

Scientific publications

Deliveries from projects within f3 and the collaborative research program *Renewable transportation fuels and systems* (f3 and the Swedish Energy Agency)

Several f3 projects, both from phase 1 (2011-2014) and the current phase 2 (2014-2017) have delivered results in the form of scientific publications. This list includes published articles and linked projects up until April 2017 and is presented in publish date order.

- [*Is there a future in glycerol as a feedstock in the production of biofuels and biochemicals?*](#) Article by Bauer, F. & Hulteberg, C., published in Biofuels, Bioproducts and Biorefining, November 2012. Linked project: [Glycerol-based isobutanol](#).
- [*Possibilities for sustainable biorefineries based on agricultural residues – A case study of potential straw-based ethanol production in Sweden*](#). Article by Ekman, A., Wallberg, O., Joelsson, E. & Börjesson, P., published in Applied Energy in February 2013. Linked project: [Sustainable performance of lignocellulose-based ethanol and biogas produced in innovative biorefinery systems](#).
- [*Biofuel futures in road transport - A modeling analysis for Sweden*](#). Article by Börjesson, M., Ahlgren, E.O., Lundmark, R. & Athanassiadis, D., published in Transportation Research Part D: Transport and Environment, October 2014. Linked project: [Scenarios for large-scale integration of renewable fuels in the Swedish road transport sector](#).
- [*Ethanol production in biorefineries using lignocellulosic feedstock – GHG performance, energy balance and implications of life cycle calculation methodology*](#). Article by Karlsson, H., Börjesson, P., Hansson, P-A. & Ahlgren, S., published in Journal of Cleaner Production, November 2014. Linked project: [Ethanol production in biorefineries using lignocellulosic feedstock – GHG performance and energy balances](#).
- [*Greenhouse gas and energy assessment of the biogas from co-digestion injected into the natural gas grid: A Swedish case-study including effects on soil properties*](#). Article by Lantz, M. & Börjesson, P., published in Renewable Energy, November 2014. Linked project: [Impact of biogas energy crops on GHG emissions, soil organic matter and food crop production – A case study on farm level](#).
- [*Bioenergy futures in Sweden – system effects of CO2 reduction and fossil fuel phase-out policies*](#). Article by Börjesson, M., Athanassiadis, D., Lundmark, R. & Ahlgren, E.O., published in GCB (Global Change Biology) Bioenergy, December 2014. Linked project: [Scenarios for large-scale integration of renewable fuels in the Swedish road transport sector](#).
- [*Towards a Bioeconomy in Europe: National, Regional and Industrial Strategies*](#). Article by de Besi, M. & McCormick, K., published in Sustainability, July 2015. Linked project: [Enabling the transition to a bio-economy: Innovation system dynamics and policy](#).

- [*Review of methodological choices in LCA of biorefinery systems - key issues and recommendations*](#). Article by Ahlgren, S., Björklund, A., Ekman, A., Karlsson, H., Berlin, J., Börjesson, P., Ekvall, T., Finnveden, G., Janssen, M. & Strid, I., published in Biofuels, Bioproducts and Biorefining, September 2015. Linked project: [LCA of biorefineries. Identification of key issues and methodological recommendations](#).
- [*What Characterizes a System Builder? The Role of Local Energy Companies in Energy System Transformation*](#). Article by Palm, J. & Falde, M., published in Sustainability, March 2016. Related project: [Public procurement as a policy instrument to support the diffusion and use of renewable transport fuels](#).
- [*Life cycle assessments, carbon footprints and carbon visions: Analysing environmental systems analyses of transportation biofuels in Sweden*](#). Article by Martin, M. & Lazarevic, D., published in Journal of Cleaner Production, July 2016. Related project: [Carbon vision? Reviewing environmental systems analyses of biofuel production in Sweden](#).
- [*Evaluation of imidazolium-based ionic liquids for biogas upgrading*](#). Article by Xie, Y., Ma, C., Lu, X. & Ji, X., published in Applied Energy, August 2016. Related project: [Techno-economic analysis of biomethane production with novel upgrading technology](#).
- [*Biorefineries in Sweden: Perspectives on the opportunities, challenges and future*](#). Article by Yoytenko Palgan, Y. & McCormick, K., published in Biofuels, Bioproducts and Biorefinery, August 2016. Related project: [Enabling the transition to a bio-economy: innovation system dynamics and policy](#).
- [*Innovation system strengths and weaknesses in progressing sustainable technology: the case of Swedish biorefinery development*](#). Article by Hellsmark, H., Mossberg, J., Söderholm, P. & Frishammar, J., published in Journal of Cleaner Production, September 2016. Related project: [Enabling the transition to a bio-economy: innovation system dynamics and policy](#).
- [*The role of pilot and demonstration plants in technology development and innovation policy*](#). Article by Hellsmark, H., Frishammar, J., Söderholm, P. & Ylinenpää, H., published in Research Policy, November 2016. Related project: [Enabling the transition to a bio-economy: innovation system dynamics and policy](#).
- [*Unpacking resource mobilisation by incumbents for biorefineries: the role of micro-level factors for technological innovation system weaknesses*](#). Article by Hansen, T. & Coenen, L., published in Technology Analysis & Strategic Management, November 2016. Related project: [Enabling the transition to a bio-economy: innovation system dynamics and policy](#).
- [*Integrating enzyme fermentation in lignocellulosic ethanol production: life-cycle assessment and techno-economic analysis*](#). Article by Olofsson, J., Barta, Z., Börjesson, P. & Wallberg, O., published in Biotechnology for Biofuels, February 2017. Related project: [LCA and techno-economical analysis of on-site enzyme production in 2nd generation bioethanol production](#).
- [*Addressing positive impacts in social LCA—discussing current and new approaches exemplified by the case of vehicle fuels*](#). Article by Ekener, E., Hansson, J. & Gustavsson, M., published in International Journal of Life Cycle Assessment, March 2017. Related project: [Integrated assessment of vehicle fuels with sustainability LCA - Social and environmental impacts in a life cycle perspective](#).

- [*Transport biofuels in global energy–economy modelling – a review of comprehensive energy systems assessment approaches.*](#) Article by Ahlgren, E.O., Börjesson Hagberg, M. & Grahn, M., published in GCB Bioenergy, March 2017. Related project: [Transport Biofuel Futures in Energy-Economic Modeling – A Review.](#)
- [*The potential for electrofuels production in Sweden utilizing fossil and biogenic CO₂ point sources.*](#) Article by Hansson, J., Hackl, R., Taljegård, M., Brynolf, S. & Grahn, M., published in Frontiers in Energy Research, March 2017. [Related project: The role of electrofuels: a cost-effective solution for future transport?](#)
- [*Path creation in Nordic energy and road transport systems – The role of technological characteristics.*](#) Article by Hansen, T., Klitkou, A., Borup, M., Scordato, L. & Wessberg, N., published in Renewable and Sustainable Energy Reviews, April 2017. Related project: [Enabling the transition to a bio-economy: innovation system dynamics and policy.](#)
- [*Cost optimization of biofuel production – The impact of scale, integration, transport and supply chain configurations.*](#) Article by de Jong, S., Hoefnagels, R., Wetterlund, E., Pettersson, K., Faaij, A. & Junginger, M., published in Applied Energy, June 2017. Related project: [Optimization of biofuel supply chains based on liquefaction technologies.](#)