

Curriculum vitae with track record (for researchers)

* ROLE IN THE PROJECT

Work package leader

Personal information

First name, Surname:	Ingvar, Kvande		
Date of birth:	13.01.1978	Sex:	Male
Nationality:	Norwegian		
Researcher unique identifier(s) (ORCID, ResearcherID, etc.):	https://orcid.org/0000-0001-5984-6789		

Education

Year	Faculty/department – University/institution – Country
2007	Ph.D. Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim
2003	Master Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim
2011-2013	Pedagogics and counselling 1,2,3, Nord-Trøndelag University College

Positions – current and previous

(Academic sector/research institutes/industrial sector/public sector/other)

Year	Job title – Employer – Country
2016-	Researcher, Norwegian Centre for Organic Agriculture (NORSØK)
2016-	Manager, Tingvoll Flis og Varme AS (district heating, woodchips)
2011-2016	Researcher, Bioforsk/Norwegian Institute of Bioeconomy Research (NIBIO)
2014 -2016	Energy Advisor, Møre og Romsdal County
2007-2011	Researcher, SINTEF

Project management experience

(Academic sector/research institutes/industrial sector/public sector/other. Please list the most relevant.)

Year	Project owner – Project – Role – Funder
2011-	NORSØK, Biogas pilot Tingvoll Gard, Project leader, Funded by Innovation Norway, Sparebanken Møre and NORSØK. Re-build in 2021-2022. Continuous operation since fall 2022.
2020-	Farm-scale pilot RIBI Bioenergi, process optimization and development of test-centre, Project leader
2022-2023	Step by step, Description of farm-scale plant regulations, Innovation Norway, Project leader
2022-2023	Gjødselkunnskap Trøndelag og Viken, Animal manure from multiple farms with different manure handling systems - sampling and analysis to establish biogas potential. Trøndelag and Viken County, Project leader
2021-	“Gårdsgass Norge” – Farmscale biogas network, Innovation Norway, Project leader
2020 – 2022	NORSØK, Infrastructure for biogas testing activities – analysis equipment and plant equipment for improved on-farm testing, Project leader, Møre og Romsdal County.
2021-2023	NORSØK, “Skitgass” - GHG emission and temperature measurements from dairy cow manure storages and digestate storages, technical measurements and evaluation, Norwegian Agriculture Agency.
2020-2021	NORSØK, Biogas regional advisory service providing the basis for a national advisory service in the Norwegian Agricultural Extension Service, Project leader, Norwegian Agriculture Agency and Møre og Romsdal County
2020-2021	Mære Agricultural high school, Compressed crude biogas from distributed plants for centralized upgrading, Project leader, Innovation Norway
2019-2021	NIBIO, Green value chain development based on biogas production from fatty substrates, WP leader, Regional research council.
2011-2020	Bioforsk and NORSØK, Tingvoll solar- and bioenergy centre, Project leader from 2013, Møre og Romsdal County
2019-2021	NORSØK, GHG emissions from dairy cow manure storages, technical measurements and evaluation, Norwegian Agriculture Agency
2016-2019	NORSØK, Implementation of bio- and solar- based on-farm heat and/or power production plants in Møre and Romsdal, Project Leader, Innovation Norway
2017-2018	NMBU, Documentation of the process performance of the biogas plants in Tingvoll and Smøla Hatchery, WP leader, Innovation Norway
2015-2016	The Norwegian Agricultural Extension Office, Model-tool development for economic and environmental evaluation of biogas plants, WP leader, Regional research council
2014	Bioforsk, Bioash for biogas upgrading for increased profitability of small-scale biogas plants and wood-chip plants, WP leader, Regional research council

2012-2014	BIOGASDOK, Documentation of biogas yield from co-digestion of cow manure and fish waste, The research council of Norway.
2008-2011	Project leader, "Octane-processes" – Pilot-studies, refining processes, R&D Sintef /Statoil.

Track record

16 publications in total.

Stoknes, P.E., Soldal, O.B., Hansen, S., Kvande, I., Weddegjerde, S., Willingness to Pay for Crowdfunding Local Agricultural Climate Solutions, submitted 2020

Kvande, I., Zhu, J., Zhao, T., Hammer, N., Ronning, M., Raaen, S., Walmsley, J.C., Chen, D. The importance of oxygen-free edge and defect sites for the immobilization of colloidal Pt oxide particles with implications for the preparation of CNF supported catalysts. *J Physcial Chemistry C*. 114 (2010) 1752

Kvande, I, Chen, D., Zhao, T., Skoe, I., Walmsley, J.C., Rønning, M. Hydrogen Oxidation Catalyzed by Pt Supported on Carbon Nanofibers with Different Graphite Sheet Orientations *Topics in Catalysis*, 52 (2009) 664

Kvande, I, Øye, G., Hammer, N., Rønning, M. Raaen, S., Holmen, Sjöblom, J., Chen, D. Deposition of Au colloids on plasmachemically modified carbon nanofibers. *Carbon*, 46 (2008) 759

Kvande, I, Chen, D., Yu, Z., Rønning, M., Holmen, A. Optimization and scale-up of CNF production based on intrinsic kinetic data obtained from TEOM. *Journal of Catalysis*, 256 (2008) 204.

Kvande, I., Briskeby, S.T. Tsytkin, M, Rønning, M., Sunde, S., Tunold, R. Chen, D. On the preparation methods for carbon nanofiber-supported Pt catalysts. *Top. Catal.* 45 (2007) 81

- Other outputs of relevance

From 2008-2011 My work at SINTEF involved testing catalysts on behalf of Statoil with the results published in classified reports.

Since 2011 the main part of my work has been related to biogas; hands-on testing, optimization, development, documentation, and advisory services as well as GHG emission inventory and measurements. Farm-scale plants, but also larger plants based on livestock manure. In recent years improved understanding of digestate properties and utilization as part of the value chain. Other work; mapping of farm energy demand, electricity generation and utilization, the importance of electricity network infrastructure and farm-based energy production business development.

Reports

Kvande, Ingvar (2022) Forprosjektering av gårdsbiogassanlegg. NORSØK Rapport, no. 3, vol 7. NORSØK, Tingvoll.

Cabell, Joshua; Kvande, Ingvar; Solli, Linn; Sæter, Lovise and Lyche, Arnar (2021) Grønne verdikjeder med utgangspunkt i biogassproduksjon fra fettrike råstoff. Green value chains based on biogas production from high-fat raw materials. NIBIO RAPPORT, no. 167, vol 7. NIBIO.

Sæter, Lovise and Kvande, Ingvar (2021) Energikartlegging i fjørfe- og griseproduksjon. NORSØK Faginfo, no. 3, vol 6. NORSØK, Tingvoll.

Ebbesvik, Martha; Kvande, Ingvar; Rodhe, Lena; Morken, John; Dörsch, Peter and Hansen, Sissel (2021) Klimagassutslipp fra utendørslager for bløtgjødsel fra storfe. NORSØK Rapport, no. 9, vol. 6. Norsk senter for økologisk landbruk, Tingvoll.

Kvande, I., Cabell, J., T., Stensgård, A., Saxegård, S. Morken, J., Følgeforskning Sterner sitt anlegg på Smøla settefisk -masse- og energibalanser, økonomi og klimanytte (2018), REALTEK rapport 60 NMBU

Morken, J., Kvande, I., Briseid, T., Stensgård, A., Saxegård, S., Følgeforskning Tingvoll gard -masse- og energibalanser, økonomi og klimanytte (2018), REALTEK rapport 58 NMBU

Kvande, I, Løes, A.K., Ghaharamani, H., Følgeforskning – Biogass-anlegget på Tingvoll Gard (2017). NORSØK Rapport Vol 2, Nr. 8, ISBN-nr 978-82-8202-043-5

Morken, J., Briseid, T., Hovland, J., Lyng, K.A. og Kvande, I. 2017. Veileder for biogassanlegg mulighetsstudie, planlegging og drift - REALTEK Rapport 56 NMBU

Soerheim, K.M. Ebbesvik, M.O., Kvande, I og Fjørtoft, K. Aske til oppgradering av biogass og som gjødsel. Potensiale for økt lønnsomhet i små biogassanlegg (2015.) Bioforsk Rapport Vol 10, Nr. 61. ISBN-nr 978-82-17-01426-3

Kvande, I, Løes, A.K., Energiproduksjon, klimaeffekt og avlingseffekt i et gårdsbasert biogassanlegg (2014) Vol 9. Nr. 98, ISBN-nr 978-82-17-01297-9

Ytrestøyl, T, Løes, A.K., Kvande, I., Martinsen, S., Berge, G.M., Utnyttelse av slam fra akvakultur i blandingsanlegg for biogassproduksjon: teknologi og muligheter, Nofima rapport 12/2013, ISBN-nr ISBN: 978-82-8296-067-0

Løes, A.K., Kvande, I., Tronsen, K., Holvik, M., System for innmating av tilleggssubstrat i biogassreaktor, Bioforsk rapport (2012) Vol 7. Nr. 33, ISBN-nr 978-82-17-00903-0

Løes, A.K., Kvande, I., Fisknes, G., Lian, A., Gårdsanlegg for Biogass, og aktuelle FoU-aktiviteter, Bioforsk rapport (2011) Vol 6. Nr. 92, ISBN-nr 978-82-17-00817-0

- Experiences from major research communication, dissemination or outreach activities and/or invited presentations in public conferences.

Farm-scale biogas – introduction course, developed and held in cooperation with Norges Vel. Biogas courses held in Mære (2022), Viken (2022), Nordland (2022, web), Jæren (2023). Further courses to be held.

Gårdsgass Midt-Norge, Network activities, study trips, seminars etc. (2011-2014)

Approximately 20 presentations pr year, mainly biogas dissemination activities directed towards farmers. Hosting and co-hosting biogas seminars, 2-3 relevant seminars pr. year.