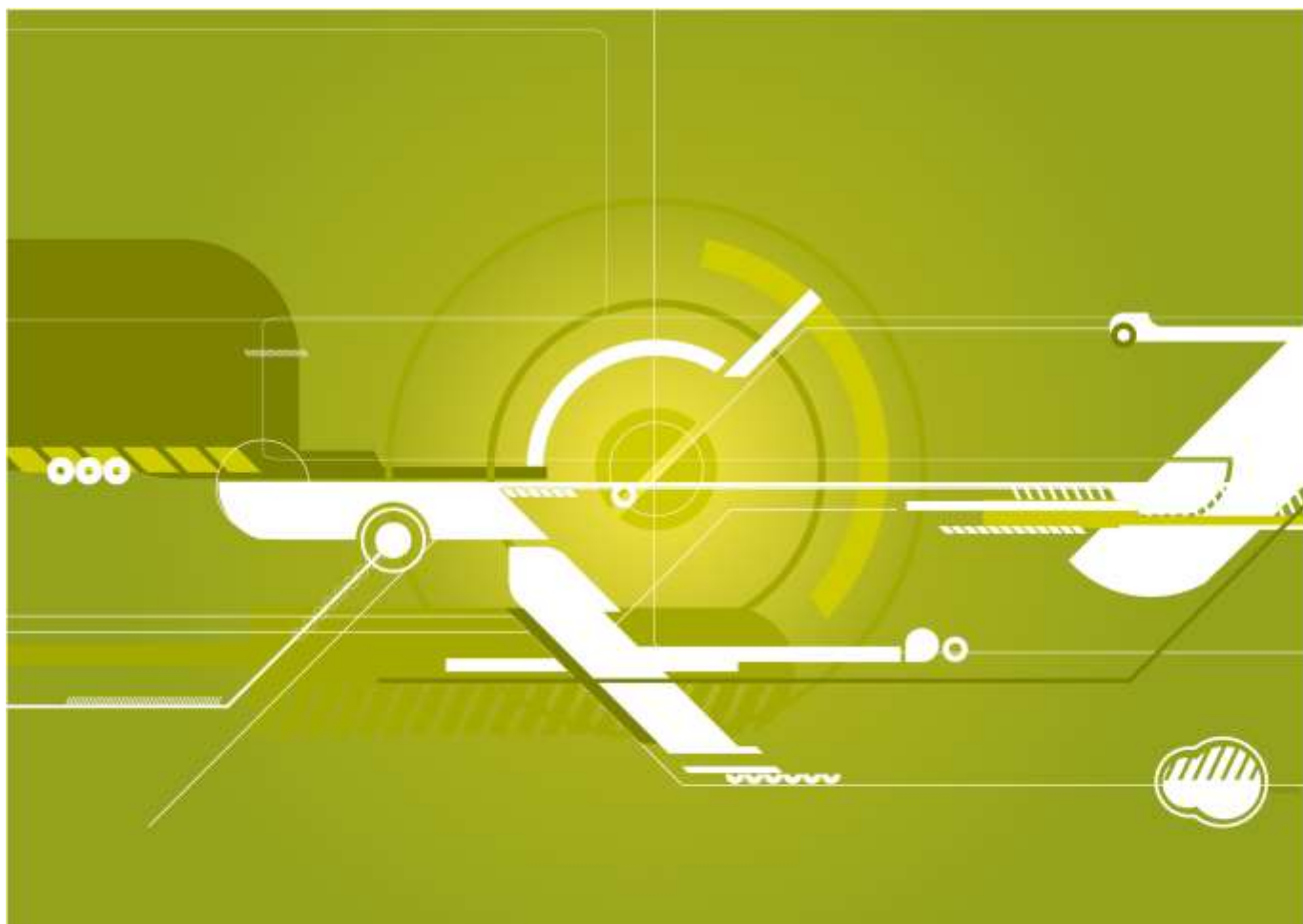


# 2015 Annual Report



THE SWEDISH KNOWLEDGE CENTRE  
FOR RENEWABLE TRANSPORTATION FUELS



## About f3

The networking organisation f3

- provides a broad, scientifically based and trustworthy source of knowledge for industry, governments and public authorities in their strategic planning of short-term actions to reach long-term visions
- carries through system oriented research related to the entire renewable fuels value chain, both in the shape of syntheses of current research, and as supplementing studies
- acts as a national platform stimulating interaction between large and relevant R&I programs, towards Horizon 2020 and for other international collaborative processes.

f3 partners include Sweden's most active universities and research institutes within the field, as well as a broad range of industry companies with high relevance. f3 has no political agenda and does not conduct lobbying activities for specific fuels or systems, nor for the f3 partners' respective areas of interest.



All f3 partners, representing academia, institute, industry and authorities. NB! Bergvik Skog joined f3 early in 2016.

## Introduction

Year 2015 was productive for the networking organisation f3 (fossil free fuels). Several projects were finalized, resulting in the publication of reports and articles and a substantial number of new projects were initiated.

The research carried out within f3 includes both syntheses of current research on production and use of renewable transportation fuels, and supplementing system oriented research related to different parts of the entire renewable fuels value chain.

The project outcomes provide guidance to policy makers, government, industry and other organisations facing decisions regarding renewable fuels, whether about policy objectives and instruments to achieve established goals, or investments in R&D, infrastructure and production.

## Published reports

The results and reports from f3 projects are accessible from the f3 website. The following reports were published in 2015:

- A future biorefinery for the production of propionic acid, ethanol, biogas, heat and power – A Swedish case study (Kristianstad) – Ekman, A. et al, Lund University, SLU & Perstorp ([report no f3 2013:23](#))
- Synthesis gas from agricultural feedstock - A review of possible technical pathways- Bernesson, S. & Ahlgren, S., SLU ([report no f3 2013:24](#))
- Beyond LCI: Towards EPD-conforming LCA:s for vehicle fuels, Hallberg, et. al., IVL, SLU, Perstorp, Lantmännen, Sekab, E.on & Göteborg Energi ([report no f3 2013:30](#))
- Inventory of ongoing bio-butanol projects in Sweden – Strömberg, N. et al, SP & Perstorp ([report no f3 2014:01](#))
- Fuel options for public bus fleets in Sweden - Xylia, M & Silveira, S, KTH ([report no f3 2015:01](#))
- Carbon Vision? A Review of Environmental Systems Analyses in Biofuel Research in Sweden - Martin, M. et al, IVL ([report no f3 2015:02](#))
- Where is the money? - Value flows in the present Swedish forest-based sector  
Overview of value flows in the present forest-based industry and possible value creation in forest-based motor fuel value chains - Joelsson, J. & Athanassiadis, D., SP ([report no f3 2015:03](#))
- Förnybara drivmedel i Västra Götaland – utmaningar och möjligheter – Nyström, I. & Heyne, S., CIT Industriell Energi ([report no f3 2015:04](#))
- LCA and techno-economical analysis of on-site enzyme production in 2nd generation bioethanol production – Olofsson, J. et al, Lund University & Budapest University of Technology and Economics ([report no f3 2015:05](#))

- A review of North American Biofuel Production, Policies and research - Martin, M. & Lazarevic, D., IVL & KTH ([report no f3 2015:06](#))

## Program projects

The following project within the collaborative research program together with Energimyndigheten (Swedish Energy Agency) “Renewable transportation fuels and systems” were initiated last year:

- Barriers to an increased utilisation of high biofuel blends in the Swedish vehicle fleet - [39584-1](#), Bio4Energy, Lund University & Lantmännen Energy
- A review of the synthetic step in the production of advanced biofuels - [39585-1](#), KTH, Lund University & Linnaeus University
- Value chains with biofuel intermediates - [39587-1](#), Innventia, Chalmers, ÅF Industry, Göteborg Energi & Preem
- Techno-economic analysis of biomethane production with novel upgrading technology - [39592-1](#), Bio4Energy, SP & LTH
- Biogas in the transport sector – an actor and policy analysis - [39595-1](#), KTH, Liu & Stockholm Gas
- Biofuels from biomass from agricultural land - land use change from a Swedish perspective - [40584-1](#), SLU & LTH
- Methanol production via black liquor gasification with expanded raw material base - [40759-1](#), Bio4Energy, Lund University & Perstorp BioProducts
- From visions to smart ICT - local transitions to renewable transportation - [40769-1](#), SLU, KTH & Lund University
- Biofuels and ecosystem services - [40770-1](#), IVL & SLU
- Environmental and Socio-Economic Benefits from Swedish Biofuel Production - [40771-1](#), IVL, Bio4Energy, Lund University, Lantmännen Energi AB, Preem AB & Göteborg Energi
- Sustainable biofuels - critical review of current views and case studies using extended systems analysis providing new perspectives and positive examples - [40774-1](#), Chalmers, Lund University & IEA Bioenergy Task 43.

## Small f3 projects

Shorter projects with a smaller economic scope are carried out within the f3 partner network with funding from f3 partners only. The following “small” f3 projects were initiated last year ([descriptions are available at the f3 website](#)):

- Accumulated Impacts from Increased Biofuel Consumption in Sweden - f3:6-15, IVL & KTH

- Methanol as a renewable fuel - a knowledge synthesis - f3:7-15, Bio4Energy
- Overview of value flows in the present forest-based industry and possible value creation in forest-based motor fuel value chains - f3:8-15, SP & SLU
- Flexibility in the production of biofuels - f3:9-15, SP
- Bio-SNG production by means of biomass gasification combined with MCEC technique - f3:10-15, KTH & Chalmers
- Optimization of biofuel supply chains based on liquefaction technologies - f3:11-15, Bio4Energy

## Seminars

The f3 office organised two major seminars in 2015:

- In January, f3, SICEC and Chalmers co-arranged the full-day seminar Fossil free fuels: Markets and measures in Gothenburg. The three sessions attracted approximately 130 participants from universities, research institutes and industry all over Sweden.
- In September, f3 representatives from all partners gathered in Stockholm to discuss past and future projects and assignments.

In addition, a number of project seminars and workshops were carried out by the partners.

## Swedish advocacy platform towards Horizon 2020

Developing a sustainable transportation sector is a vital societal challenge for the EU and for Horizon 2020. The f3 centre is, since summer 2014, an appointed Swedish advocacy platform for renewable transportation fuels in relation to Horizon 2020.

Activities during 2015 have focused on strengthening collaboration nationally and internationally, with a long-term focus on contributing to the 2018-19 Working Programmes.

## Website, newsletters and social media

The f3 website was improved and restructured during 2015. About 6500 persons have visited the website, which is an increase by 60 per cent since 2014. The most popular pieces of information were the f3 fact sheets, e.g. on HVO (Hydrotreated Vegetable Oil), FAME (Fatty acid methyl esters) and Dimethyl Ether. Information on current research and final reports from f3 projects are also of great interest.

During the year, f3 switched language for the quarterly newsletter from English to Swedish. The f3 Newsletter has more than 400 subscribers.

The f3 Centre also started a Twitter account – tweeting mainly in Swedish – and added the possibility to share news stories and reports from the f3 website in social media, which has enhanced the dissemination of research results and related information from the f3 network.

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