
- Hydrofluoric Acid (HF) Thermo Considering Reaction (H_6F_6 = $[HF]_6$)
- IF97 Transport Properties
- Thermo Access Interface (DPP, DDBSP)
- VLLE Improvements
- eNRTL Electrolyte Improvements

Models
- Batch Distillation Library (Beta)
- Reactor heat streams
- Gibbs Reactor Improvements
- Rate Based Library Improvements
- Excel Reactor Configuration Tool
- Sour Water and Examples

Platform
- Python Scripting Interface
- Thermo and Solver Diagnostics
- Reduced Memory Footprint
- Fluid changes in manual mode

Other
- Best Practices

AVEVA™ Process Simulation 5.2 Released (April 2021)

Thermo
- DECHEMA DPP Interface (DECHEMA)
- Extended Wilson Method
- Thermo Library Generation Tool
- Binary and Ternary diagram mass fraction basis
- Thermo Access Interface Enhancements

Models
- Batch Distillation Library
- Liquid-Liquid Decanter Model
- Drum/Separator Entrainment
- Measurement Reconciliation Model
- Pop Acting Relief valve model
- Flare Flag model
- Reaction Generator Excel Tool

Platform
- Specification Sets
- Model changes in manual mode
- PRO/II Stream and Fluid Migration

AVEVA™ Process Simulation 5.3 Beta Released(July 2021)

Thermo
- Wilson Thermo Data Override
- UNIQUAC Thermo Data override
- Constant Component Thermo Data Override
- Binary Phase Diagram gamma-x plot

Models
- Renewable Energy library POC
- H2 Electrolyzer Model POC
- Greenhouse Gas Calculations
- Pump multiple curves
- Batch Library Improvements

Platform
- Specification Set Tooltips
- Diagram legend placement
- User Interface Style Improvements
- Table automatic updates
- Scripting Interface Improvements

Examples
- Steam Methane Reforming to produce blue Hydrogen

AVEVA™ Process Simulation 2022 Released (Oct 2021)

Thermo
- Predictive SRK with gE UNIFAC
- eNRTL Thermo Data View
- SRK/SRKM/PR/PRM Binary Data Override
- High Pressure Flash (Beta)

Models
- Column Excel report
- Renewables Library
- H2 Electrolyzer Model
- Valve Motive Power
- Reaction Database

Platform
- Copy-paste flowsheet Equations
- Scripting Interface Improvements
- Solver algorithm improvements

-Examples
- Biodiesel Process

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AVEVA™ Process Simulation Proposed Release Plan

New Version numbering starting with version 2022

AVEVA™ Process Simulation 2022.1 Planned (Jan 2022)

Thermo
- Predictive SRK with gE NRTL
- eNRTL thermo data override
- Improved fluid warning visibility
- High Pressure Flash

Models
- Column internals: Koch Glitsch Column internals: Sulzer
- Column packed stage height
- Header and Drum heat loss
- Compressor scaling factors

Platform
- Write back to OSI PI
- Scripting for online performance monitoring with OSI PI
- Engine for AVEVA Dynamic Simulation (for project use)
- Optimizer feedback in Trace Log

Examples

AVEVA™ Process Simulation 2022.2/3 Proposed (April/July 2022)

Thermo
- GERG 2008 method
- UNIFAC binary fill
- Phase Envelope diagram
- Electrolyte reactions and ion data

Models
- Pyrolysis model with Ultimate analysis
- Column feed separation option
- Compressor invariant curves
- CO2 amine contactor prototype

Platform
- Real-time system for online performance monitoring PoC
- Data Screening Options
- Visualize compressor operation

Examples
- Liquid organic H2 carrier (LOHC)
- Vinyl chloride monomer (VCM)

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01 **Vision and Trends**

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01 Vision and Trends

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AVEVA Process Simulation 2022

Platform

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AVEVA™ Process Simulation 5.0 New Features

Heat Curve Export for Exchanger Design

Objectives/Background

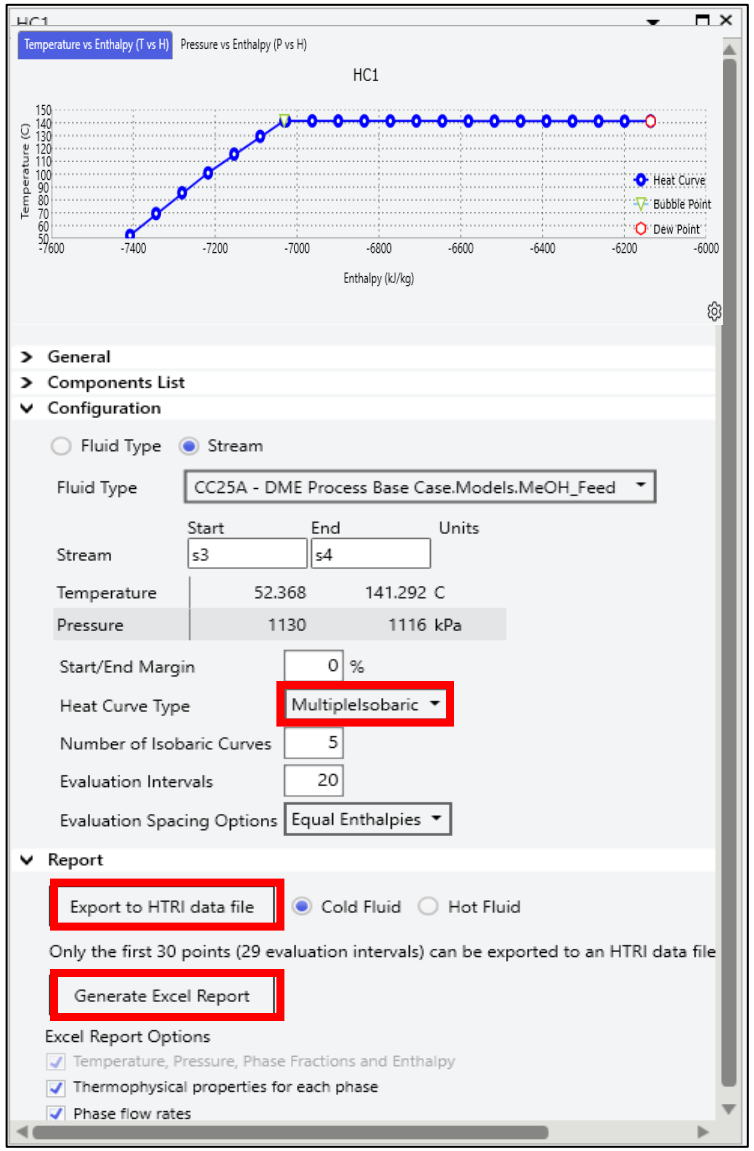
- Process simulators are needed to generate heating curves with property data to design heat exchangers

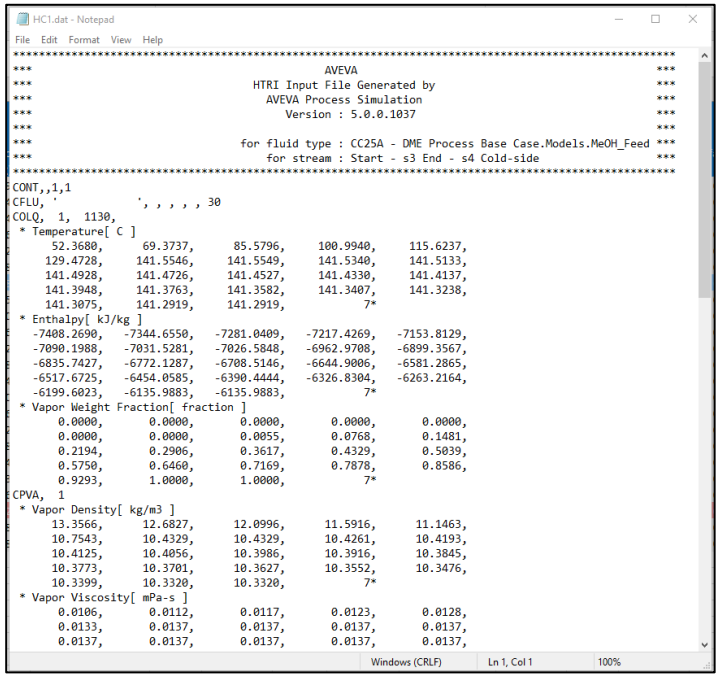
Solutions

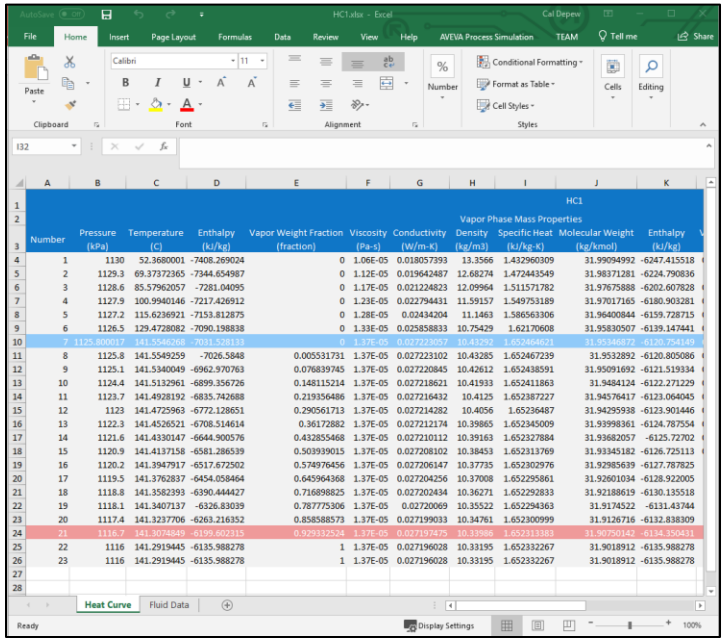
- Select start and end stream which may cover multiple exchangers
- Select multi-Isobaric to data can be interpolated at different exchanger pressure drops
- Export to Microsoft Excel
- Export to HTRI® Xchanger Suite dat file

Delivery Plan

- Version 5.0 (October 2020)
- VLLE Fluids (Future)
- Steam Fluids (Future)







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AVEVA™ Process Simulation 5.2 New Features

Changed Specification Sets

Objectives/Background

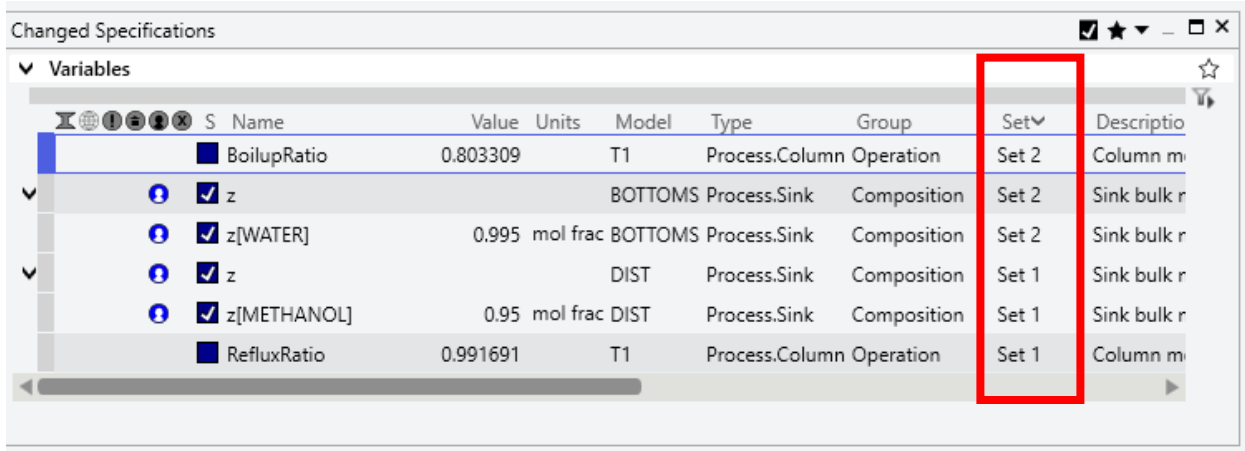
- Changed specifications are the specifications changed by the user shown with a blue square background.
- Users need a more targeted way of seeing changed specifications for large simulations.

Solution

- We create “Specification Sets” of variable specifications changed at the time to make the simulation properly specified (“square”) again.
- Viewed in Changed Specifications or Full Inspector

Delivery Plan

- Delivered for 5.2
- Customer-driven Improvements after 5.3



In Changed Specifications or Full Inspector, just click on Set to sort by the Specification Set to see the variables whose specifications were made at the same time.

From C1 Methanol Distillation

- *In Set 1, Reflux ratio is swapped with overhead methanol purity*
- *In Set 2, Boilup ratio is swapped with bottoms water purity*

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AVEVA™ Process Simulation 5.3 Beta Features

Changed Specification Sets Tooltips

Objectives/Background

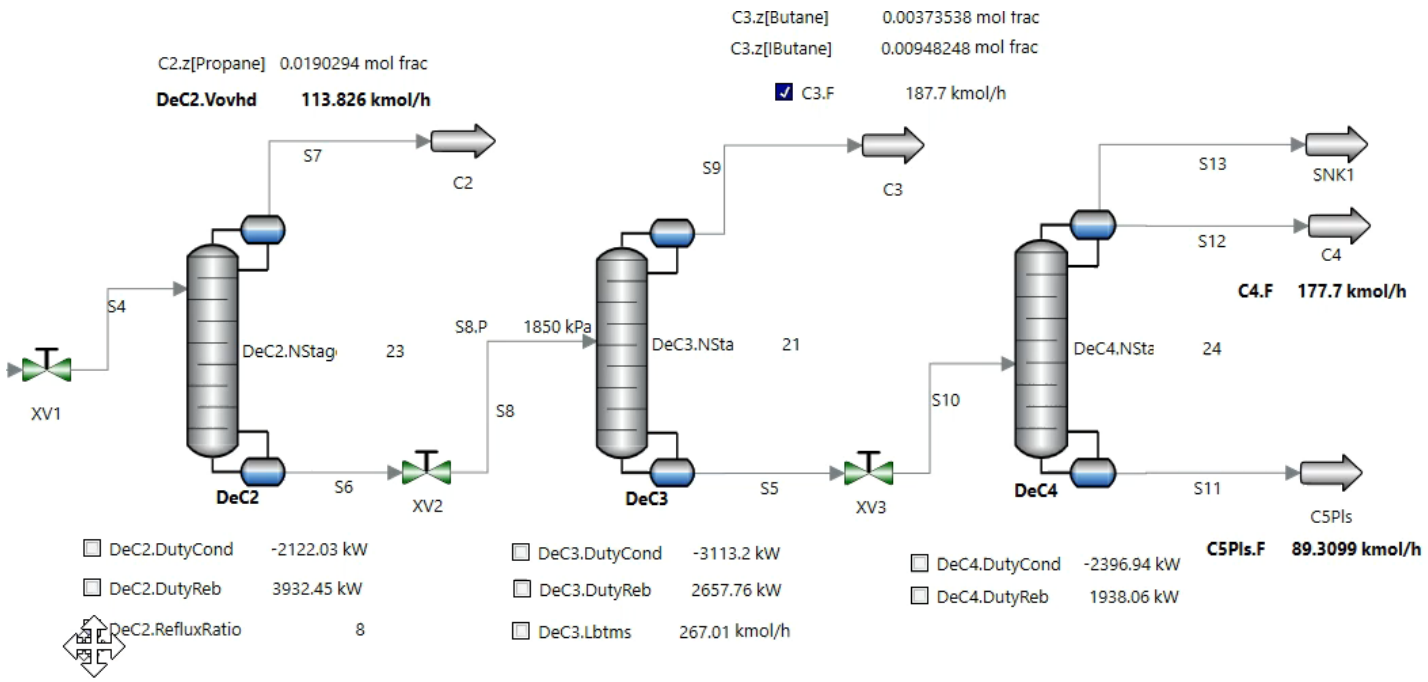
- How can you quickly find out what variables were specified at the same time without having to go to the "Changed Specifications" display.

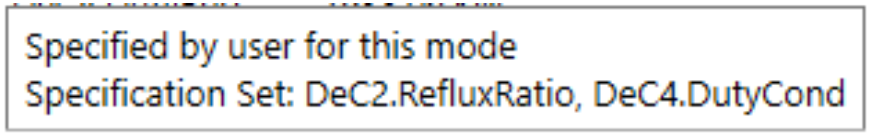
Solution

- Hover over any blue specification box to see what other variables specifications were made at the same time.

Delivery Plan

- Changed Specifications released in 5.2





Case where reflux ration of column DeC2 and condenser duty of column DeC4 were swapped, which would have been very hard to know.

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AVEVA™ Process Simulation 5.2 New Features

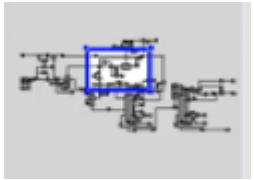
View entire flowsheet

Objectives/Background

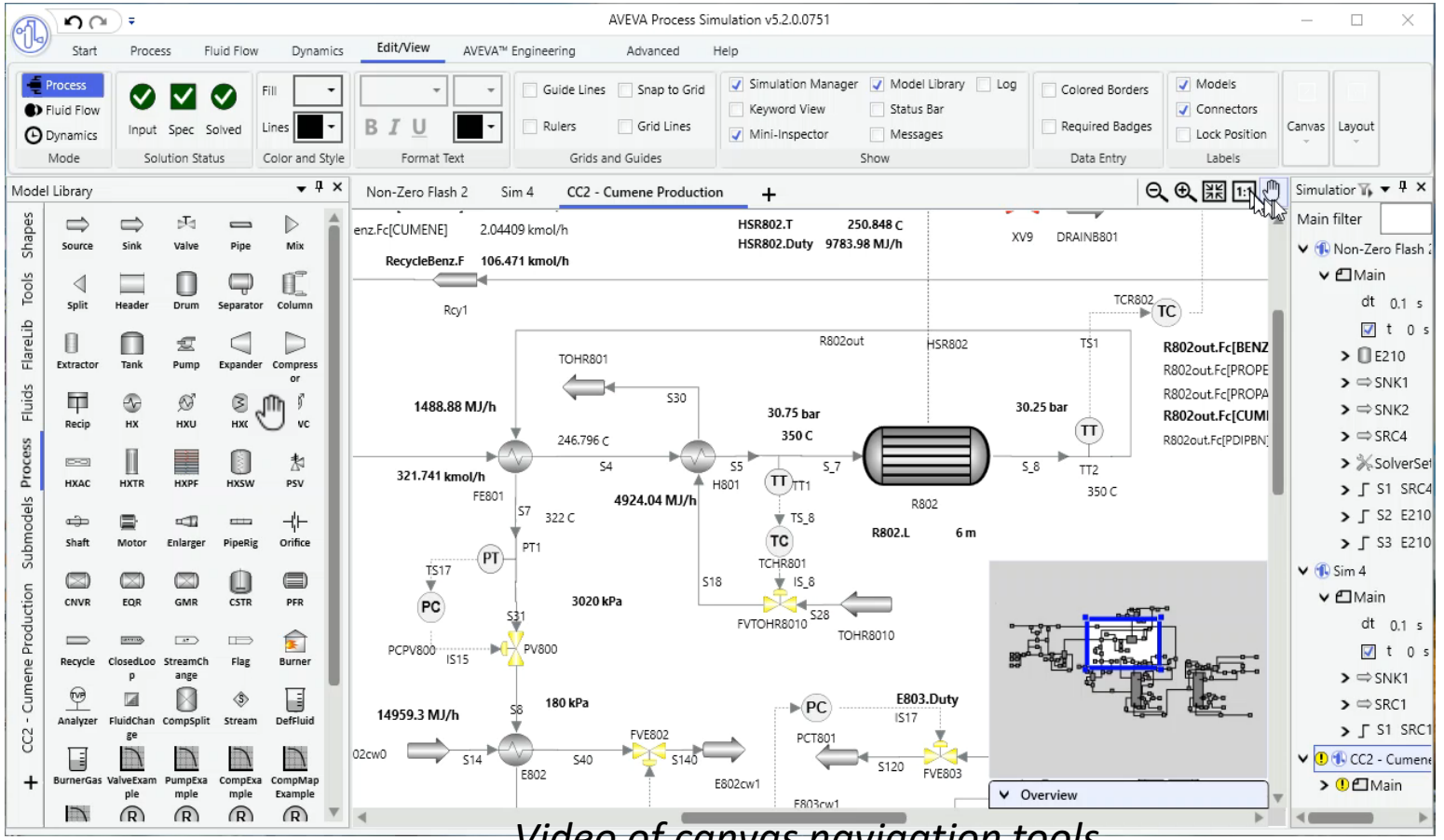
- Hard to see entire simulation when it is large so we added fit to page option and revised all of the control icons.

Solution

- Zoom out
- Zoom in
- Fit to page
- Reset zoom to one to one
- Put canvas in pan mode



Note: Overview is still the fastest way to pan the flowsheet canvas.

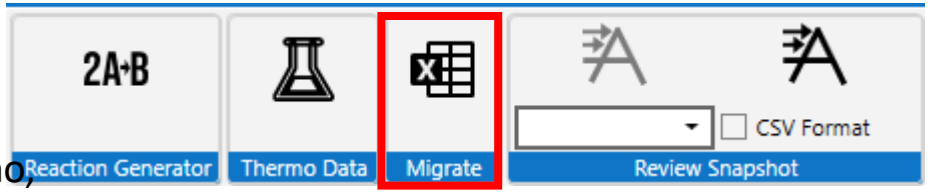


Video of canvas navigation tools

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AVEVA™ Process Simulation 5.2 New Features

PRO/II Component, Methods, and Stream Migration



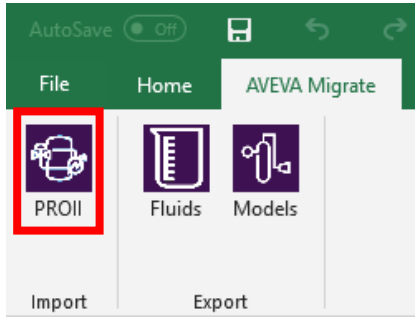
Available from Advanced Ribbon

Objectives/Background

- Reduce time to transfer input data from other simulators, especially thermo, component, and feed stream data.
- Convert Petro components from PRO/II created with Assays.

Solution

- Press Migrate from Advanced Ribbon to launch Microsoft Excel
- Press PRO/II from AVEVA Migration to select PRO/II Simulation
- Imports Thermo Data, Component List, and Stream Compositions
- Review and modify in Microsoft Excel
- Exports Fluids and So to AVEVA Process Simulation

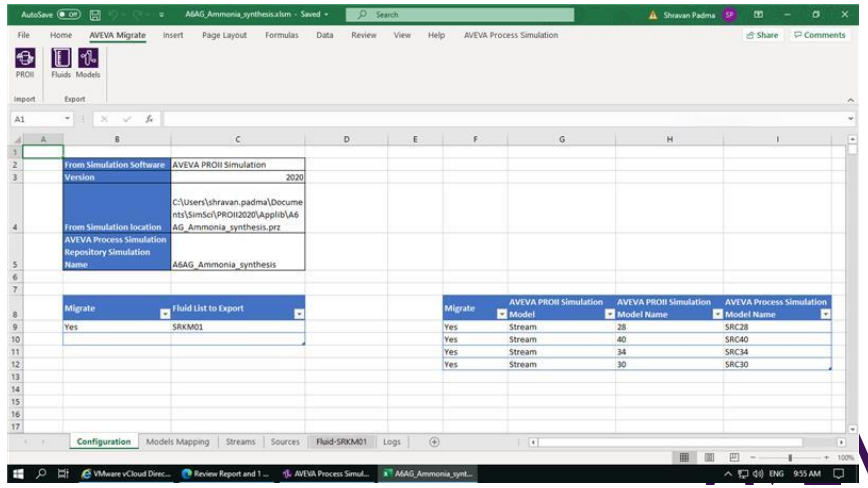


Limitations

- Must have 64 Bit Microsoft Excel and 64 Bit PRO/II
- Check for conversion messages in Excel Logs Tab
- Check source flash results (VF @ T and P) to check new results

Delivery Plan

- Henry Data – Future
- Future Thermo Data Override
- Models - Future



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AVEVA™ Process Simulation 5.1 New Features

Scripting Interface using Python or C#

Objectives/Background

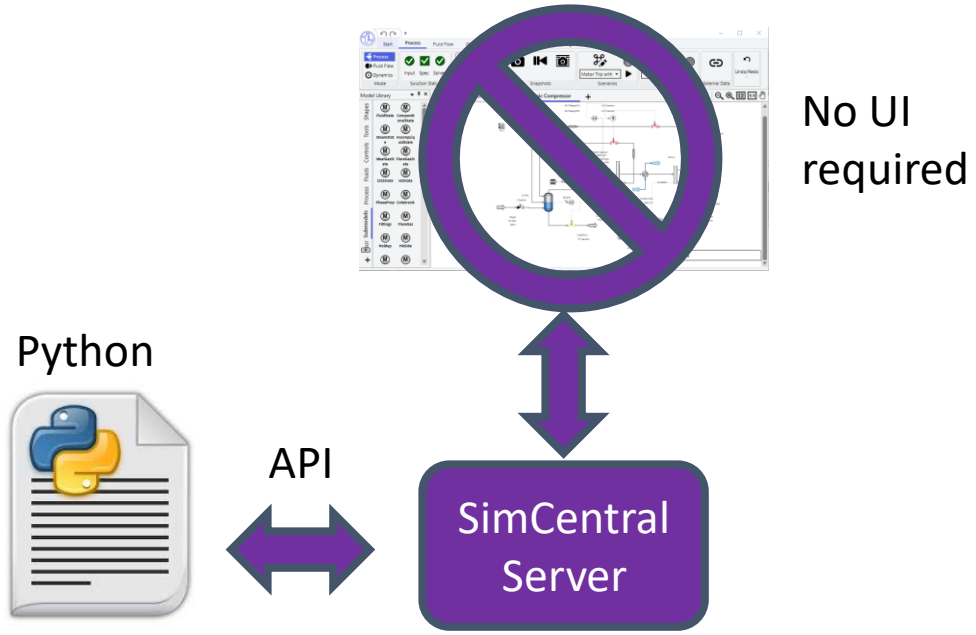
- This new application programming interface (API) allows third-party developers to author scripts that automate various operations against simulations

Solutions

- Provided Software Development Kit (SDK)
- Can be called from Python or C#
  - Read and write values for variables and parameters
  - Create and revert snapshots
  - Run scenarios
  - Create or edit simulations
- User Interface not used

Delivery Plan

- Already in use by several companies and universities.
- Request the SDK from Support / R&D



Python script can control SimCentral server without the user interface

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AVEVA Process Simulation 2022

Thermodynamics

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AVEVA™ Process Simulation 2022 Features

Predictive SRK (PSRK) with Excess Gibbs Energy of UNIFAC

Objectives/Background

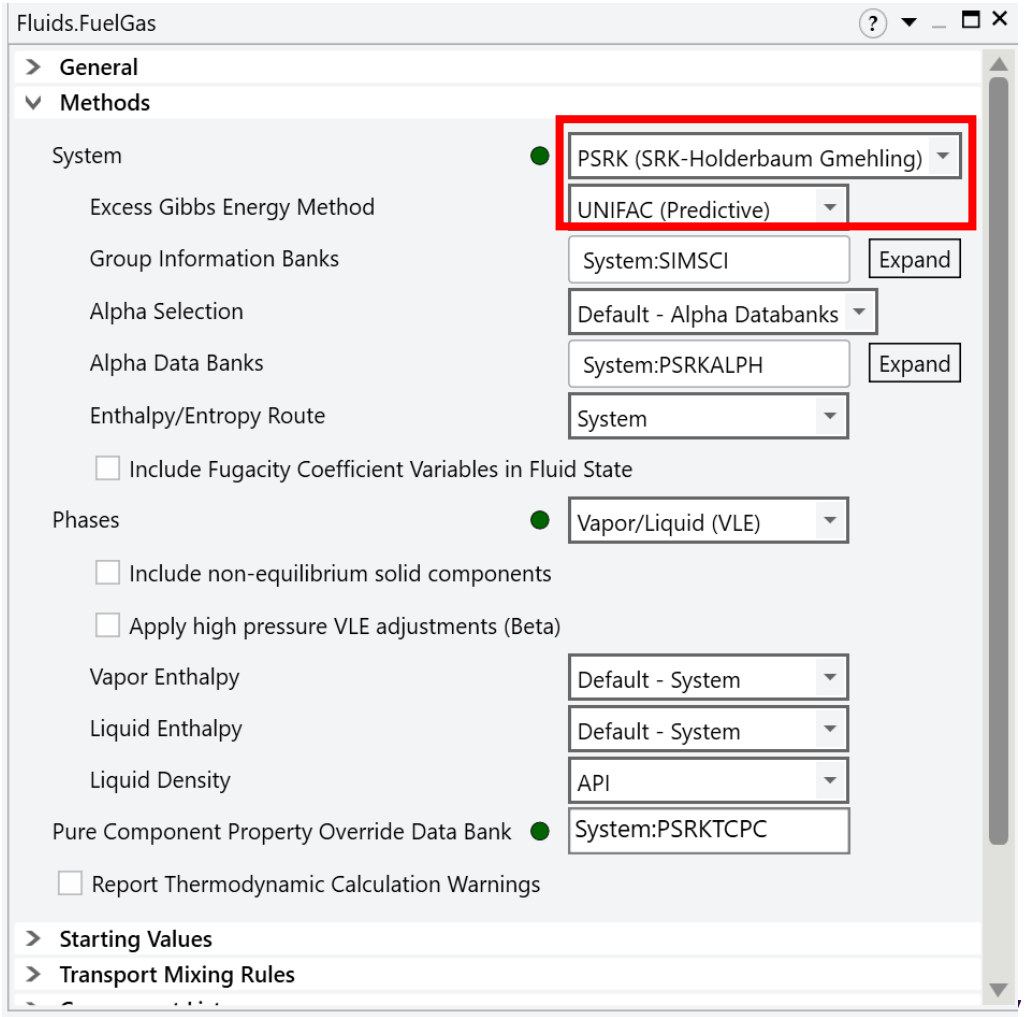
- Use the established predictive SRK for non-ideal systems

Solution

- Excess Gibbs Energy from UNIFAC
- Holderbaum-Gmehling mixing rule

Status/Delivery

- Excess Gibbs from UNIFAC this release
- Excess Gibbs from NRTL in a future release



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AVEVA™ Process Simulation 5.2 New Features

Binary and Ternary Phase Diagram Mass Fraction Basis

Objectives/Background

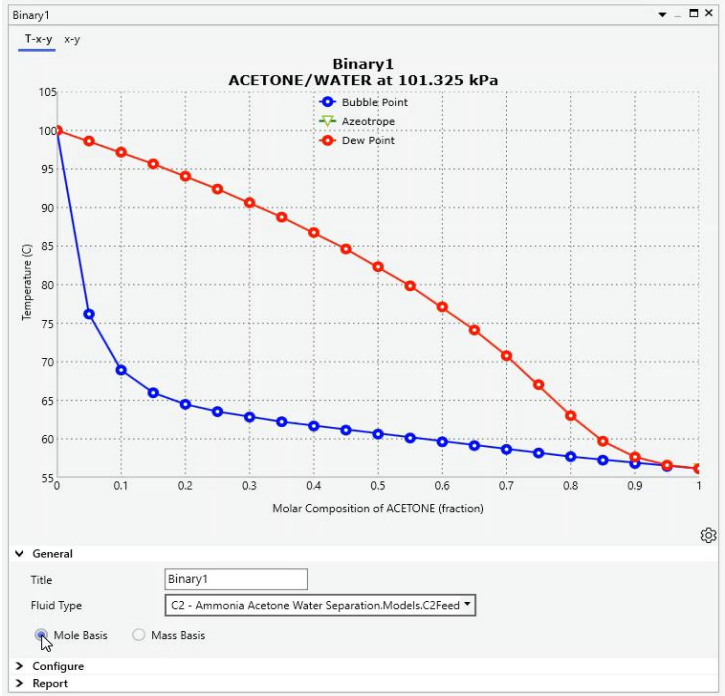
- Phase diagrams only displayed in a mole basis. Many customers work on a mass basis.

Solution

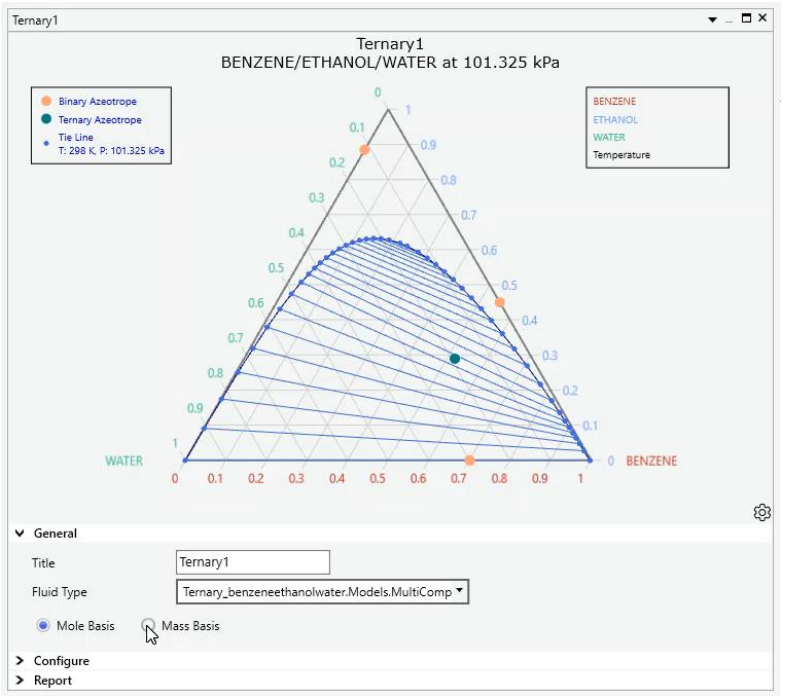
- Add Mass Basis
- Binary Phase Diagram
- Ternary Phase Diagram.

Delivery Plan

- Version 5.2 (April 2021)



Play video



Play video

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AVEVA™ Process Simulation 5.3 Beta Features

Binary Phase Diagram Activity Coefficient Plot

Objectives/Background

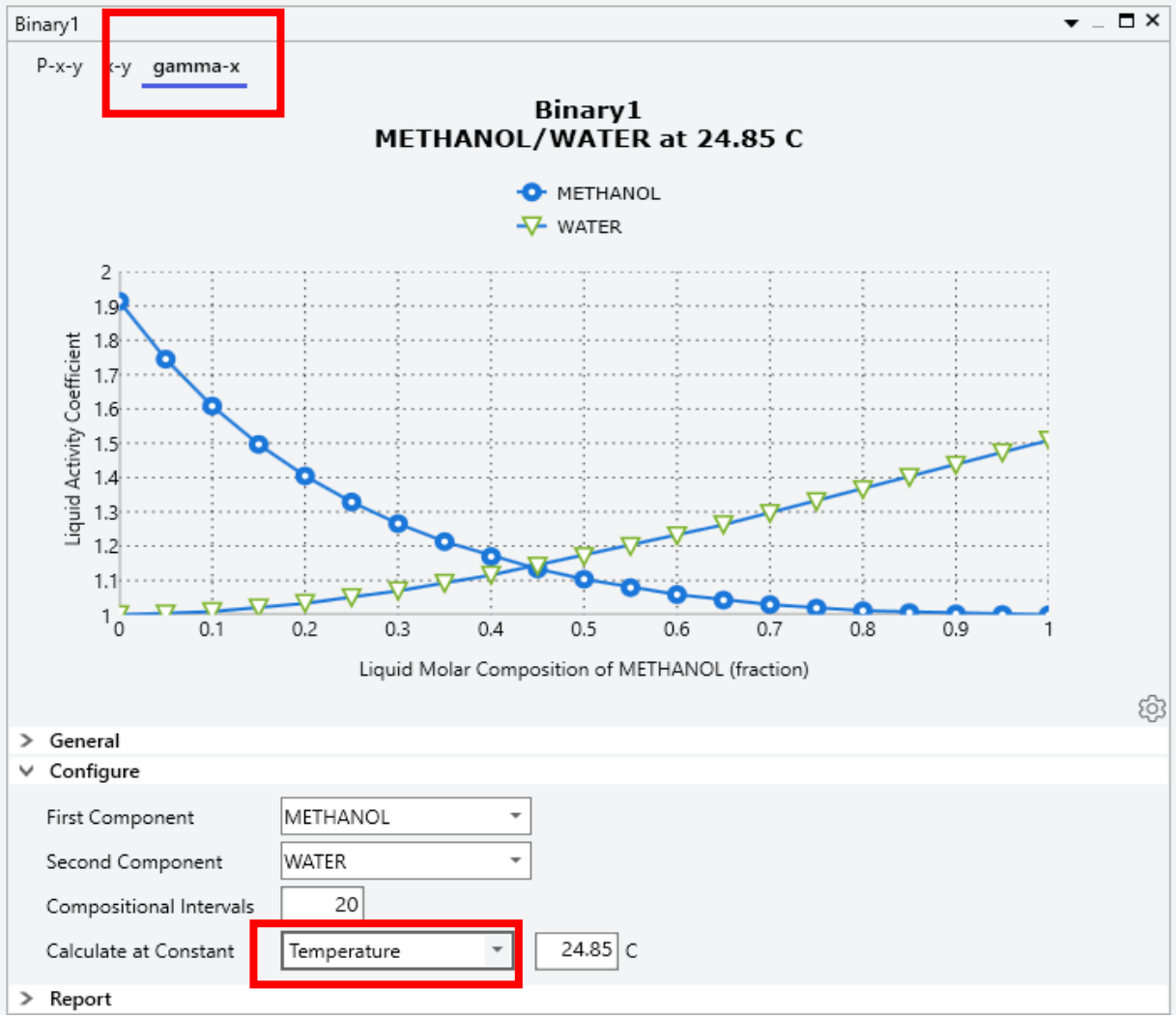
- Visualize the behavior of liquid activity coefficients to confirm that the thermo data is correct.

Solutions

- Binary Phase diagram
- Select constant temperature
- Select gamma-x tab

Status/Delivery

- AVEVA Process Simulation 5.3 Beta



Plot of gamma-x from example C1

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AVEVA™ Process Simulation 5.3 Beta Features

DECHEMA DPP Regression Improvements

Objectives/Background

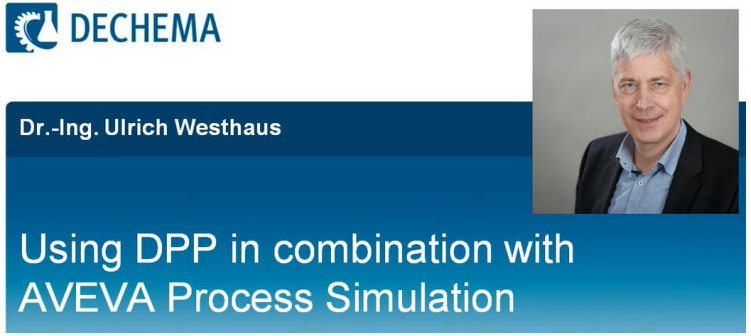
- Use the DECHEMA Data Preparation Package (DPP) to maintain company thermo data in a neutral format, and regress experimental data.

Solutions

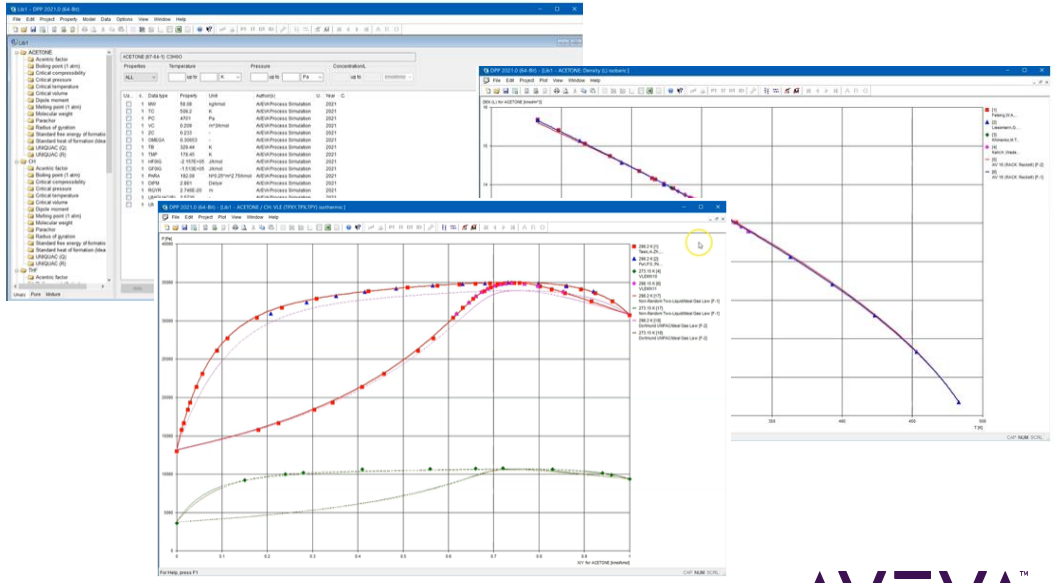
- DECHEMA has integrated DPP to AVEVA Process Simulation using the Thermo Access Interface.

Delivery Plan

- DPP 2021 "Preview Release" supports Ideal, NRTL, and Henry data for VLE and VLLE (version 5.2)
- Includes Wilson and UNIQUAC (version 5.3 Beta)
- Constant pure component properties (2022)
- SRK, SRKM, PR and PRM (2022) (DPP Update needed)
- More thermo methods as they are added to "Thermo Data Override"



Link to DECHEMA DPP Video by Dr. Westhaus



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AVEVA™ Process Simulation 5.0 –2022

Thermo Data Override

Objectives/Background

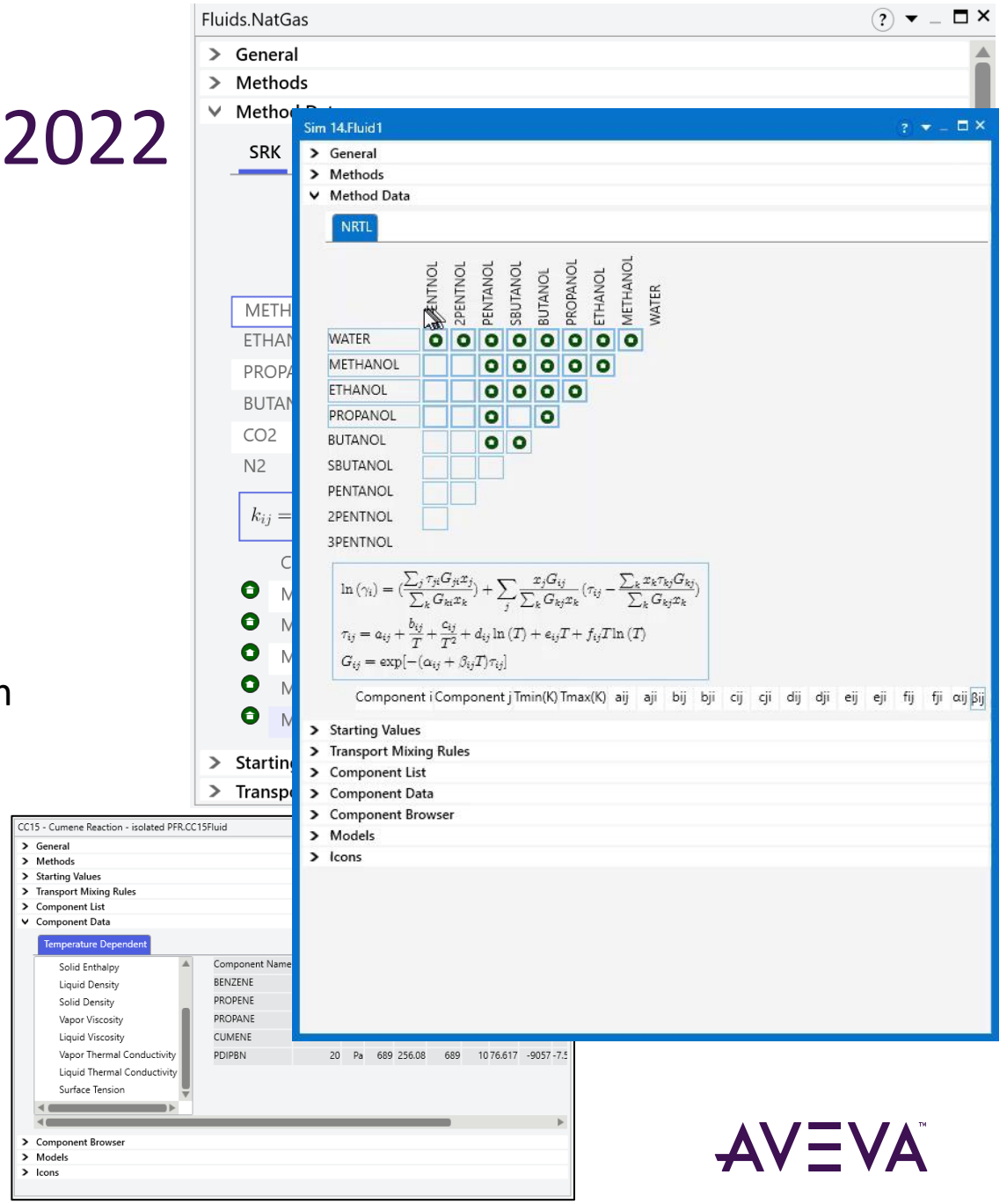
- Quickly see effect of thermo parameter changes on the simulation.
- Changing data in TDM is not simulation specific.

Solutions

- Fluid Editor contains thermo data to override TDM Library
- Updating lb1 and lb2 files no longer required.
- Thermodynamics specialists may share Fluid with other users in their company.

Delivery Plan

- Transport properties: Version 5.0 (Oct 2020)
- Wilson and UNIQUAC binary: Version 5.3 Beta (Jul 2021)
- SRK, SRKM, PR, PRM: Version 2022 (Oct 2021)
- SRKH, PSRK later release



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AVEVA™ Process Simulation 2022 Features

eNRTL Thermo Data Display

Objectives/Background

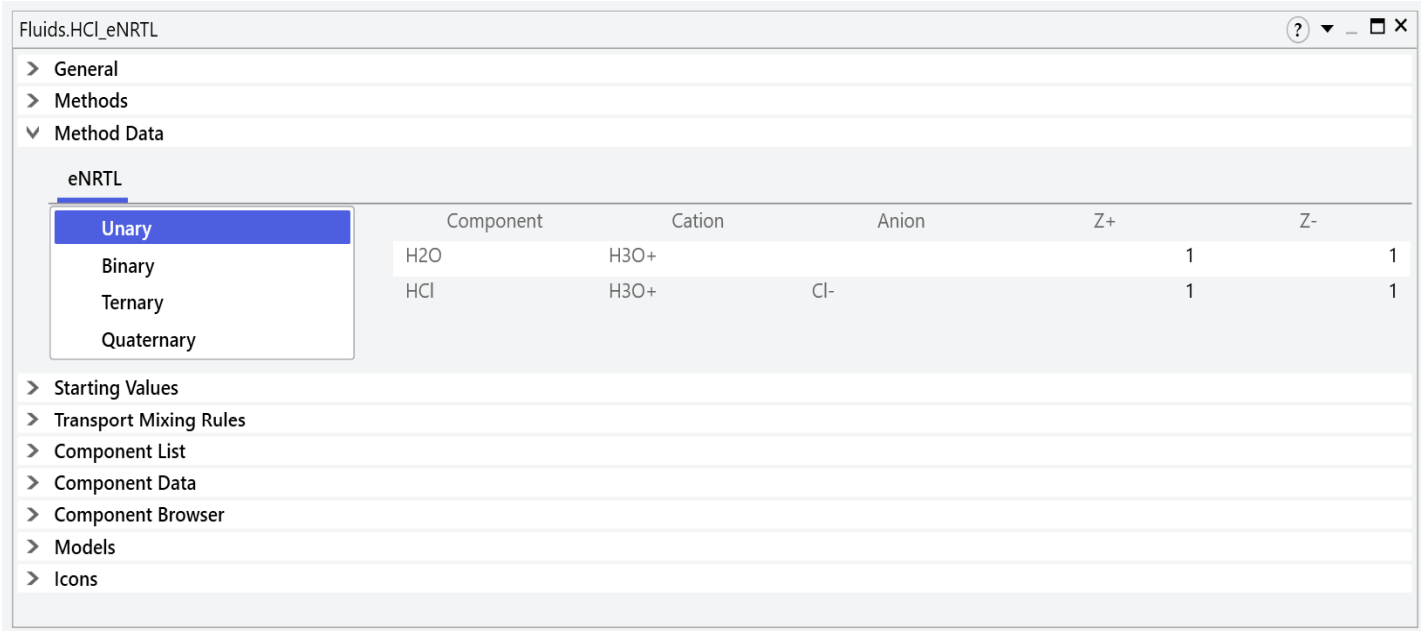
- Confirm electrolyte ion data in the fluid editor to be sure the correct ion data is being used..

Solution

- Allow users to display unary, binary, ternary, and quaternary method data in the fluid editor setting the way to being able to override it in a future release.

Status/Delivery

- Display of eNRTL data in version 2022
- Override of eNRTL data in a future release





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AVEVA™ Process Simulation 2022 Features

Excel® Thermo Data Library Generation Tool

Objectives/Background

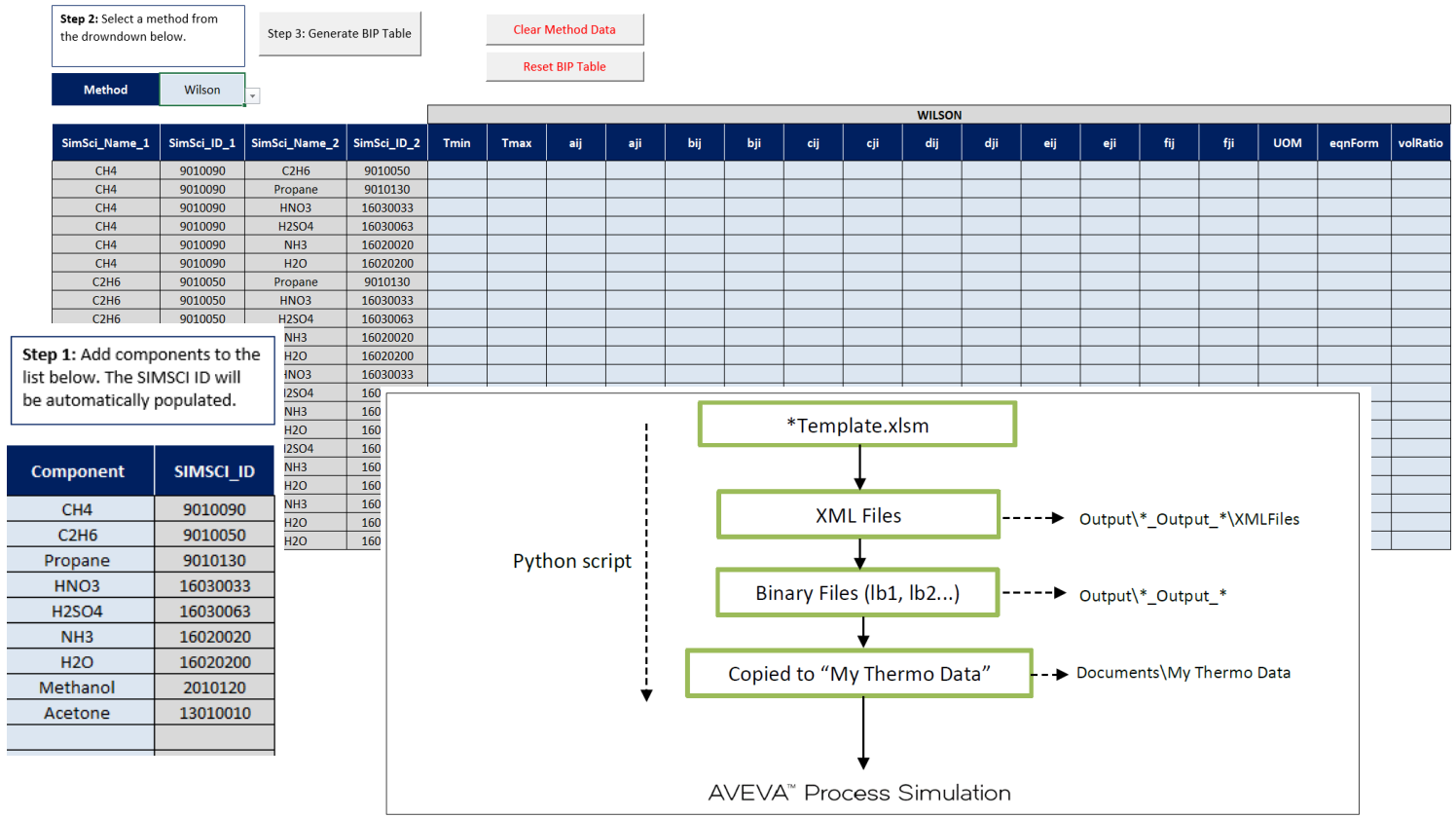
- Many companies keep their thermodynamic property data in Excel spreadsheets. Excel also provides an easy way to manipulate different correlation formulations.

Solution

- Special Excel Spreadsheet to add component and thermodynamic method data.
- Python scripts to automatically populate lb1/lb2 files

Delivery Plan

- Not in Release
- Must request from R&D



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AVEVA Process Simulation 2022

Models

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AVEVA™ Process Simulation 5.2 New Features

Batch Distillation Library

Objectives/Background

- Simulate batch distillation columns using a separate Batch library for conceptual engineering of batch processes.

Beta Feedback

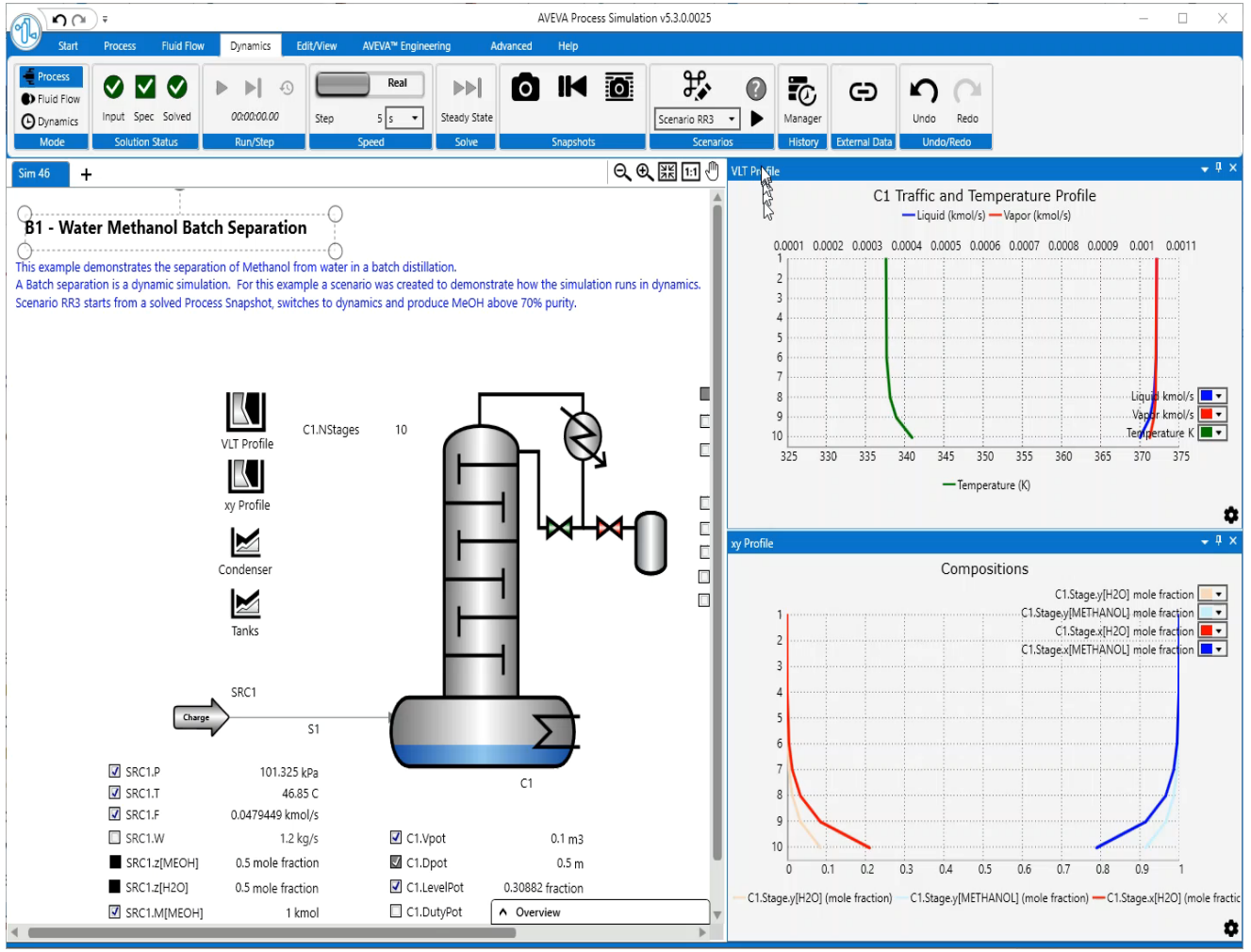
- Very positive feedback from six Customers in Japan and Germany
- Beta Complete and now part of AVEVA Process Simulation

Solutions

- One composed model with internal tanks.
- Flexible specification without having holdups in condenser/tray section.

Delivery Plan

- Version 5.2
- VLLE future version



Play Video

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AVEVA™ Process Simulation 5.3 Beta Features

Renewables Library for Green Hydrogen Production

Objectives/Background

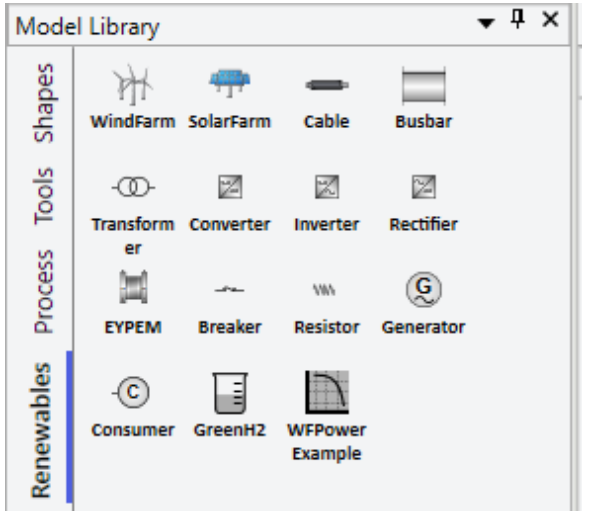
- Create electrical power networks for the design of green hydrogen generation.
- Combine refinery power, heat, fuel gas and hydrogen balances.

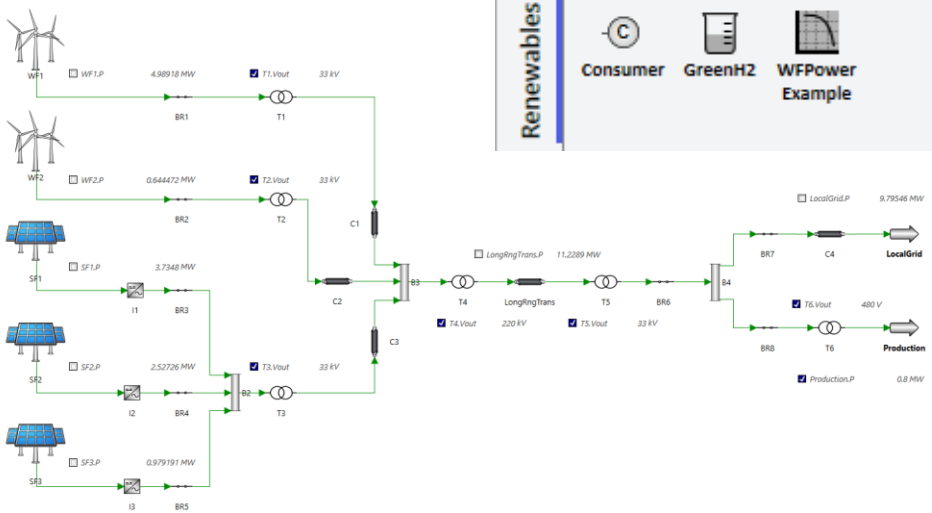
Solution

- Wind and Solar Farms
- Optional Electrical objects like Transformers, Inverter, Rectifiers, Bus, Cable
- Electrolyzer
- Green H2 Fluid

Delivery Plan

- Available from R&D for 5.3 Beta
- Import Renewables.libx from Examples Folder in Version 2022





Example SS1 Renewable power Example (separate slide)

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AVEVA™ Process Simulation 5.3 New Features

Greenhouse Gas Emissions in Economics Library

Objectives/Background

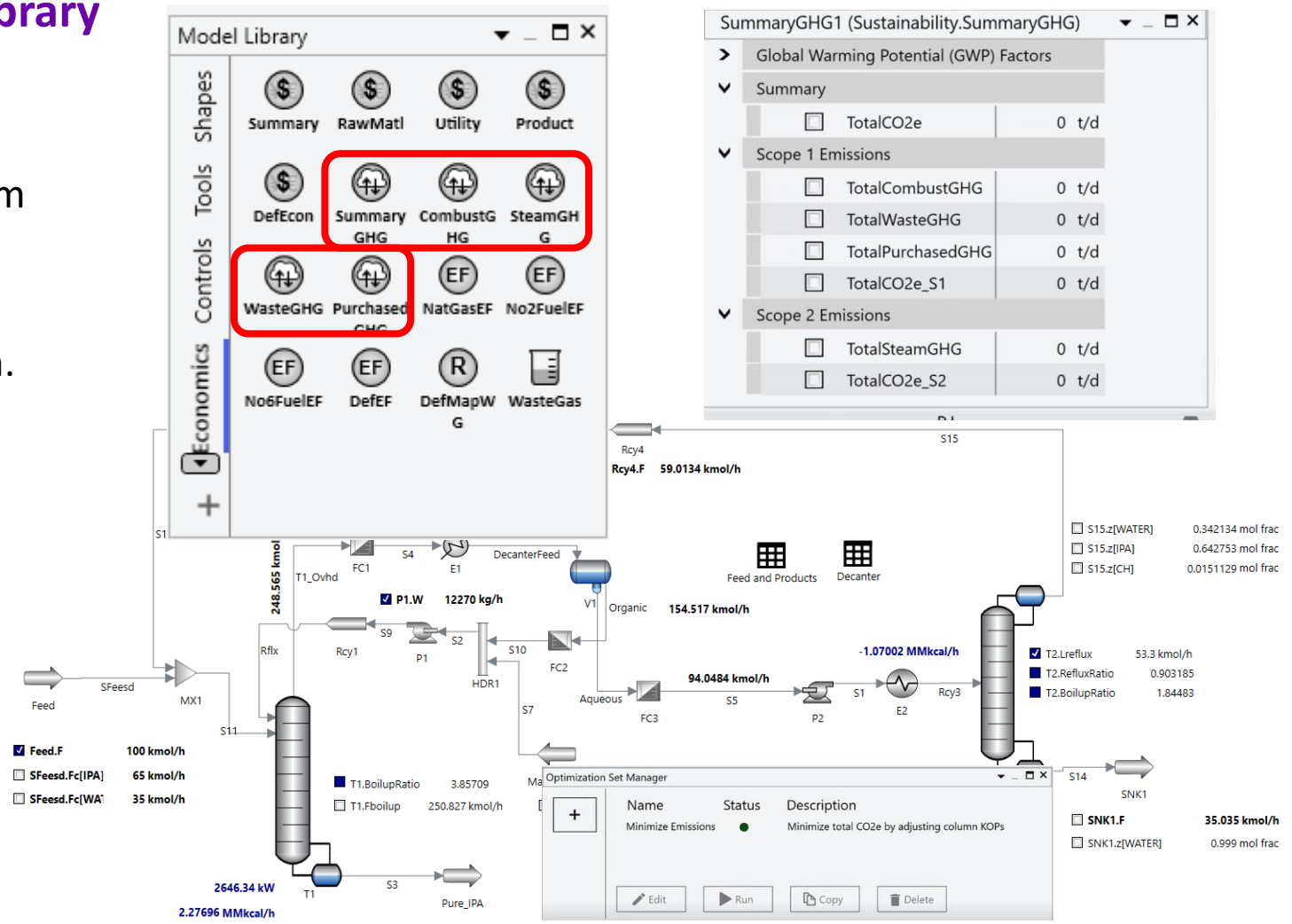
- Companies must use complex spreadsheets to calculate equivalent CO2 (CO2e) production from US EPA which are tedious to use.

Solution

- Greenhouse gas calculation is part of simulation.
- Same as US EPA Spreadsheets but can be customized for any regulatory body
- Update EPA GWP Factors
- Calculate CO2 equivalent (CO2e)
- See results instantly instead of later after completing spreadsheets
- Use optimization to optimize design to minimize GHG emissions

Delivery Plan

- AVEVA Process Simulation 5.3 Beta



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AVEVA™ Process Simulation 5.0 New Features

Economics Model Library

Objectives/Background

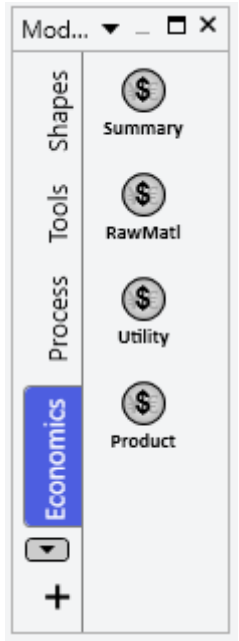
- Engineers want to create a design which reduces operating costs include feeds cost and utility costs such as water, steam, fuel, and electric power. But every facility may have unique facilities.

Solutions

- The Economics library provides templates for Extension Submodels that can extend the existing flowsheet models to calculate their operating cost.
- Copy models from Economics to Simulation to customize them for your plants utilities, feeds, and products.

Delivery Plan

- Economics Library in Example Libraries Folder
- Version 5.0 (October 2020)



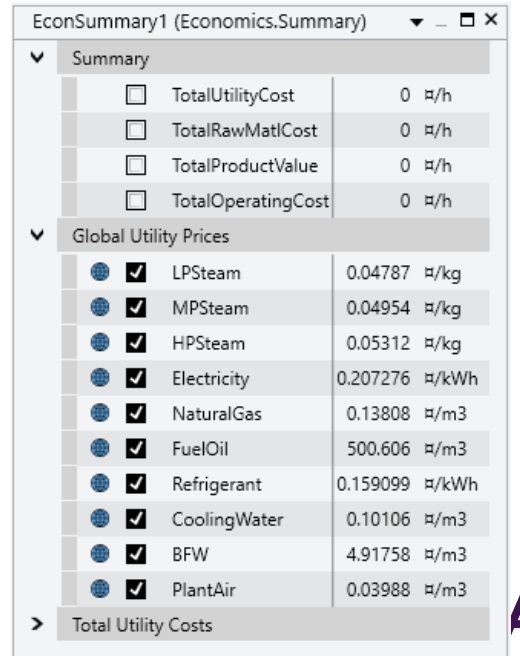
Example Models to copy to your simulation folder

Summary: Example Top level model to show summary of all costs and set utility prices.

Example Raw material cost extension model.

Example Utility cost extension model.

Example Product cost extension model.



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AVEVA™ Process Simulation 5.2 New Features

Measurement Model Preview

$$Total\ Error = Weight \sum (PV - Scan)^2$$

Objectives/Background

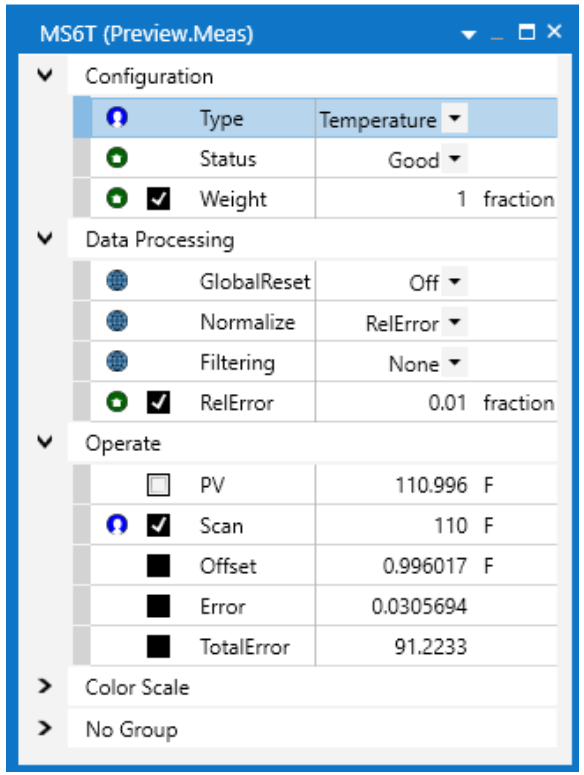
- Tuning simulations to match plant data is time consuming particularly when you have more measurement data than tuning handles.

Solutions

- The Measurement model from preview calculates the total error of all measurements in the plant.
- Can be fed from OSI PI
- Color or icon shows degree of error.
- Uses average error or square or error

Delivery Plan

- Version 5.2 Preview Library (April 2021)



See GG3 Example in following slides

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AVEVA™ Process Simulation 5.0 New Features

Liquid Ring Vacuum Pump

Objectives/Background

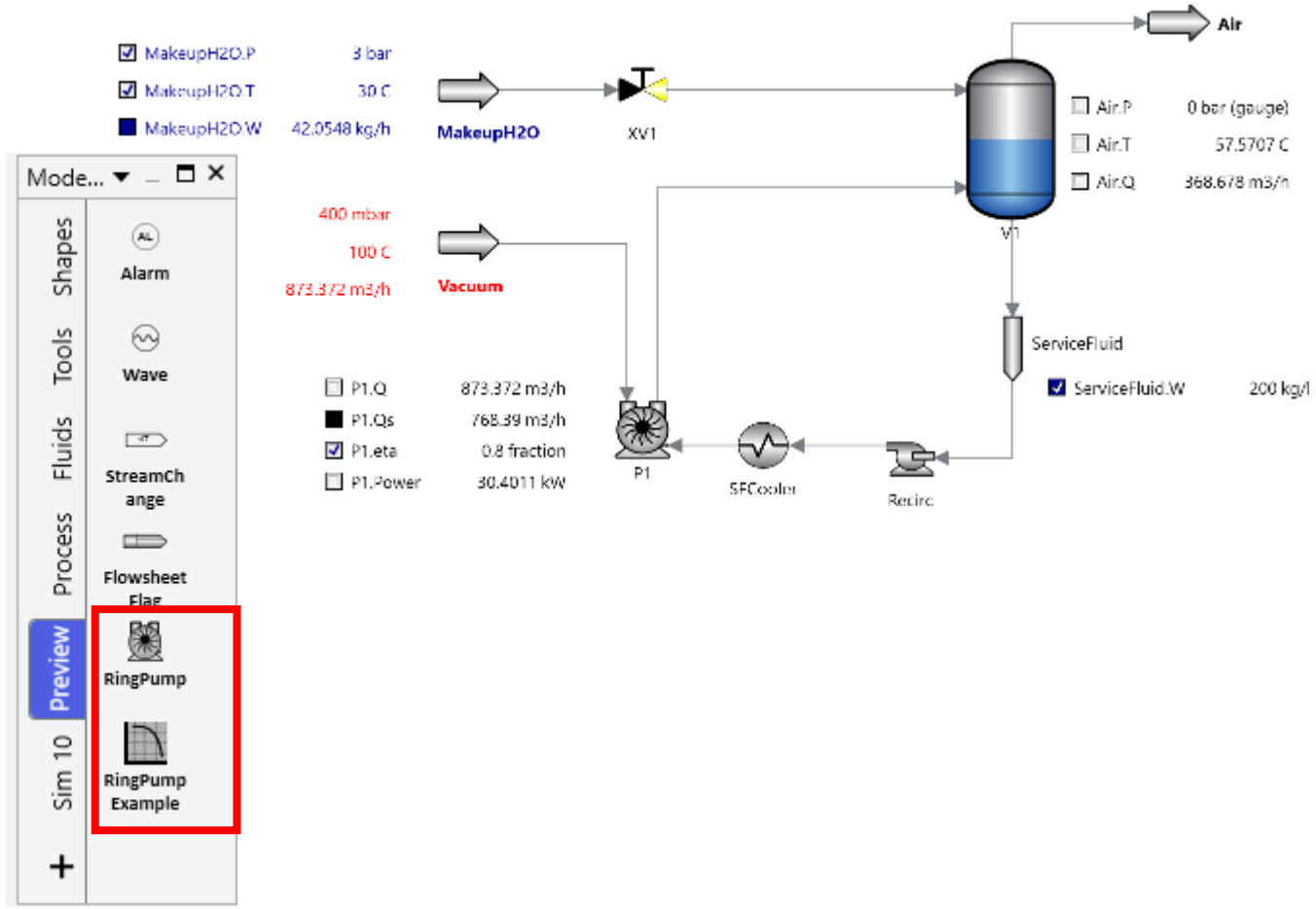
- Liquid Ring Vacuum Pumps (LRVP) are parts of chemical processes and have no suitable process model

Solutions

- The RingPump model provides a basic mass and energy balance for a liquid ring vacuum pump including the vapor and liquid seal .
- Example curve available.
- Only process mode

Delivery Plan

- Version 5.0 (October 2020)



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AVEVA™ Process Simulation 5.2 New Features

Excel Reaction Generator Tool

Objectives/Background

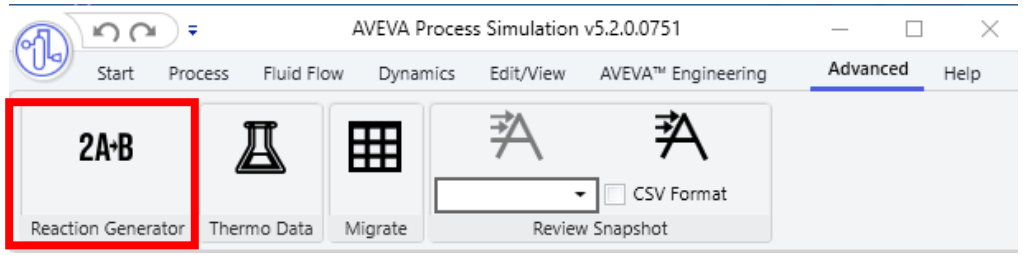
- Easily prepare reaction models for all reactors using this Microsoft Excel tool that creates the submodel for you.

Solutions

- Available from Advanced Ribbon
- Generate a library containing the submodel for parallel or sequential CNVRs
- EQR, CSTR and PFR support
- Up to 40 reactions

Delivery Plan

- Version 5.1 available as a preview in the simulation reports folder
- Version 5.2 supports EQR and PFR and called from Ribbon



Available from Advanced Ribbon

Default Library Name	GeneratedRxnLib
Reaction Model Name	RxnSubmodel
Number of Reactions	2
Reaction Type	Kinetic

Reset | Load Components from Fluid

Generate AVEVA Process Simulation LIBX File

REACTION 1: ETHANOL + ACETIC = EOAC + H2O

	Name	Stoich	Full Component Name	Order
1	ETHANOL	-1.000	Ethanol	1
2	ACETIC	-1.000	Acetic Acid	1
3	EOAC	1.000	Ethyl Acetate	
4	H2O	1.000	Water	

KINETIC DATA

Activity Phase	Liquid
Activity Basis	Molar Concentration

Rate Basis	Volume

$$Rate = A \cdot exp\left(\frac{-E_a}{RT}\right) \cdot T^n \cdot \prod [Component]^{Order}$$

Pre-exponential Factor (A)	483.33
Activation Energy (Ea)	59445.1
Temperature Exponent (n)	

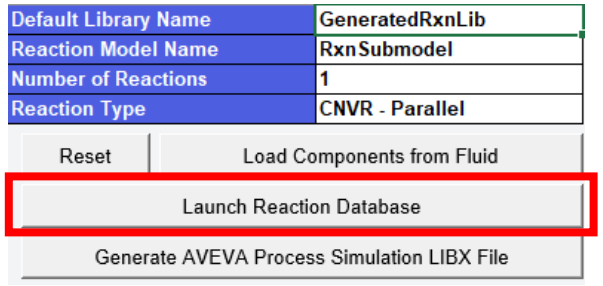
Define the order of reaction with respect to each component on the left. Blank components will be treated as zero order.

Units	
Temperature	K
Pressure	kPa
Moles	kmol
Mass	kg
Volume	m3
Energy	kJ
Time	s

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AVEVA™ Process Simulation 2022 Features

Reaction Database



Objectives/Background

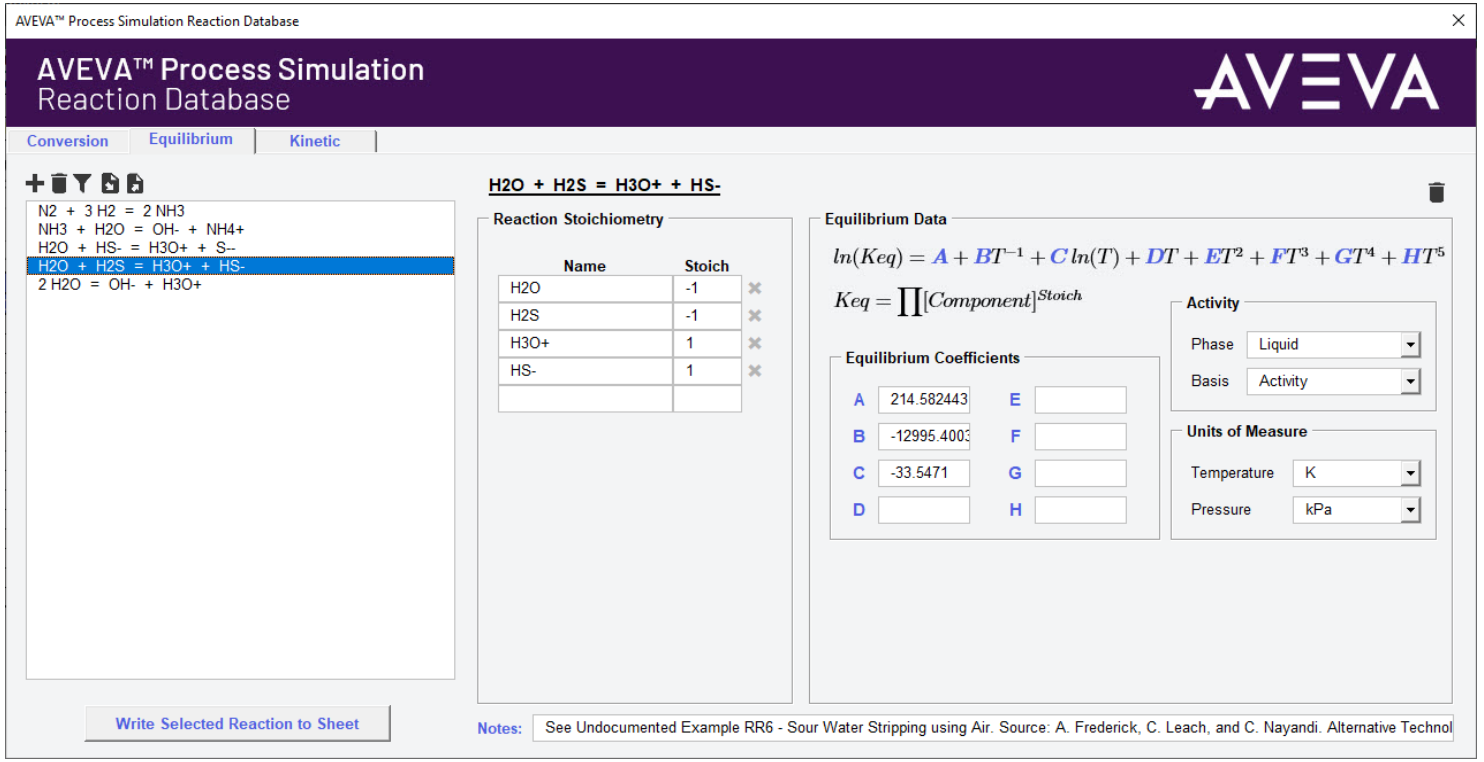
- When writing reaction submodels, you may want to save the reaction data for use later

Solution

- Save, load, and write reactions directly to the Reaction Generator from the new Reaction Database UI
- Export and Import data from others at your company
- Simplifies Electrolyte reaction management.
- Access a set of pre-defined reaction data from AVEVA

Delivery Plan

- Version 2022 – Launch from the Reaction Generator



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AVEVA Process Simulation 2022

Example Simulations

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AVEVA™ Process Simulation 5.2 New Features

Example GG3 Chiller Plant Reconciliation

Objectives/Background

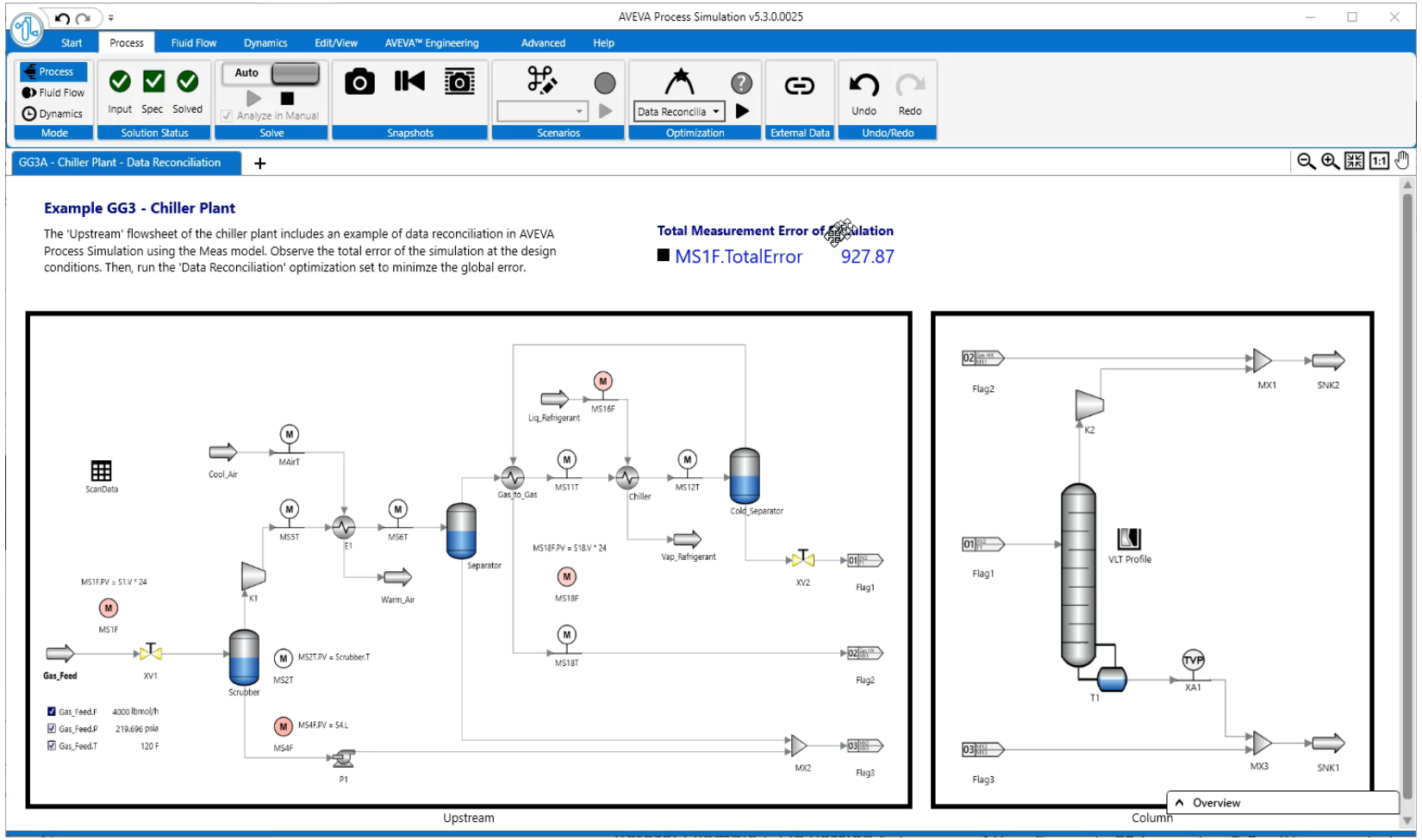
- Users can connect to data from OSI PI interface and can reconcile their simulation with plant data.

Solution

- Example Simulation that shows Preview Measurement model to reconcile data.
- Well known Chiller Plant from ROMeo

Delivery Plan

- Undocumented example in 5.2.



Play Video to see total error reduce

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AVEVA™ Process Simulation 2022 Features

Example B3 – Biodiesel

Objectives/Background

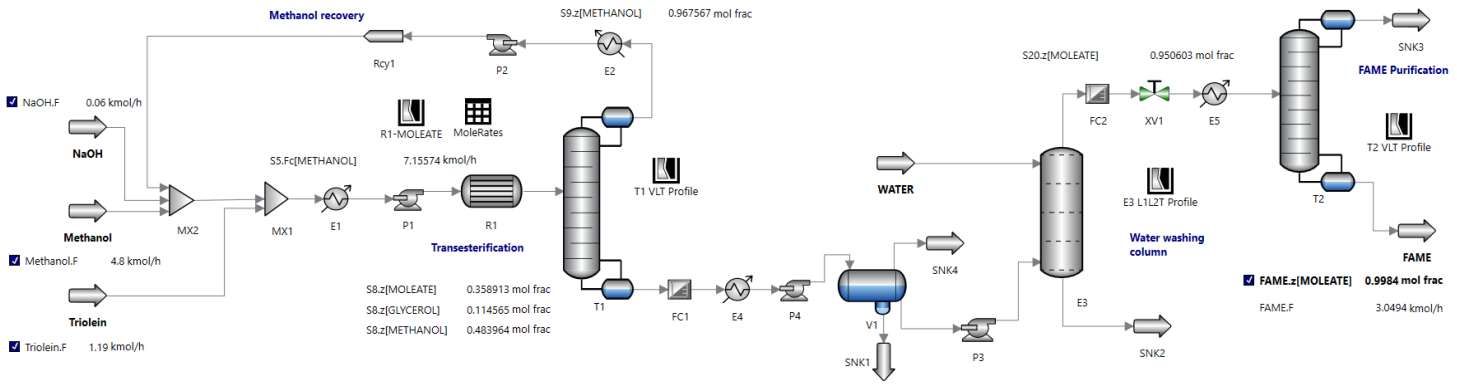
- Model a biodiesel production process

Solution

- Fatty Acid Methyl Ester (FAME) Production
- Representative Triglyceride, Diglyceride, and Monoglyceride component data.
- Representative FAME Reaction Kinetics

Delivery Plan

- Version 2022 in Undocumented Examples



This example demonstrates a biodiesel (Fatty acid methyl ester - FAME) production from Triglycerides (Triolein) using alkali catalyzed transesterification reaction.

The following step-wise transesterification of methanol with triglyceride reactions are modeled in the Reaction submodel

1. Triglyceride + Methanol <----> Diglyceride + FAME
2. Diglyceride + Methanol <----> Monoglyceride + FAME
3. Monoglyceride + Methanol <----> Glycerol + FAME

Triolein (glycerol esterified with a free fatty acid called oleic acid commonly found in various oil sources) is used to represent triglycerides and Methyl Oleate (MOLEATE) is used to represent FAME in this example. This example can be extended for any other triglycerides and FAME with appropriate binary interaction and kinetic parameters.

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AVEVA™ Process Simulation 5.3 Beta Features

Example CC28 – H2 Production by Steam Methane Reforming

Objectives/Background

- Demonstrate SMR design is critical for gray/blue hydrogen economy.

Solution

- Detailed PFR kinetic reactions to implement user's level of detail.
- LT and HT Shift Reactors
- GHG Emission Calculation

Delivery Plan

- Version 5.3 Beta in Undocumented Examples

This example demonstrates a typical process to produce Hydrogen via Steam Methane Reforming (SMR). Natural Gas and high-pressure steam are reacted over a Ni / MgAl2O4 catalyst to produce H2, CO, and CO2. The CO and H2O in the outlet stream are then further refined in high-temperature and low-temperature water gas shift reactors. These reactors convert much of the remining CO and H2O into H2 and CO2. The final step of the process (not modeled here) separates H2 from the remaining components using Pressure Swing Adsorption (PSA).



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AVEVA™ Process Simulation 5.3 Beta Features

Example SS1 – Renewable Electric Grid

Objectives/Background

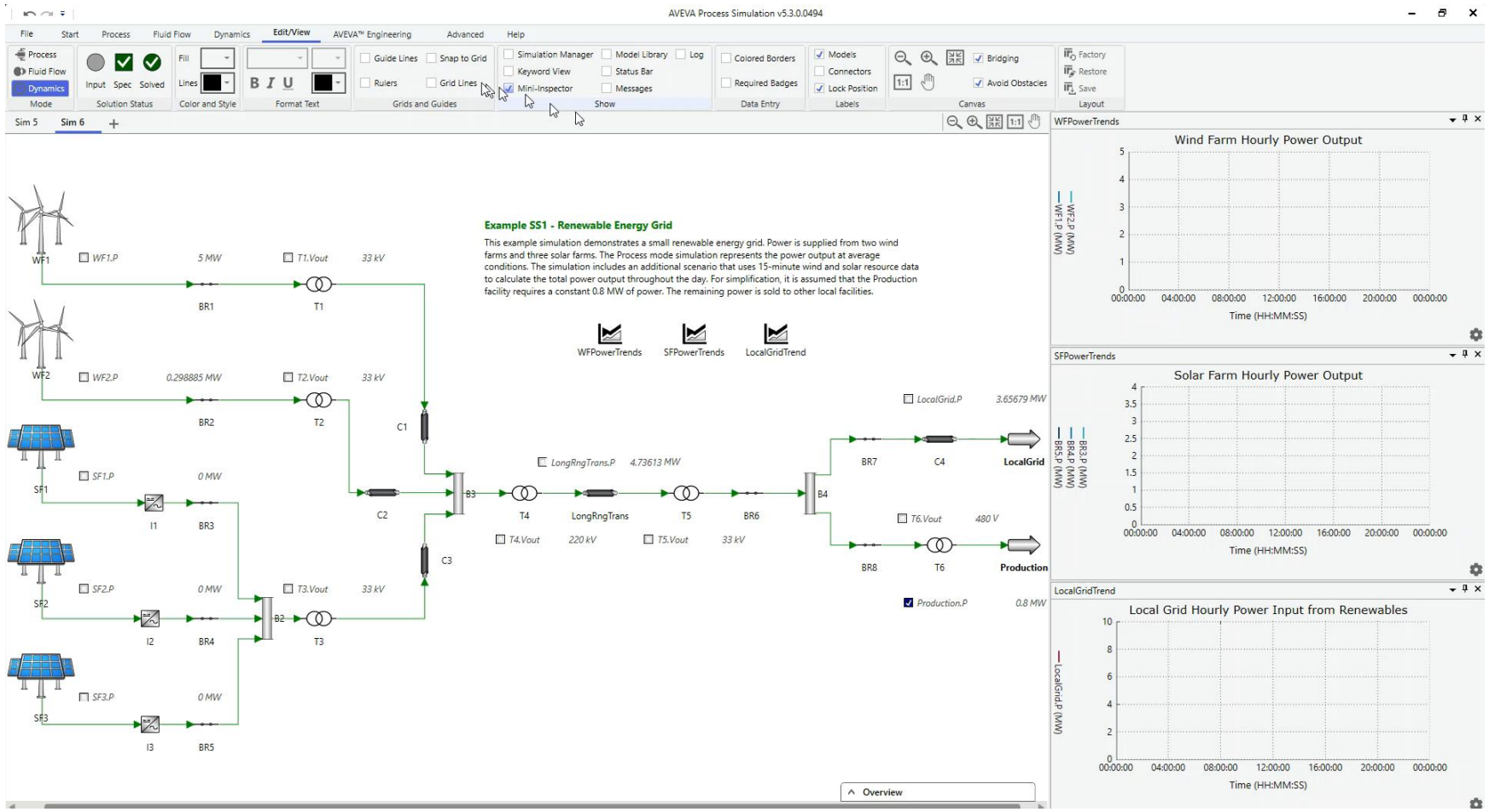
- Demonstrate a renewable grid to produce power

Solution

- Wind Farm
- Solar Farm
- Electrical Grid
- Dynamic case with wind and solar data every 15 minutes.

Delivery Plan

- Import Example Library Renewables



Play Video

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AVEVA™ Process Simulation 5.3 Beta Features

Example SS2 – H2 Production via PEM Electrolysis

Objectives/Background

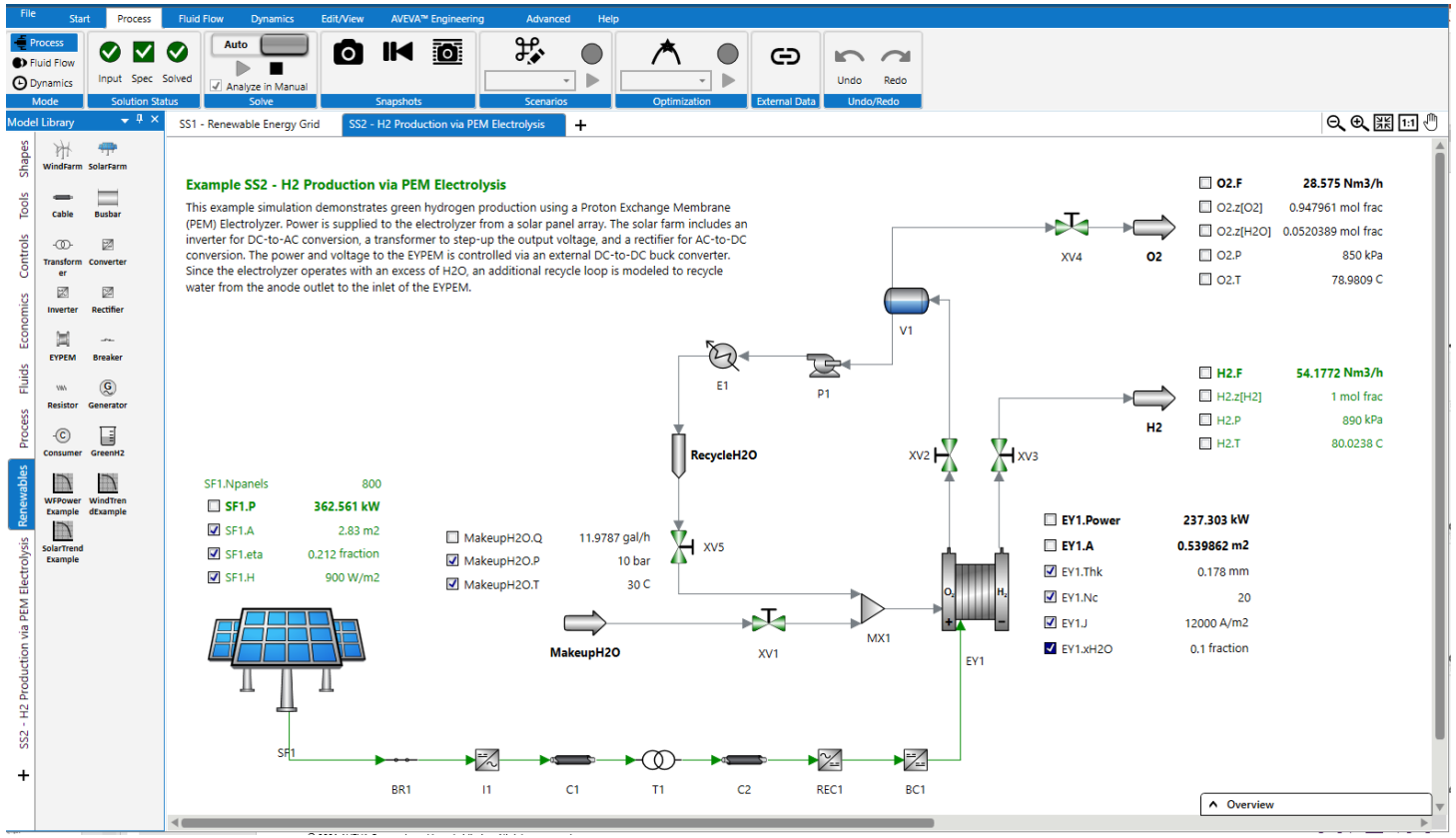
- Demonstrate creating green hydrogen from a Proton Exchange Membrane (PEM) electrolyzer

Solution

- Size a PEM electrolyzer to produce green hydrogen
- Connect the electrolyzer to renewable energy sources

Delivery Plan

- Import Example Library Renewables
- Version 2022 in Undocumented Examples



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Live Demos

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V5.2 Scripting Interface Video (4”37)



Greenhouse Gas Minimization (5:30)



V5.2: Measurement Model Video (2:51)



©

Batch Distillation Video (2:47)



©

Greenhouse Gas Minimization (5:30)



01 Vision of AVEVA Process Simulation

02 New Features

03 **Roadmap**

04 Feedback and Comments

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01 Vision of AVEVA Process Simulation

02 New Features

03 Roadmap

04 **Feedback and Comments**

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slido

Is your company’s business strategy impacted either by changes to a hydrogen economy or a circular economy?
Check all that apply, or are areas that your company is moving into:

ⓘ Start presenting to display the poll results on this slide.

slido

How are sustainability industry trends affecting you?

ⓘ Start presenting to display the poll results on this slide.

slido

Are any of these areas being de-emphasized? Check what applies to you:

ⓘ Start presenting to display the poll results on this slide.

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With regard to sustainability, what key features are you most concerned about having in the software? (Please type your response).

ⓘ Start presenting to display the poll results on this slide.

slido

In your role, what are you doing differently due to changes in business strategy? (Please type your response).

ⓘ Start presenting to display the poll results on this slide.

slido

For your work with AVEVA Simulation models and software, what are your three top concerns or complaints? (Please type your response.)

ⓘ Start presenting to display the poll results on this slide.



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ABOUT AVEVA

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operational life cycle of capital-intensive industries.

The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

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