



Webinar: Reduce Energy Use and Emissions with Process Design Workflows That Integrate Energy Analysis

Frequently Asked Questions

Q: What is Activated Energy Analysis? What is benefit of using Activated Energy Analysis?

AspenTech: Activated workflow integrated within process simulators (Aspen Plus®, Aspen HYSYS®) is a very good example of automating complex analyses in engineering products. Activated Energy Analysis enables automated analyses of plants to generate and evaluate options on how to improve the energy efficiency of the process by optimizing energy usage (e.g., reducing hot and cold utility consumption) and reducing greenhouse gas emissions. In order to accomplish energy reduction, Activated Energy Analysis runs Aspen Energy Analyzer™ in the background to perform the energy target calculations and retrofitting studies.

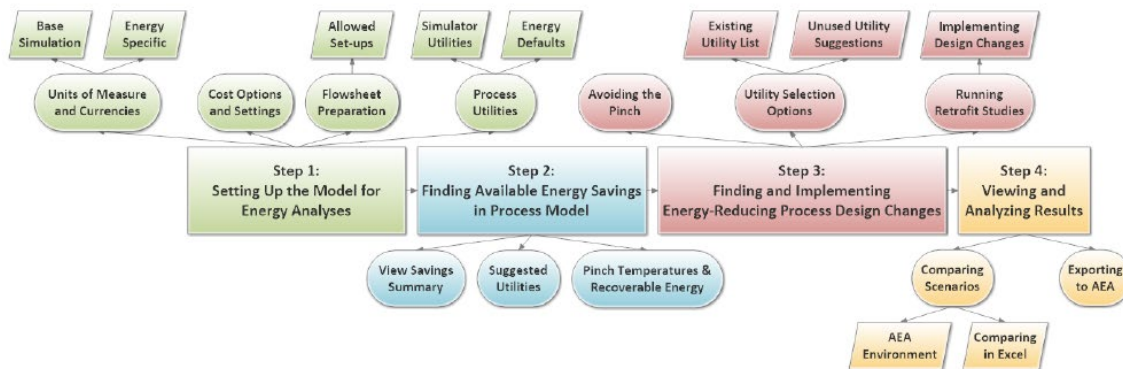
Q: What are steps involved in Activated Energy Analysis?

AspenTech: The Activated Energy Analysis workflow uses pinch and optimization techniques to find and assess energy-saving opportunities for new plants or for revamps. Continuous analysis and optimization of energy use and carbon emission reduction is important to every process plant's operational cost and capital cost. The steps involved in an energy analysis in Aspen HYSYS and Aspen Plus are:

1. Setting up the model and adding any additional HEN information which was not present in the heat and material balance of the process.
2. Finding available energy savings in a targeting step where the pinch temperatures, optimal utilities and recoverable energy summaries are defined.
3. Finding and implementing energy-reducing process design changes such as avoiding the pinch temperatures, selecting better utilities when advised and running

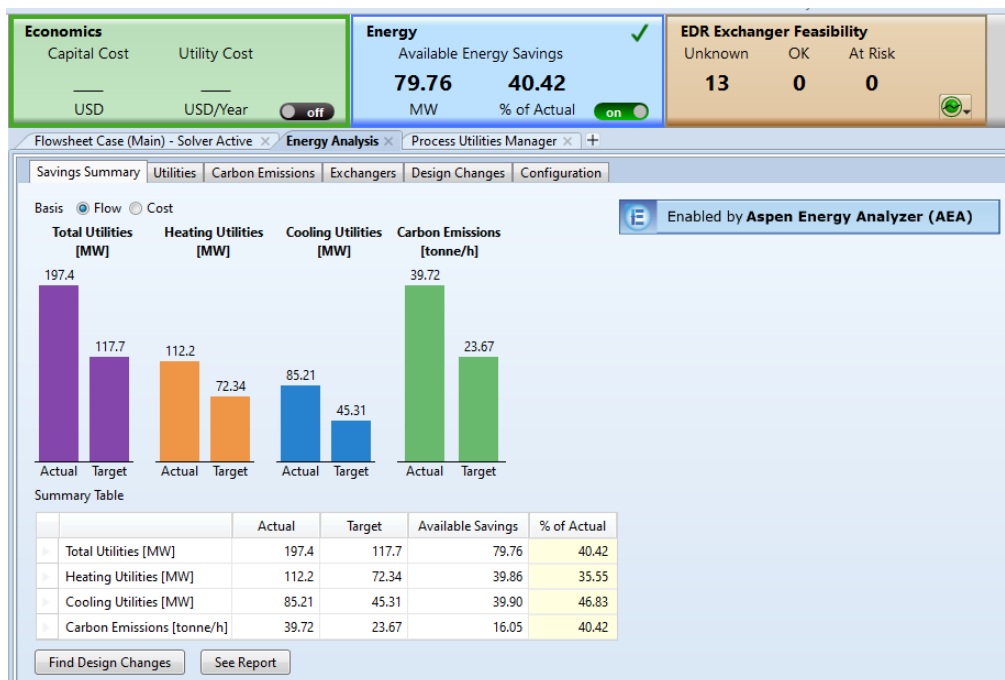
retrofit studies to explore adding exchangers, adding exchanger areas or relocating existing exchangers.

- Viewing and analyzing various combinations of options for feasible and economical and feasible energy savings.



Q: : How are the targeted values calculated in Activated Energy Analysis?

AspenTech: The targeted values of heating and cooling consumptions are calculated using pinch analysis through Aspen Energy Analyzer. Target usage represents an ideal situation for the minimum utilities required to satisfy the process stream requirements. Savings potential and energy cost savings are calculated based on these targets. The results are then populated back to the energy dashboard once the calculation is completed.

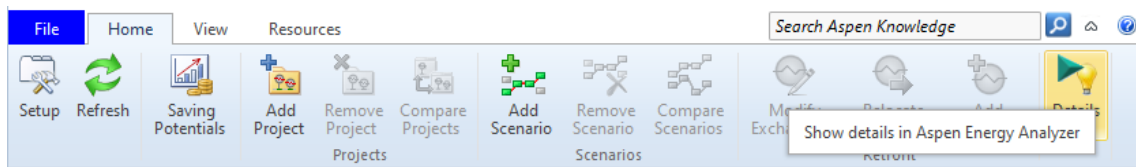


Q: Can I make additional modifications (e.g., adding multiple heat exchangers or relocating multiple heat exchangers) on top of the previous modifications to the heat exchanger network?

AspenTech: Yes. Even though the retrofit engine only allows user to add or relocate one heat exchanger at a time, the user can still add or relocate more exchangers sequentially in multiple run. Using the scenario tree is a great way to organize the revamping options in the Energy Analysis environment. Multiple designs can be created in one scenario. The energy savings from each design is cumulative from the base simulation case.

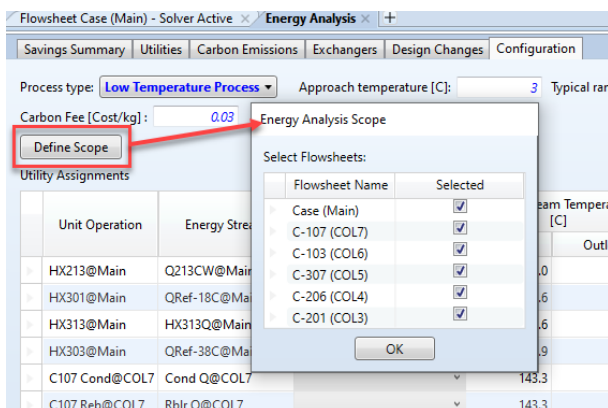
Q: How do you switch from Activated Energy Analysis to the stand-alone Aspen Energy Analyzer application? Do you need to re-enter input data?

AspenTech: The quickest way to get results from Aspen Energy Analyzer is to use the Activated Energy Analysis panel, but you can use the energy analysis environment to get more detailed results and specify options for how those results are computed. Click Energy Analysis on the navigation panel, and when in the energy analysis environment, on the Home ribbon tab, click Details. This will export your information to Aspen Energy Analyzer where you can find more information.



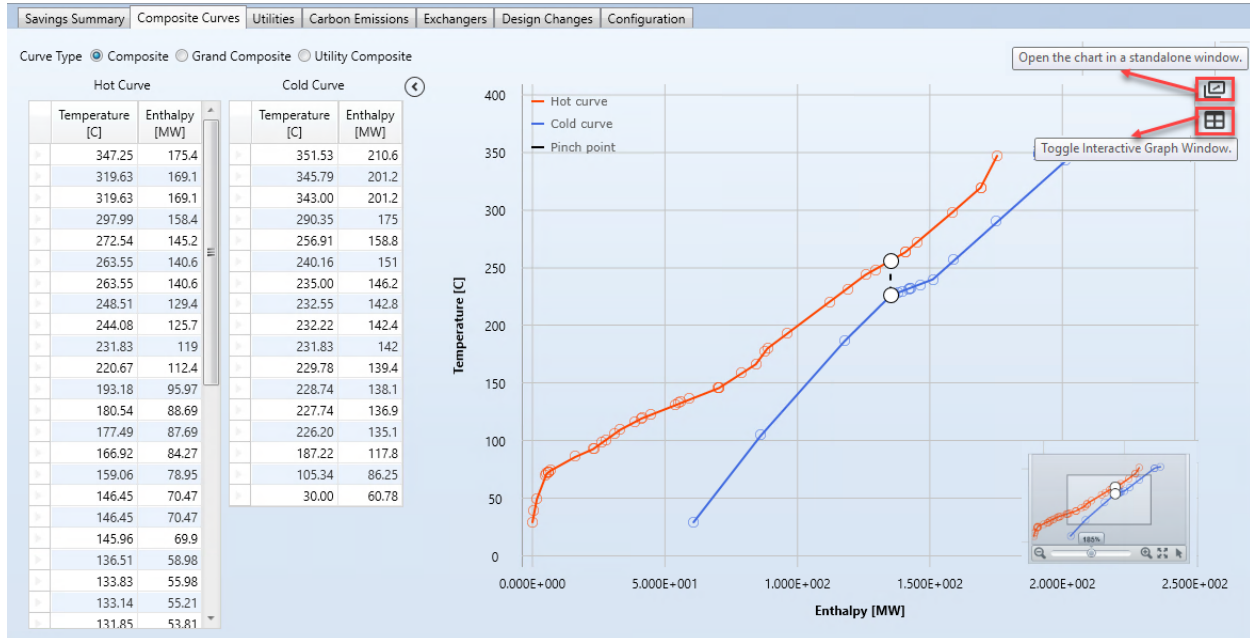
Q: Can I select only a specific section of the flowsheet or only a specific column(s) to perform energy analysis?

AspenTech: Yes, a user can select the scope of the energy analysis. For instance, they can choose only to include the columns or exclude them. They can use the Define Scope button on the Configuration tab to select the Flowsheets included for the analysis.



Q: Can you see the composite curves generated by the pinch analysis?

AspenTech: Yes, starting with the V14.5 release, information such as composite curves, grand composite curves and utility composite curves can now be viewed within Activated Energy Analysis, under the new Composite Curves tab. Results can be viewed both as tabular form and plots. The stream segments display supply, target temperatures and enthalpy; pinch point is shown on the plots as well.



Q: Can I export the Activated Energy Analyzer results to Excel to compare scenarios and key results?

AspenTech: Comparing scenarios is an important aspect in every energy analysis because various alternatives have different costs or impact on the overall process. There are two main ways of comparing energy analyses: via the Energy Analysis environment and via Excel.

Q: Have others had success with Activated Energy Analyzer?

AspenTech: Yes, countless customers have told us about the value they have achieved from using Aspen Energy Analyzer integrated with Aspen Plus and Aspen HYSYS:

- **LG Chem** increased capacity by 15% and saved energy through heat integration using Aspen Plus, Aspen Energy Analyzer and Aspen Exchanger Design and Rating™.

- **SCG** saw great value of the integration of activated energy analysis within Aspen HYSYS. They utilized activated energy analysis as a component of their workflow to optimize their process through heat integration resulting in a 24% reduction in steam usage. Additionally, this workflow led to a savings consumption of steam (13 barg) and a debit production of steam (4.5 barg) to be internally used in the SCG novel process. They found activated energy analysis to be a powerful tool that not only helped to guide solutions of energy savings but also evaluate those solutions in terms of payback period.
- **Samsung** saved over 20% of their energy consumption by using AspenTech solutions to uncover 12 different opportunities across the plant to reduce energy and resulted in savings worth over \$12 million dollars.

Q: How do I get started?

AspenTech: Click on the below links for step-by-step guidelines on

1. [Activated Energy Analysis Demo for Aspen Plus](#)
2. [Activated Energy Analysis Demo for Aspen HYSYS](#)

Additionally you can access recent webinar :

<https://www.aspentech.com/en/resources/on-demand-webinars/reduce-energy-use-and-emissions-with-process-design-workflows-that-integrate-energy-analysis>

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Aspen Technology (NASDAQ:AZPN) is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance lifecycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence. For more information, visit [aspentech.com](https://www.aspentech.com).