



NCAB Group has embraced a sustainability strategy since 2014. This means the company has committed to a responsible approach in every aspect of its operations - socially, environmentally and ethically. Today, NCAB is working continuously on a broad front to improve its sustainability.

This is based on three groups of stakeholders – the supply chain, employees and customers. NCAB has identified a number of focus areas in its sustainability strategy (see Fact Box). Within all these areas, NCAB has set measurable targets that are followed up in the same way as the other benchmarks in its operations.

“We feel our activities are widely accepted across the focus areas and sustainability is now integrated into our operations and business model,” says Anna Lothsson, Strategic Purchasing Manager at NCAB Group, who is responsible for the Group’s sustainability work.



Anna Lothsson, Strategic Purchasing Manager, NCAB Group

She explains that during this last year, they have focused a great deal on employee issues, an important area for an expanding company like NCAB.

“Our employees are our most important asset and it is important that we are an attractive employer, so that we may both retain our employees and attract new talent. We have implemented processes throughout the group covering the introduction of new employees and for skills development. Last autumn we conducted our first global employee satisfaction survey. It is an important tool that greatly

helps us identify which areas we need to improve on and also gives us a picture of how things are going in terms the commitment and satisfaction among our employees.”

“Sustainability is from the outset an integral part of our factory evaluation process. Meeting our requirements in this area is equally important as meeting quality requirements.”

ANNA LOTHSSON, STRATEGIC PURCHASING MANAGER, NCAB GROUP

FULL-TIME RESOURCE IN CHINA

Another major initiative NCAB has carried out is the control of the supply chain in terms of sustainability. In February, Jenny Zhang took over as Sustainability Manager at NCAB in China. Ensuring someone is onsite working full-time with these issues in China, will enable NCAB to work on sustainability issues more proactively and in close dialogue with our factories. [Read more about this important development in our separate interview with Jenny Zhang in this newsletter.]

“We conduct sustainability audits at all our main factories in China, and have introduced a program where we go back to conduct a new audit every two years, with a follow-up after six months to verify that the improvements we called for have actually been implemented,” says Anna Lothsson.

A sustainability audit also forms part of the process in NCAB’s evaluation process of possible new partner factories.

“Sustainability, from the outset, is an integral part of our factory evaluation process. Meeting our requirements in this area is



During NCAB Group’s global introduction of new employees, participants learn about NCAB’s sustainability work, values and business ethics. The introduction also focuses on team building and is a great way to get to know employees throughout the organization. The introduction is held at NCAB’s head office in Sweden.

equally important as meeting quality requirements,” Anna Lothsson explains.

AUDITING - A THOROUGH APPROACH

She underlines the importance of having local employees on the spot in China in order to facilitate thorough evaluations are carried out.

“It’s incredibly valuable having someone like Jenny Zhang. In addition to experience and knowledge of PCB production, supplier development and sustainability, language and being locally anchored are very important. At our audits, she can read original documents, conduct interviews and talk with the factory employees in their language. Compared to auditors who come from outside, a locally-anchored person will, for example, have a different feel for body language. It allows us to work at a completely different level.”

This method of auditing is a well-established work method for both NCAB and the factories. In the same way as they do with the quality work, they go through the factories’ operations, find improvement areas and make an improvement plan that is then followed up.

“The factories are quite comfortable with this approach. For them, it is another area of their operations that NCAB is helping them to improve. Just like our quality work, we make our findings known and are clear about what we’d like them to improve. We work as partners and develop together,” says Anna Lothsson.



Jenny Zhang, Sustainability Manager, NCAB Group China and colleague Aaron Dai, Commercial Specialist are welcomed at the factory where Jenny is to conduct a sustainability audit.

INTERESTED CUSTOMERS

As its framework for sustainability, the NCAB Group applies ISO 26000, an international standard on Guidance on Social Responsibility, which covers several aspects of sustainability, including environmental, social and ethical. NCAB has integrated ISO 26000 into its own internal audit system and performs an annual declaration of compliance with the standard, which is verified by a certified body.

“We also notice a growing interest from customers regarding these issues. Detailed questions about how we work with sustainability are increasingly a part of the customer’s evaluations “, says Anna Lothsson and continues: “In Sweden and Germany, we have also met customers who were keen to learn about our experience of sustainability work, seeing it as a possible way of adding value to their own business. We are finding the dialogue with our customers extremely inspiring, with collaboration in the field of sustainability now a highly significant factor towards achieving results. We are all part of a supply chain and together we can create a sustainable business.”

NCAB is continuously working to communicate and raise interest in sustainability work. Among other things, the company has developed a symbol, Conscious Component, which covers the ethical, social and environmental aspects of ISO 26000, and is another example of NCAB’s systematic approach to these issues.



“We communicate our activities in the field of sustainability through seminars, in our annual sustainability report and through other channels. We emphasize in particular the importance of design and quality for resource-efficient - and thus greener – board production,” says Anna Lothsson. [Read more about this in our separate interview with Chris Nuttall in this newsletter.]

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ANNA LOTHSSON, STRATEGIC PURCHASING MANAGER, NCAB GROUP

STRATEGIC OVERVIEW 2018

Transparency towards customers, suppliers, employees and other stakeholders serves as an asset for sustainability in more than one way. The annual sustainability report presented by NCAB describes much of the work done in the area.

“Since we are transparent with the deficiencies we detect and the measures we take to remedy them, I am convinced that more people will come to realize what reality looks like and gain an understanding of how important sustainability work is. Openness is also an effective way of avoiding behavior that clashes with our values and instead inspire dialogue about ways of creating a sustainable business together,” says Anna Lothsson.

NCAB will continue unrelentingly with its sustainability work. Next year, for example, the company will be reviewing its sustainability strategy.

“We plan to once again gather information from our stakeholders to evaluate what they feel is most important in this area, this to enable us to determine which areas we should focus on in the coming years,” Anna Lothsson concludes.

FOCUS AREAS FOR THE NCAB GROUP SUSTAINABILITY WORK

Supply Chain

- › Human rights and social conditions
- › Environmental impact, focusing on chemicals
- › Conflict Minerals

Employees

- › Employee satisfaction
- › Equal opportunities
- › Anti-Corruption
- › Internal environmental work

Customers

- › Sustainable product development
- › Transportation/Green logistics
- › Communicating our sustainability approach

Hands-on sustainability work in China

Jenny Zhang has been Head of Sustainability for NCAB in China since February 2017, and is responsible for controlling compliance with NCAB's sustainability requirements at the factories and NCAB China office. We asked her to tell us a little about her work.

How would you describe your new role?

"As a Sustainability Manager, I am responsible for implementing NCAB Group's Code of Conduct in our operations in China. This includes the sustainability audits we implement at factories, as well as checking to ensure that they comply with the REACH and RoHS environmental regulations. Previously, I worked part-time with our sustainability audits. Now that I work 100 % with sustainability, I have time to carry out more effective audits and can offer a thorough and detailed analysis. I can help our factories to further improve their sustainability work in areas such as labor and working conditions, health and safety, environment and chemical management.



Jenny Zhang, Sustainability Manager, NCAB Group China

"As part of the work, we have, for example, updated our audit template. We monitor a greater number of items and obtain a better overview of the factories' sustainability work. The template contains more checklists, and they are also more detailed, says Jenny Zhang.

How many sustainability audits do you now conduct per year? What are your plans moving forward?

"So far in 2017 we have conducted full sustainability audits at 7 factories and 4 follow-up audits, which compares to the 3 factories we audited in 2016. Before the ending of this year we will conduct 11-13 full audits and 6-7 follow-up audits. As far as our main factories are concerned, we will continue to conduct a new sustainability audit every 2 years, which we then follow-up with a return visit within 6 months, to check that they have implemented the improvements we required. If there happens to be several manufacturing units within the same factory, we always carry out separate audits at each of these units. I should also mention that we carry out audits on new factories that are on NCAB's list of potential new partners."

"The employees are increasingly realizing that this is beneficial for them, while impacting positively on the environment and our health and safety."

JENNY ZHANG, SUSTAINABILITY MANAGER, NCAB CHINA

What does a sustainability audit involve in practice?

"It is similar to a quality audit. We hold an initial meeting at the factory where I describe the agenda and our audit template, go through the schedule we have set for our report and the feedback from the factory. Then I go through all their relevant documentation covering sustainability, such as policy, goals, activities, management and performance reports, and improvement plans. I also check through documents covering working time, salaries, education and safety etc.

"Apart from the documentation, I carry out inspections onsite at the factory. For example, I make certain that they don't employ child labor, that they have fully functioning fire safety systems in place, as well as personal protection equipment and first aid. I also check that they are documented and receive regular service checks. I verify how chemi-

cals are handled, transported and stored. I scrutinize their waste and sewage treatment as well as ventilation systems. I also inspect the dormitories to establish whether they are clean and roomy enough for their purpose and that their canteen has the appropriate authorization to produce food.



One of the aspects checked in a sustainability audit is whether the factory's employees have learned how to use and look after their protective equipment and that this is documented.

"I conduct interviews with workers to check the status of the sustainability work in practice. Have they learned how to use the personal protective equipment properly? Is the equipment properly maintained? Are chemicals handled as they should be? What kind of insurance coverage does the factory provide them with? Have they been informed about the laws covering minimum wages, working hours and so forth? I also interview senior management about their strategies, policies, organization, goals, activities and more."

How can you make sure you get the true picture?

"We carefully go through a great deal of official documents covering processes, business systems and so forth, but we are never satisfied with that ourselves. We also scrutinize different types of protocols, such as training, so we can see who has actually participated, when and where. Moreover, we check directly with the employees that they actually took the various tests and what they learned. If an employee gives the impression of having forgotten something from a training he had been enrolled for, the factory could lose points. As mentioned above, we move freely in the factories and, for example, check the protective equipment ourselves. I also ask workers to show me how they perform different tasks. For each point on the checklist, we use at least two methods to confirm real status."

Do you have any examples of what you find in your audits that lead you to demand improvements from the factory?

"One example is that while all our factories comply with the legal requirements regarding wages, including overtime pay etc., we have found that some of them have not held all the insurance cover required by law. Another example is that some factories tend to neglect the maintenance of their safety equipment, despite having maintenance plans. In other cases, we find factories which, while they have equipped themselves with the safety devices required for their processes, only have a limited number of the same and thus fail to meet what the regulations require. We have also had to ask some



"We conduct a follow-up on site at the factory within six months. This enables us to verify that they have implemented all the improvements we set out in the audit report," says Jenny Zhang.

factories to provide their employees with better training in the handling of chemicals and improve their use in the storage of chemicals."

How do you follow-up the audits and measures they lead to?

"I start by going through the feedback I receive from the factory to see that the measures they have taken are sufficient. If they do not meet our requirements, then we advise them accordingly. If it is an issue of a more serious nature, we can check things out a little later. Then, as mentioned, we conduct a follow-up onsite visit at the factory within 6 months. This enables us to verify that they have implemented all the improvements we set out in the audit report and see how these measures have panned out. The cycle then continues with another new audit 2 years after the previous one."

What signals do you generally get from the factories regarding your sustainability audits and the demands you place on them in this respect?

"My impression is that management welcomes NCAB's sustainability requirements and our audits. They see it as positive for the factory to identify problems and they do want to run their operations in a sustainable way. The management system we are pushing through in

this area constitutes something new for employees alike. They need to get used to it. However, people are increasingly realizing that this is beneficial for them, while impacting positively on the environment and our health and safety principles. More and more people are taking this approach and joining NCAB on its journey of improvement."

EXAMPLES OF IMPROVEMENTS INTRODUCED AT THE FACTORIES AS A RESULT OF NCAB'S WORK:

- > The introduction of a comprehensive management system for sustainability, risk analysis and focused training in the area.
- > No cases of child labor have been found, but factories have had to introduce action plans to handle such a situation should it occur, as well as provide training for all employees.
- > The provision of all the insurance policies required by law to employees.
- > The introduction of a comprehensive maintenance plan for all safety equipment.
- > The acquisition of sufficient numbers of safety appliances for certain processes; the provision of training in how to use them and ensuring their appropriate use.
- > The provision of training in handling and storage of chemicals as well as ensuring they are correctly handled.
- > Improving the maintenance of fire protection systems and better control of the equipment.
- > Training in the sorting of waste.

AREAS INCLUDED IN THE SUSTAINABILITY AUDIT:

- > Management Systems
- > Human Rights
- > Labor & Working conditions
- > Health & Safety
- > Environment
- > Business Ethics



Optimal design leads to more sustainable production

Nothing affects the PCB's cost and quality as much as the initial design, and a good design is also key to achieving a more sustainable approach to manufacturing. We asked NCAB Group Chief Operations Officer Chris Nuttall to tell us more about the link between design and sustainability.

NCAB Group prioritizes sustainability within its own operations and puts similar demands on the supply chain. But there are also sustainability related considerations within the PCB design phase. NCAB Group Chief Operations Officer Chris Nuttall explains that value engineering of the design also leads to smoother production, minimized material usage, fewer rejects and, in the long-run, a reduced environmental impact.

“When we do get the opportunity to help at the design stage or when customers are open for design feedback, then we can go beyond the guidelines and contribute further to a more sustainable PCB.”

CHRIS NUTTALL, CHIEF OPERATIONS OFFICER, NCAB GROUP

“NCAB's ‘Holy Trinity’- for achieving good design is firstly to be aware of, and follow, our design for manufacture guidelines, secondly to keep to our PCB design guidelines, and thirdly participate in discussions with the customer / design authority in order to provide design support which brings all of it together. All this not only results in the lowest total cost when the PCB is produced, but it also contributes to better sustainability,” he says.



Improper SMD design affects assembly.

Many customers have come to realize that they can save on total costs if they create a solid design that is engineered for volume production, where, like real estate, size usually impacts on costs. Generally, it would thus be advisable to avoid making the boards bigger than they need be and consider, for example, positioning them optimally in panels. However, Chris Nuttall does warn that there might exist a reduced awareness of what makes a ‘good’ design: “We have to consider the benefits that the manufacturing process will see when avoiding different design issues, such as thermal imbalances with improper SMD design, poor annular ring design or copper clearances. These and many others, are aspects



Chris Nuttall, Chief Operations Officer, NCAB Group.

that can easily lead to yield concerns in volume production or even during volume assembly, despite apparently working well at prototype level.

“Consideration of such details contributes to reducing material consumption. Good PCB design, including panel optimization, helps to reduce the cycle time of each production batch in the factory through reducing the number of manufacturing panels needed to build the batch. From there, if we can also influence or improve the design in such a way that it reduces rework or scrap at the customer side, then we do have an impact on the complete life cycle of the PCB. Following this approach can reduce material and energy consumption, in addition to reducing waste and that reduces environmental impact in several ways,” explains Chris Nuttall.

“Ultimately, the level at NCAB can support these activities is determined by the customer. When we do get the opportunity to help at the design stage or when customers are open for design feedback, then we can go beyond the guidelines and contribute further to a more sustainable PCB,” concludes Chris Nuttall.

NCAB'S “HOLY TRINITY”

- Design for Manufacturing – Consideration to elements of the PCB design that allow for ease of manufacturing and also improved yields, both in the manufacturing and assembly stages.
- Design Guidelines – Understanding of the manufacturing capabilities, tolerances and potential limitations when we need to move complex designs.
- Design Support – Sharing our knowledge and offering feedback to the customer, so that we can find solutions to challenges or optimize the design in the most efficient and sustainable way.

Can we afford to work on sustainability?

HANS STÄHL
CEO NCAB GROUP



I get asked this rather often and I always answer by turning that question around: can we afford NOT to work with sustainability? Another question I usually get is about the cost of our sustainability work. My reply here is that we make money from it! More specifically, we secure the survival of our business and - to use a well-worn but still highly-relevant expression - we contribute to a better world! Both of those questions tell of the lack of awareness that is still widely prevalent in our society today. What we should be asking here is: how come sustainability helps to generate income despite the costs involved to cover consultants' fees and the work our employees put into it? Well, it is basically because these efforts provide a doorway for new customers. The equation adds up thanks to the priority customers put on secure deliveries and ensuring that the partner they work with will be around in the long-term. Another question one might also ask is what the cost would be if the company were forced to cease operations or pay high fines as a penalty for any unethical behavior, not to mention the consequences and cost if one of our employees or a worker at one of our partner factories should suffer a fatal accident? These issues are important aspects of sustainability, both from an economic and ethical perspective.

Can NCAB guarantee that their factories do not break any rules or regulations? Naturally, I wish I could answer yes to that question, but I can't. When we carry out our audits and spot inspections, we still find cases of emergency exits being blocked, or showers, where chemical processes are involved, being out of order. Both of these types of irregularities can lead to human tragedy. What we can guarantee however, is that we have control of our factory follow-up procedures, we can guarantee that we conduct audits and notify those responsible of any discrepancies and follow that up to ensure they are rectified. In other words, we are focused on ensuring that the factories follow a continuous path of improvement.

A company's most important resource is its employees, not its machines or computer equipment. An important part of both our change management work and our focus on giving our customers what they want is to get our staff involved so that everyone works together to achieve our goals. I am very proud of the work we are doing in sustainability and that everyone at NCAB is on board. That is an absolute necessity, as is having the board and management in the vanguard of this process!



NCAB Group in Social Media

For a few months now, customers and other interested parties have been able to follow us on Twitter and

LinkedIn. We have also started a blog where we immerse ourselves in the versatile world of circuit boards! Follow us on:

» [Twitter](#) » [LinkedIn](#) » [Blog](#) » [YouTube](#)

Join us!

We are always on the lookout for full time competent employees. If you are a first-class Technician,

Customer Support or Key Account Manager, do not hesitate to contact us or send your CV to: recruitment@ncabgroup.com

Subjects we have covered earlier

Do read our earlier newsletters. You will find them all on our website, www.ncabgroup.com/newsroom/

» The PCB Industry in Asia

2017 06 29 | NEWSLETTER 2 2017

» Engagement and competence development in focus

2017 04 06 | NEWSLETTER 1 2017

» Future strategy

2016 12 14 | NEWSLETTER 4 2016

» Working closely with the factory

2016 10 12 | NEWSLETTER 3 2016

» Responsibility as a business concept

2016 06 22 | NEWSLETTER 2 2016

» China's economy

2016 04 08 | NEWSLETTER 1 2016