NTNU

CURRICULUM VITAE

PERSONAL INFORMATION

Name	**VEREIDE, Kaspar**
Address	**LILLEGÅRDSBAKKEN 35B, 7013 TRONDHEIM, NORWAY**
Telephone	**+47 92698109**
Fax	
E-mail	**kaspar.vereide@ntnu.no**
Nationality	Norwegian
Date of birth	24 JUNE 1987

WORK EXPERIENCE

• Dates (from – to)	2016-
• Name and address of employer	NTNU
• Type of business or sector	University
• Occupation or position held	Adjunct Associate Professor
• Main activities and responsibilities	Teaching and research
• Dates (from – to)	2016-
• Name and address of employer	Sira-Kvina kraftselskap DA
• Type of business or sector	Power company
• Occupation or position held	Project Developer
• Main activities and responsibilities	Project management, R&D, Hydropower projects
• Dates (from – to)	2012-2016
• Name and address of employer	NTNU
• Type of business or sector	University
• Occupation or position held	PhD candidate
• Main activities and responsibilities	Research
• Dates (from – to)	2011-2012
• Name and address of employer	Multiconsult
• Type of business or sector	Consultant
• Occupation or position held	Hydrological and Hydraulic Engineering
• Main activities and responsibilities	Engineering

EDUCATION AND TRAINING

• Dates (from – to)	2012-2016
• Name and type of organisation providing education and training	NTNU
• Principal subjects/occupational	Hydraulic Engineering

skills covered	
• Title of qualification awarded	PhD in Hydraulic Engineering
• Dates (from – to)	2006-2011
• Name and type of organisation providing education and training	NTNU and UNSW (Australia)
• Principal subjects/occupational skills covered	Civil Engineering, Hydraulic Engineering, Hydrology, Geotechnical engineering, Geology
• Title of qualification awarded	MSc. in Hydraulic Engineering

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE — **NORWEGIAN**

OTHER LANGUAGES

	GERMAN	**FRENCH**
• Reading skills	BASIC	BASIC
• Writing skills	GOOD	BASIC
• Verbal skills	BASIC	BASIC

KEY QUALIFICATIONS — HYDRAULIC ENGINEERING, HYDROLOGICAL MODELLING, HYDROPOWER PLANT DESIGN, 1D NUMERICAL SIMULATIONS, PROJECT DEVELOPMENT, PROJECT MANAGEMENT.

TEACHING

TVM5125 HYDRAULIC DESIGN: ONE LECTURE ANNUALLY ON HYDROPOWER DYNAMICS
TVM4165 HYDROPOWER STRUCTURES: THREE LECTURES ANNUALLY ON HYDROPOWER DYNAMICS
TVM5135 HYDROPOWER PLANNING: ONE LECTURE ON TYPES OF HYDROPOWER PLANTS

SUPERVISON

MAIN SUPERVISOR FOR 25 M.SC. STUDENTS WHO HAVE HAVE COMPLETED.
CURRENTLY SUPERVISOR FOR ONE M.SC. STUDENT.

CURRENTLY MAIN SUPERVISOR FOR ONE PHD CANDIDATE IN HYDRAULIC DESIGN.
CURRENTLY CO-SUPERVISOR FOR TWO PHD CANDIDATES IN HYDRAULIC DESIGN AND ENGINEERING GEOLOGY.

SELECTED RESEARCH PROJECTS

2018 - 2020 **ALTERNAFUTURE** — **PROJECT LEADER, RESEARCHER**
Research project on upgrading of existing hydropower systems. Multidisciplinary desk study.

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2017 - **FLEXIBLE SANDTRAPS** — **PROJECT LEADER, RESEARCHER**
Upgrading of existing sandtraps in hydropower plants. Hydraulic scale modelling, CFD and 1D numerical modelling.

2017 - **HYDROCEN** — **RESEARCHER, SUPERVISOR**
Research topics: Hydropower structures, Turbine and generators, Market and services, Environmental design. 34 industry partners (power companies, consultancies, manufacturers). Supervisor for three PhD candidates.

SELECTED COMMERCIAL PROJECTS

2020 - **ROSKREPP PUMPED STORAGE PLANT** — **PROJECT LEADER**
Feasibility project of upgrading the 50 MW Roskrepp power plant to a pumped storage plant.

2020 - **MAINTENANCE 4.0** — **PROJECT LEADER**
Development of condition monitoring and predictive maintenance in Sira-Kvina kraftselskap.

2019 - **NEW RUNNERS TO DUGE PUMPED STORAGE PLANT** — **PROJECT DEVELOPER**
Feasibility project of new runners for the 200 MW Duge pumped storage plant.

2018 - 2019 **NEW RUNNERS FOR TONSTAD UNIT 4&5** — **PROJECT DEVELOPER**
Feasibility project of new runners for unit 4&5 In the 960 MW Tonstad power plant.

2016 - 2019 **RAFOSS HYDROPOWER PLANT** — **PROJECT DEVELOPER**
Design and construction of a 9.9 MW hydropower plant with an integrated fish ladder. Currently under construction.

2016 - 2020 **KNABEN-SOLLI TRANSFER PROJECT** — **PROJECT DEVELOPER**
Design and construction of transfer project resulting in 100 GWh new energy production.

2016 - **DIGITAL TWIN IN TONSTAD POWER PLANTS** — **PROJECT LEADER**
Upgrading and implementation of the digital twin for the 960 MW Tonstad power plant.

SELECTED PUBLICATIONS

JOURNAL PAPERS

Livia Pitorac, Kaspar Vereide, Leif Lia (2020). Technical Review of Existing Norwegian Pumped Storage Plants. Energies 2020, 13, 4918, DOI: 10.3390/en13184918 (Open Access).

Bibek Neupane, Krishna Panthi and Kaspar Vereide (2020). Effect of Power Plant Operation on Pore Pressure in Jointed Rock Mass of an Unlined Hydropower Tunnel: An Experimental Study. Rock Mech Rock Eng 53, 3073–3092. DOI: 10.1007/s00603-020-02090-7 (Open Access).

Wolfgang Richter, Kaspar Vereide and Gerald Zenz (2017). "Upgrading of a Norwegian Pressurized Sand Trap Combined with an Open Air Surge Tank." Geomechanics and Tunnelling, 10(5), 620-624, DOI: 10.1002/geot.201700027.

Kaspar Vereide, Bjørnar Svingen, Torbjørn Kristian Nielsen and Leif Lia (2017). "Effect of Surge Tank Throttling on Governor Stability, Power Control, and Hydraulic Transients in Hydropower Plants." IEEE Transactions on Energy Conversion, 32(1), 91-98, DOI: 10.1109/TEC.2016.2614829 (Open Access).

Kaspar Vereide, Leif Lia and Torbjørn Kristian Nielsen (2015). "Hydraulic Scale Modelling and Thermodynamics of Closed Surge Tanks." Journal of Hydraulic Research, 53(4), 519-524, DOI: 10.1080/00221686.2015.1050077 (Open Access).

Kaspar Vereide, Wolfgang Richter, Gerald Zenz and Leif Lia (2015). "Surge Tank Research in Austria and Norway." Journal Wasserwirtschaft, 105(1), 58-62. Available: http://www.meinfachwissen.de/freemagazine/WAWIextra/index.html#58 (Open Access).

Kaspar Vereide, Torbjørn Tekle and Torbjørn Kristian Nielsen (2015). "Thermodynamic Behavior and Heat Transfer in Closed Surge Tanks for Hydropower Plants." Journal of Hydraulic Engineering, 141(6), 06015002, 1-5, DOI: 10.1061/(ASCE)HY.1943-7900.0000995 (Open Access).

Kaspar Vereide, Leif Lia and Lars Ødegård (2013). "Monte Carlo Simulation for Economic Analysis of Hydropower Pumped Storage Projects in Nepal." Hydro Nepal Journal of Water, Energy and Environment, 12, 39-44, DOI:dx.doi.org/10.3126/hn.v12i0.9031 (Open Access).

CONFERENCE PAPERS

Kaspar Vereide, Torbjørn Forseth, Arne Nysveen, Birger Mo, Leif Lia, Ole Gunnar Dahlhaug (2019). "Research on Extreme Upgrading og Existing Hydropower Systems." Hydro 2019, Porto, Portugal, 14-16 October, 2019.

Kaspar Vereide, Leif Lia, Ola Haugen Havrevoll, Wolfgang Richter, Tom Jakobsen (2017). "Upgrading of Sand Traps in Existing Hydropower Plants." Hydro 2017, Sevilla, Spain, 9-11 October 2017.

Leif Lia, Kaspar Vereide, Bernhard Kvaal, and Lars Fossvoll Strypet (2016). "The new strategy for PSP in Norway - medium size projects in existing power schemes." Hydro 2016, Montreux, Switzerland, 10-12 October 2016.

Wolfgang Richter, Kaspar Vereide, Gerald Zenz (2015). "Hydraulic Design and Modelling of Large Surge Tanks." In: Arris S. Tjisseling, Pressure Surges 2015 (417-424). 12th International Conference on Pressure Surges, Fluid Transients and Water hammer, Dublin, Ireland, 18-20 November 2015.

Kaspar Vereide, Bjørnar Svingen and Rolv Guddal (2015). "Case study: Damaging Effects of Increasing the Installed Capacity in an Existing Hydropower Plant." In: Arris S. Tjisseling, Pressure Surges 2015 (745-759). 12th International Conference on Pressure Surges, Fluid Transients and Water Hammer, Dublin, Ireland, 18-20 November 2015.

Kaspar Vereide, Leif Lia and Torbjørn Nielsen (2014). "Physical Modelling of Hydropower Waterway with Air Cushion Surge Chamber." In: Hubert Chanson and

Luke Toombes, Hydraulic Structures and Society - Engineering Challenges and Extremes. 5th IAHR International Symposium on Hydraulic Structures, Brisbane, Australia, 25-27 June 2014, DOI: 10.14264/uql.2014.28 (Open Access).

Kaspar Vereide, Leif Lia and Wolfgang Richter (2014). "Benefits of the Air Cushion Surge Chamber for Alpine Hydropower Plants." In: Christian Bauer and Eduard Doujak, Innovation and Development Needs for a Sustainable Growth of Hydropower (823-832). 18th International Seminar on Hydropower Plants, Vienna, Austria, 26-28 November 2014.

Wolfgang Richter, Kaspar Vereide, Josef Schneider, Helmut Knoblauch, Leif Lia and Gerald Zenz (2014). "Druckluftwasserschlösser für alpine Hochdruckwasserkraftanlagen." In: Robert Boes, Internationales Symposium Wasser- und Flussbau im Alpenraum, Band 1 (109-120). Internationales Symposium Wasser- und Flussbau im Alpenraum 2014, Zürich, Switzerland, 25-27 June 2014.

BOOK CONTRIBUTIONS

Ånund Killingtveit, Eivind Solvang, Knut Alfredsen, Leif Lia, Nils Ruther, Atle Harby, Stefan Jaehnert, Eve Walseth, Pål-Tore Selbo Storli, Kari Bråtveit, and Kaspar Vereide (2017). "Utfordringer og muligheter for norsk vannkraft ved integrasjon med vind- og solkraft i Europa. En oppsummering fra HydroPEAK-prosjektet." Norsk institutt for naturforskning, ISBN 978-82-426-3070-4, 91 p, NINA temahefte 71.

PHD THESIS

Kaspar Vereide (2016). Hydraulics and Thermodynamics of Closed Surge Tanks for Hydropower plants. PhD thesis, NTNU, Trondheim.