

## **Readme file for NREL 2017 biochemical sugar model (BC1707A):**

This model has been created to reflect NREL's latest research and modeling work around biomass deconstruction to hydrolysate sugars, including updated pretreatment design and cost parameters as documented in [Davis et al. 2013](#) and [Davis et al. 2015](#). This is a stand-alone model for lignocellulosic sugar production, with the final product costed as "minimum sugar selling price" (MSSP) in the accompanying Excel spreadsheet. The model is automated to allow the user to select from three options: (1) dilute acid (DA) pretreatment, (2) deacetylation and dilute acid (DDA) pretreatment, or (3) deacetylation and mechanical refining (DMR) pretreatment. Upon selecting the desired operating mode in the calculator PRETREAT, the model will pre-populate initial operational and yield parameters into the pretreatment and enzymatic hydrolysis unit operations, all of which can be modified as appropriate. The Excel spreadsheet allows the user to select either raw dilute or concentrated sugars as the basis for costing, based on selecting the hydrolysate product either before or after an optional mechanical vapor recompression (MVR) evaporator; in both cases, the hydrolysate is first clarified across a vacuum belt filter to remove solids which are routed to the boiler.