



EFCA
FUTURE LEADER OF THE YEAR
2020

Personal details / Entry Form

Full name: Thomas Johansson

Nationality: Finland

Birthday: 27.09.1986

Age as of 31/03/2020: 33

Company: Citec Oy Ab

Location: Turku, Finland

Member Association: The Finnish Association of Consulting Firms SKOL

Contact details

E-mail address: Thomas.V.Johansson@citec.com

Office phone number: +358 408242675

Cell phone number +358 408242675

Instructions for completing this form



Note to candidates

Each section and sub-section may be expanded as required. The completed entry form should be no longer than **16 pages in total**. Section A is to be completed by your employer, and Section C by the client.

All entries should be submitted in English. Any annexes in other languages should be accompanied by an English translation or will not be taken into account.

The form should be returned to your national association. They will forward it to the EFCA Secretariat.

You will be informed of the results of the competition at end of April 2020.

Good luck!

For those participating in the FIDIC FL competition

The requirements stipulated in the respective EFCA and FIDIC FL competitions coincide largely for 75%. The following three FIDIC competition requirements are entirely covered in the EFCA application:

- Technical achievements (see Section B in this template) (50%)
What is 30% for EFCA
- Leadership achievements (see Section C in this template) (15%)
What is 40% for EFCA
- Social and community contributions (see Section B in this template) (10%)
What is 30% for EFCA

However, EFCA FLs interested in submitting an application for the FIDIC FL competition should complement their EFCA application with the following two extra requirements.

Applicants should demonstrate:

- Contributions to consulting engineering industry (15%)
- Contribution to consulting engineering associations (10%)

Section A. EMPLOYER'S RECOMMENDATION



Our candidate for "EFCA Young Professional of the Year, 2020" is **Thomas Johansson**, Head of Process Engineering, from Citec Group Oy Ab.

Thomas Johansson's strength lies in the combination of being a highly appreciated leader, as well as knowing the operations by heart as Chief Design Engineer and Process Engineer. He has been involved in various Energy projects, for various multi-national industrial companies and is currently heading an international team of engineering experts from Europe and India.

Thomas joined Citec in 2012 as Process Engineer, in which he was responsible for the process engineering and deliveries. He was soon discovered as a co-worker, who collaborated well with colleagues from different cultures, as well being very eager to learn more and take on more responsibility. After only two years, he was nominated Chief Design Engineer and became responsible for the process engineering solutions towards our end customers.

In less than a year Thomas again advanced to Manager - heading the process engineering department as part of our Project Delivery organisation. Simultaneously, Thomas continued as Chief Design Engineer in our customer projects. Combining the two roles was not only time-consuming, these two roles also required tremendous commitment being the owner of a team of close to 40 experts.

In an international engineering company such as Citec, the ability to navigate and effectively steer across various cultures, business requirements, disciplines and services is crucial.

Thomas is one of the company's high performing and young leaders since several years. The contribution from Thomas is tremendous - both from internal point of view, as well as in the customer interface.

Thomas's leadership style is transparent, straightforward and effective - and always with a human touch. He has clearly demonstrated that he manages the challenging task in leading international teams to the highest standards. By his team members and their point of view, he has been recognized as a great coach for both junior, as well as senior team members. He clearly understands situational leadership in practice.

He is also very keen on gaining continuous competence development to his team. For instance, on several occasions he has invited other engineering discipline members to help in increasing the knowledge in his own team. Thomas has also implemented an induction model for systematically developing team members towards the role as Chief Design Engineer.

When discussing with team members, Thomas achieves top feedback in communication, respecting individuals and engagement. He is easy to approach and explores development paths together with his team members individually. Thomas actively shares the Citec Group wide corporate matters and transfers strategic paths to concrete meanings for his team. People know what is expected of them through his active two-way communication. He provides the tools for everyone to succeed.

From management perspective, Thomas is seen as key person in his position as leader of the process team. He not only brings in, but also openly shares, his deep technical competence from various process industry related projects and applies solutions to new ones. His business mind-set has developed strongly - from an expert level to senior manager level.

He is also one of our Discipline Champions in Citec Group, with the view and role to develop the process engineering discipline further, both solution & design tool wise as well as according to customer future demands.

Thomas is highly appreciated by many of our customers for constantly performing with high standards and delivering within the deadlines and bringing innovative technical solutions that helps the feasibility of the customer projects. Customer comments that we have received describes his professionalism, and the personal trust that he has gained, in a nutshell: "Ok, so Thomas looked into this, then it is ok."

To conclude, we are proud to have Thomas as part of our team. Thomas is a living example of how an open-minded, proactive, and passionate young engineer grew into a leader of a global process engineering organization. With his determination and leadership skills, Thomas has shown how to create value for the customer and prominently highlighted the role of an expert in solving some of society's crucial challenges. Therefore, I am very happy to recommend him to the 2020 EFCA Young Professional of the Year.

In the video here <https://youtu.be/DV-IA0JdWNq>, you will explore Thomas' career path and ambitions at Citec. It provides an open, genuine and unedited glimpse of the true professional that Thomas is.

At Citec, we truly recognize that Thomas Johansson is an extraordinary young leader with proven track-record despite his young age. Therefore, I am very happy to recommend him to the 2020 EFCA Young Professional of the Year.

Please do not hesitate to contact me, should you have questions regarding his background and qualifications.

Kind regards,

Sakari Koivuniemi
Vice President
Region Europe
Managing Director
Citec Oy Ab

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Section B. THE PROJECT



B.1 Project description:

A full-scale carbon capture and storage (CCS) project initiated in Norway. At the beginning of 2016 Citec was awarded the Feasibility study of a CCS project to Norway. The objective was to evaluate the feasibility of integrating a carbon capture plant with an existing waste to energy plant (WtE) in Oslo, Norway. The promising results presented in the feasibility study facilitated moving the project into a concept phase followed by a FEED (Front end engineering) phase, which was finalized by the end of 2019. Citec has been responsible for integration engineering, HSEQ and Risk management, as well as CO₂ capture technology contractor evaluation and management.

Publications:

- <https://www.citec.com/citec-performs-advanced-carbon-capture-storage-ccs-feasibility-study-ege-norway/>
- <https://www.fortum.com/media/2018/11/full-scale-carbon-capture-and-storage-ccs-project-initiated-norway>
- <https://www.oslo.kommune.no/politics-and-administration/green-oslo/best-practices/carbon-capture/#gref>
- <https://www.citec.com/citecs-work-progressing-at-the-klemetsrud-wte-facility/>
- <http://www.europeanenergyinnovation.eu/OnlinePublication/Summer2016/mobile/index.html#p=16>
- <http://task41project5.ieabioenergy.com/wp-content/uploads/2017/11/Stuen.pdf>

B.2 Innovative characteristics of the project:

If realized the plant will be the first of its kind in the world, i.e. a full-scale post combustion carbon capture plant integrated with a waste to energy plant.

B.3 The FL's role in, and specific contribution to, the project:

Since the start of Citec's involvement in the project, my responsibility has been the steam-, condensate- and internal district heating system integration of the waste to energy plant and the carbon capture plant. The addition of a CC plant to this WtE plant necessarily requires energy, but one of the primary goals is and has been to minimize the parasitic load that the CO₂ capture operation places on the WtE plant by clever heat integration concepts. The integration solution development was done by developing and evaluating numerous conceptual solutions, validated through thermodynamic steady state simulations. Ensuring a working solution in all operating conditions during all ambient conditions while having a strong focus on minimizing the negative impact of the capture plant on the output of the WtE plant in terms of electricity and district heat.

B.4 Communication with the client/end user:

During the feasibility study phase Citec's role included coordination of the CC technology providers, who each were responsible for delivering an individual solution for the carbon capture. During the concept and FEED phase Citec personnel, including myself, were part of the customer's project team responsible for the overall project execution. This setup required continuous communication with the customer and the other sub-suppliers involved in the project.

B.5 Describe the project end results and the benefits to the client/end user:

If realized the plant will be the first of its kind in the world, i.e. a post combustion carbon capture plant integrated with a waste to energy plant. The project has developed a working solution for capturing the CO₂ from the waste incineration, bringing Oslo closer to their future CO₂ emission reduction goals. "Fortum's CCS project in Oslo can annually remove as much pollution from the atmosphere as that of 60000 cars."

"Fortum Oslo Varme's waste-to-energy plant at Klemetsrud incinerate more than 400,000 tones of waste per year. The waste heat from the incineration is used to produce electricity, district heating and cooling to the city of Oslo.

The emissions from the plant contains steam and CO₂. The flue gas is currently cleaned out of dioxins, NO_x and CO. Now Fortum wants to capture the CO₂. A pilot demonstrated the possibility to capture 90% of all CO₂ in the flue gas. 58% of the waste incinerated at the plant is of biological origin, making the plant carbon-negative.

Carbon capture from waste incineration helps to solve two major global problems: the waste problem and the climate problem. Waste has large impacts on health, environment and climate."

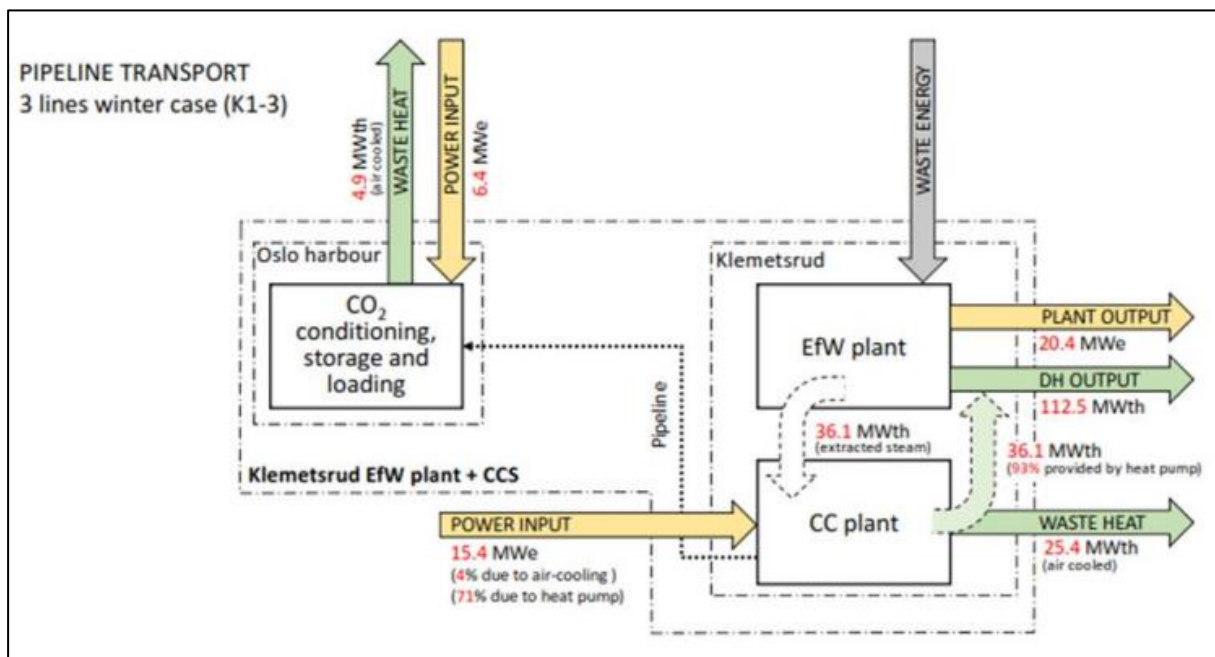


Figure 1. Simplified Energy balance of the integrated WtE (EfW) plant and the post combustion carbon capture plant.

Section C. CLIENT'S APPRECIATION OF THE CANDIDATE



Thomas Johansson has been attached to the Project Oslo Carbon Capture as Lead Process Engineer. As a part of the technical project team he has had a central position and been a most valuable member of my team.

Thomas have had the responsibility for all process simulations related steam and condensate system integration of the waste to energy (WtE) plant and the carbon capture plant. His work included establishing a detailed model of the existing plant consisting of 3 Waste to Energy (WtE) incineration lines, two steam turbines, two different district heating networks, air coolers, internal consumers etc. This model was completed with the new carbon capture plant (CC plant).

As the WtE plant is a major producer of district heating to the city of Oslo, the simulations focused on minimizing the consequences of delivering steam to the CC-plant by returning heat to the district heating via heat pumps. In addition, he has performed heat integration simulations for turbine study related to replacing existing steam turbine with a new steam turbine based on future steam parameters. A number of different cases have been modelled and calculated by using Thermoflow™.

As Technical Manager in the project Thomas have reported to me. He has carried out his tasks in an excellent way – precisely and timely. As the project have developed throughout the process from feasibility study to end FEED, a number of changes and new questions had to be handled, answered out and presented to the executives in the company.

His presentations, both written reports and audiovisual presentations, are focused to the key challenges and given in an – as much as possible – straightforward and understandable way. He's technical competence, personality, calmness and way of presenting his case to the audience are important for the success of the project.

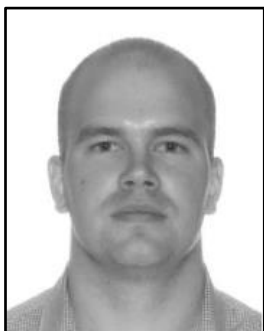
Name and signature Petter Thorbeck

Job title: Technical Manager, Project Carbon Capture Oslo

Company: Fortum Oslo Varme AS



Curriculum Vitae



Personal information

First name(s) / Family name(s)

Thomas Valfrid Johansson

Business Address

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Phone number(s)

+358 408242675

Cell: +358 408242675

E-mail address

Thomas.V.Johansson@citec.com

Nationality

Finland

Date of birth

27.09.1986

Work experience

Dates

01.06.2018 onwards

Occupation or position held

Head of Process Engineering

Main activities and responsibilities

- Managing a process engineering team consisting of about 20 engineers, as part of the Region Europe – Plant engineering department.
- During 01.06.2018 to 31.12.2019 also part of another sub organization within Citec group managing a team of 25 process engineering professionals in Citec India
- Department profit and loss responsibility
- Development of the process engineering services and execution models
- Manage resourcing and competence of own organization (competence sharing and development, recruitments), in line with requirements from Projects
- Ensure quality is according to the customer requirements in project deliveries and on-time deliveries.
- Recognising and acting on new sales leads and provide technical sales support, including sales and offer preparation
- Thermodynamic power plant modelling and simulation
- Chief Design Engineer and Project manager role and responsibility in various engineering projects

Name and address of employer

Citec Oy Ab

Type of business or sector

Consultancy for the energy and process industry sector

Dates

01.02.2015 – 31.05.2018

Occupation or position held

Section Manager

| | |
|--|--|
| Main activities and responsibilities | <ul style="list-style-type: none"> - Manager of the process department, about 35 persons, as part of the Project delivery organization. - Chief Design Engineer for GTCC (Gas turbine combined cycle) concept engineering projects. - Thermodynamic power plant modelling and simulation - Process Engineering Chief Design Engineer for reciprocating engine power plant projects. |
| Name and address of employer | Citec Oy Ab |
| Type of business or sector | Consultancy for the energy and process industry sector |
| Dates | 01.05.2014 – 31.01.2015 |
| Occupation or position held | Chief Design Engineer |
| Main activities and responsibilities | <ul style="list-style-type: none"> - Lead of process engineering activities for power plant engineering projects in close contact with end customer. - Chief Design Engineer for GTCC (Gas turbine combined cycle) concept engineering projects. - Engineering streamlining and coordination with other disciplines including piping-, civil-, electrical-, instrumentation and automation engineering in multi-discipline engineering projects - Thermodynamic power plant modelling and simulation |
| Name and address of employer | Citec Oy Ab |
| Type of business or sector | Consultancy for the energy and process industry sector |
| Dates | 02.01.2012 – 30.4.2014 |
| Occupation or position held | Process Engineer |
| Main activities and responsibilities | <ul style="list-style-type: none"> - Process engineering and coordination for power plant engineering projects in concept, basic and detail engineering phase - Preparation of PFDs, P&IDs, valve-, pipe line- and instrument lists - Preparation of process descriptions and various process related calculations |
| Name and address of employer | Citec Oy Ab |
| Type of business or sector | Consultancy for the energy and process industry sector |
| Education and training | |
| Dates | 17.04.2012 |
| Title of qualification awarded | Master of Science |
| Principal subjects/occupational skills covered | Process- and systems engineering |
| Name and type of organisation providing education and training | Åbo Akademi University |
| Level in national or international classification | Master, MSc |
| Dates | 23.05.2011 |
| Title of qualification awarded | Bachelor of Science |
| Principal subjects/occupational skills covered | Process- and systems engineering |
| Name and type of organisation providing education and training | Åbo Akademi University |

Level in national or international classification

Bachelor, BSc



Personal skills and competences

Mother tongue(s)

Swedish

Other language(s)

Self-assessment

European level (*)

English

Finnish

| Understanding | | Speaking | | Writing | | | |
|---------------|----|----------|----|--------------------|----|-------------------|----|
| Listening | | Reading | | Spoken interaction | | Spoken production | |
| | C2 | | C2 | | C2 | | C2 |
| | C2 | | C2 | | C1 | | C1 |

Social skills and competences

Working within a company that both operates and has an organization that is spread across the globe I am daily dealing with individuals from different countries and cultures. During the past years I have also acted as the manager of a team of process engineers from India. Even though the cultural differences between an Indian and a Finnish engineer are rather large, to say the least, I have with my social skill set managed to build the trust and cooperate successfully with team members originating from a completely different cultural background and located on the other side of the globe.

As a person I consider myself as somewhat of an introvert. I sometimes find myself to a certain degree uncomfortable in social situations, however, in arenas where I feel confident or in situations faced with people I respect and trust I do not hide in the corner and have no problem in putting forth my opinion. I have also realized that being introvert has put me in a situation where people actually listen when I have something to say. Also, I would say that being an introvert help in keeping me humble, which I have found to be a real strength both professionally as well as in my personal life.

Based on feedback received throughout the years I recognize that my ability to express myself both verbally and non-verbally is on a highly professional level. Whether it comes to preparing a report or giving a presentation I find myself keen on making sure that the receiver understands and gets the message even if it requires putting in the extra effort in describing the issue at hand.

Organisational skills and competences

During my, so far roughly five years, as a superior of engineering professionals I have found that by listening and keeping my door open I have been able to build the trust of my team members. This in turn has enabled me to get a vast knowhow regarding each individual's strengths and development areas, which in turn is one of the main tools at my disposal when it comes to nominating the right professional for the right project. I have also found that putting the extra focus on this decision in the beginning of a project will enable me to avoid micro managing each professional in their daily work, but instead focusing on the big picture and ensure that all ongoing projects are executed according to right quality on time.

I have always been very eager to be on time, which has become a real benefit also in my professional career as it enables me to appreciate the importance of keeping and setting deadlines. Whether it comes to setting and keeping deadlines for myself, my team members in my project or my line organization I always strive to keep my own deadlines as well as support others in keeping their deadlines.

From a very young age I have been involved in team sports, which has given me a good base for both team work as well as team management. Today as Head of a Process Engineering team I put big focus on ensuring that the team is able to cope with the situation at hand, e.g. through effective and flexible resourcing. To support my team and develop my project management skills I have during the past year participated in a IPMA-C course (International Project management Association).

Technical skills and competences

My main technical skills lie within power plant engineering, including all phases of an engineering project. Starting from the feasibility study phase further through concept-, basic- and finally detail engineering. I wrote my master's thesis on feasibility studies, with the topic Establishing feasible power plant solutions. Already from the very beginning of my career I was heavily involved in power plant concept engineering, including thermodynamic steady state simulations both for gas turbine and reciprocating engine power plants. One of the most interesting challenges I got the opportunity to take responsibility of during that time was the development of simulation models for gas turbine power plants. With the help of a simulation software and MS Excel we managed to very efficiently build power plant models with an accuracy 0.05 % compared to the physical plant. Through this model we could very effectively provide technical support within a very short time frame for various plant configurations to our customer's global sales department. Since then I have been involved in the preparation of thermodynamic simulation models and process concepts for various projects and customers both as a design engineer and lead engineer in different project phases both for the energy and process industry sector.

In addition to the thermodynamic simulations I have been acting as a chief design engineer in several power plant projects, through which I have gained extensive knowhow regarding also the basic- and detail engineering project phases including the preparation of all process engineering related deliverables such as piping and instrumentation diagrams, valve-, instrument-, pipeline- and equipment lists as well process descriptions and all kind of process engineering related calculations. Additionally, I have gained a good knowledge regarding power plant auxiliary system process engineering, however, with a strong focus on steam-, condensate and heat recovery systems.

Computer skills and competences

During my career I have so far gained experience from both thermodynamic simulation software as well as traditional process engineering software and calculation tools. When it comes to thermodynamic simulation software my main expertise lies within Thermoflow™ (Including GTPro, SteamPro and Thermoflex). For Thermoflow™ I am the main user within Citec, and I am also the person who recommended the software to Citec as part of my master's thesis. When it comes to traditional process engineering software my main experience and knowhow lies in Autodesk AutoCad P&ID as well as some basics in Aveva Diagrams and Aveva Engineering. Additional I have a vast experience of the MS office package.

Other skills and competences

I am very handy e.g. when it comes to visualizing, planning and executing small and mid-scale DIY renovations. This I think originates from spending a large part of my childhood following my father executing all sorts of renovations in my childhood home.

Hobbies and activities

My main hobbies are travelling, exercising, home DIY and spending time with family and friends. During my spare time I like spending time in the Finnish Archipelago.

Membership of professional organisations

SKOL Young professionals
(Founding member)

A network for young consultants and designers established in 2013

TEK

TEK is the largest organisation for academic engineers and architects in Finland, with a professional community of 70,000 women and men.

TFiF

Tekniska Föreningen i Finland (TFiF) has about 4500 members and is the only association for Swedish speaking MSc in engineering or architecture, or a corresponding degree in mathematics or natural sciences.