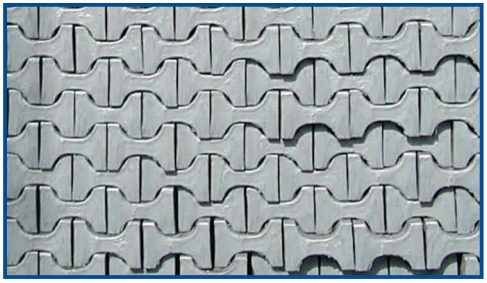
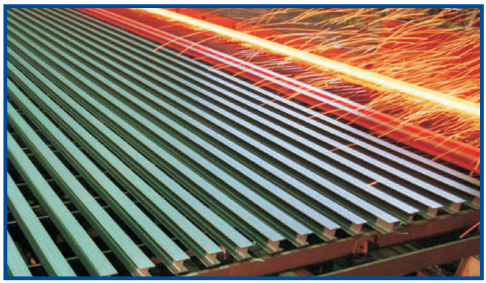
CSN
Companhia Siderúrgica Nacional

SWT STAHLWERK THÜRINGEN

Stahlwerk Thüringen GmbH

Sustainability and Environmental Management




Stahlwerk Thüringen GmbH

Since the foundation of the “Maximilianshütte” 140 yeas ago, there has been a traditional iron and steel production facility on the Unterwellenborn site in Thuringia.

Stahlwerk Thüringen GmbH (SWT) was established on the 1st of July 1992 on the site of the former Maxhutte, Unterwellenborn. This marked the beginning of a complete modernisation programme for the Unterwellenborn site.

In 1995 the new steel manufacturing facility with electric arc furnace and continuous casting was brought into operation. The modernisation of the more important plant equipment of the rolling mill was completed in 2002. The de-dusting plant in the steel works was modernised in 2006 and the waste products disposal site was expanded in 2009. The most recent major modernisation project was the installation and commissioning of the new “breakdown” stand in the rolling mill.

In February 2012 SWT became part of the Brazilian steel group CSN (Companhia Siderúrgica Nacional).

CSN is a leading steel manufacturer who also own iron ore mines, cement works, electrical power companies and logistics infrastructures, such as railway networks and sea ports.

The SWT product range includes sectional steel (IPE, HE and U-channels) and steel railway sleepers.

The products are sold all over the world by the company's sales organisation CSN Steel Sections.

Stahlwerk Thüringen GmbH currently has approx. 700 employees.

The certified integrated Management System ensures all customer requirements can be met as well as satisfying exacting standards for health, safety and the environment.

In 1999, 2000, 2001 and 2007 the company was awarded the prize “Workplace Seal” of the Evangelic Church of Germany (EKD) *“Arbeit plus”* for its exemplary workplace policies and social commitment.

In November 2002 SWT was awarded the Thuringian state prize for quality (“Thüringer Staatspreis für Qualität”).

In 2005 and 2012 the company received the prestigious health and safety award *“Johannes Bube”.*

White steam over the casting shop

Sustainability – Expectations and Reality

Stahlwerk Thüringen GmbH is committed to the principle of the "sustainable development" and meeting this challenge successfully with the aim of improving the economic and social living conditions and to protect the natural conditions for future generations in the long term.

Sustainable development is only possible using this principle to meet the needs of future generations.

Since 2000 Stahlwerk Thüringen GmbH has been working as the first metallurgical company in Germany with an integrated Management System comprising of the Quality Management Standard (DIN ISO 9001:2008), Environmental Management Standard (DIN ISO 14001:2004) and Occupational Health and Safety Standard (BS OHSAS 18001:2007).

Stahlwerk Thüringen GmbH joined the Sustainability Agreement of Thuringia which is a logical continuation of our business philosophy.

Together with other German steel manufacturers, Stahlwerk Thüringen GmbH works within the framework of "bauforumstahl" on a uniform environmental product declaration (UPD) in line with ISO 14025.

The UPD describes the specific environmental influences of sectional steel and heavy plates in Germany

and supports the development and realization of environmentally friendly and sustainable buildings and constructions.

Numerous investments in modern technologies, such as the commissioning of the electric steel works with continuous casting in 1995 and the modernization in the rolling mill, are important steps to guarantee employment and to reduce the environmental burden in our region.

Thanks to these modern plants we are able to supply products to our customers with a minimal impact on the environment.

Management decisions at Stahlwerk Thüringen GmbH are always based on social and environmental considerations as well as on economic aspects. This means that the company objective is not only high product quality and service but also to achieve improvements for the regional and the social environment.

Stahlwerk Thüringen recognises the importance of training its own apprentices in-house.

Since 1994 the company has trained apprentices as industrial mechanics, electronic technicians and industrial clerks.

Since then more than 120 young skilled workers have been given full time contracts. At the moment there are 53 trainees. Every year the company takes on 10 apprentices.

Our administration building, in the foreground some IPE sections

Sustainability with Targeted Environmental Measures and Energy Aware Processes

The certificates of the DQS (German society to the certification of management systems)

The Environmental Management to DIN EN 14001 and Energy Management to DIN EN 50001 are central to the integrated Management System. Compliance with current legislation is an important cornerstone of the company's environmental protection and energy management. Therefore the responsible members of staff (for emissions and water protection, hazardous material, dangerous material, radiation protection etc.) regularly attend training courses to ensure they are up-to-date with the latest legislation.

In 2008, to ensure the compliance with legal provisions and in cooperation with VISTRA, a web based schedule was established for legal provisions and is continuously being developed. This legal data bank encompasses all the relevant current legislation for the individual areas of responsibility in a up to date format for information, acknowledgement and implementation. This information system is complemented by an internal authorization register listing and reporting all company relevant authorization documents. The aforementioned system, with regard to the applicable legislation, forms the basis for observing the latest legal requirements and for the sustainable development of the company.

In order to document and demonstrate the commitment of Stahlwerk Thüringen GmbH to a sustainable and ecological approach, Stahlwerk Thüringen GmbH joined the “Sustainability Agreement of Thuringia 2009 to 2011 (NAThüringen)” in August 2009, this has been extended for the period from 2012 to 2014 and Stahlwerk Thüringen GmbH has also extended its membership of this agreement. The members of this agreement, consisting of the Federal State Government and Thuringian Businesses, have voluntarily committed to the objective of achieving a high level of natural resource preservation, energy efficiency as well as environmental and climate protection. Central to this are the introduction of ecological resource preservation as well as energy efficient technologies and equipment and the recycling of residual material. Intensive communication between the Federal State Government, administrative bodies and businesses ensures the further development of the sustainability process.

Since its formation Stahlwerk Thüringen GmbH has been working intensively to optimize the production process with regard to the use of materials and energy, and to invest in the state-of-the-art technologies. This long-term targeted effort has enabled us to become the leading company with regard to reduction of carbon dioxide emissions in our industry (production of non-alloy steel profiles). As a result, we are making a significant contribution to climate protection.

NAThüringen
Nachhaltigkeitsabkommen Thüringen

Das Unternehmen

Stahlwerk Thüringen GmbH

nimmt aufgrund seiner freiwilligen Leistungen
für eine nachhaltige Entwicklung, insbesondere
der Anwendung eines Umweltmanagement-
systems gemäß DIN ISO 14001,
am Nachhaltigkeitsabkommen Thüringen teil.
Die Teilnahme endet am 30. September 2012.

Für die Thüringer Landesregierung
Matthias Machnig
Thüringer Minister für Wirtschaft, Arbeit und Technologie

Für die Thüringer Wirtschaft
Prof. Hans B. Bauerfeind
Präsident der Industrie- und Handelskammer Ostthüringen zu Gera

Erfurt, den 22. März 2010

Steel sections and channels in different dimensions are produced at Stahlwerk Thüringen, here HE beams being loaded

Sustainability in the Production Process

Recycling material scrap

Recycled scrap is used almost exclusively for the production of steel sections in Stahlwerk Thüringen. Less than 1.5 % scrap is produced on site (separation and pig iron) and is also reused in the production process.

Steel scrap is our most important raw material

De-dusting Plant

Emissions from the furnace exhaust gases are kept to a minimum using a de-dusting facility with coke particle injection filtration system.

Recycling of Zinc from Filter Dust

Dust from the de-dusting plant is used as a primary material for the production of zinc.

Slag Recycling

Slag from the electric arc furnace is recycled and used in the construction industry, for example road building.

Burner System Electric Arc Furnace

State of the art burners ensure that gas, oxygen and energy costs are kept to a minimum.

Use of Scale in the Building Material Industry

Scale resulting from the manufacturing process is used in the building material industry.

Beam Blank

The production of beam blanks of various sizes and cross-sections (pre-formed) reduces the energy consumption of the rolling mill.

Hot Charging

A high percentage of beam blanks are transferred in a hot condition to the pusher type furnace resulting in gas efficient processing.

Conversion of Pusher Type Furnace

The conversion from city gas to natural gas has reduced both gas consumption and CO_2 emissions

De-dusting Stands

A de-dusting plant at the tandem stands ensures that dust levels in the rolling mill are kept to a minimum.

Rail Transport Company (EVU)

The foundation of an internal rail transport company means that a large proportion of shipments are made by rail.

Environmental Management

In 2004 it as decided that measures would be taken to further reduce the dust emissions produced by the production processes and the resulting dust emissions in the area surrounding Stahlwerk Thüringen. The existing steel works de-dusting plant was comprehensively overhauled using the most modern technology available. The new plant was commissioned in October 2006.

Two new filtration systems were installed, doubling the existing filter surface area to 24,000 m².

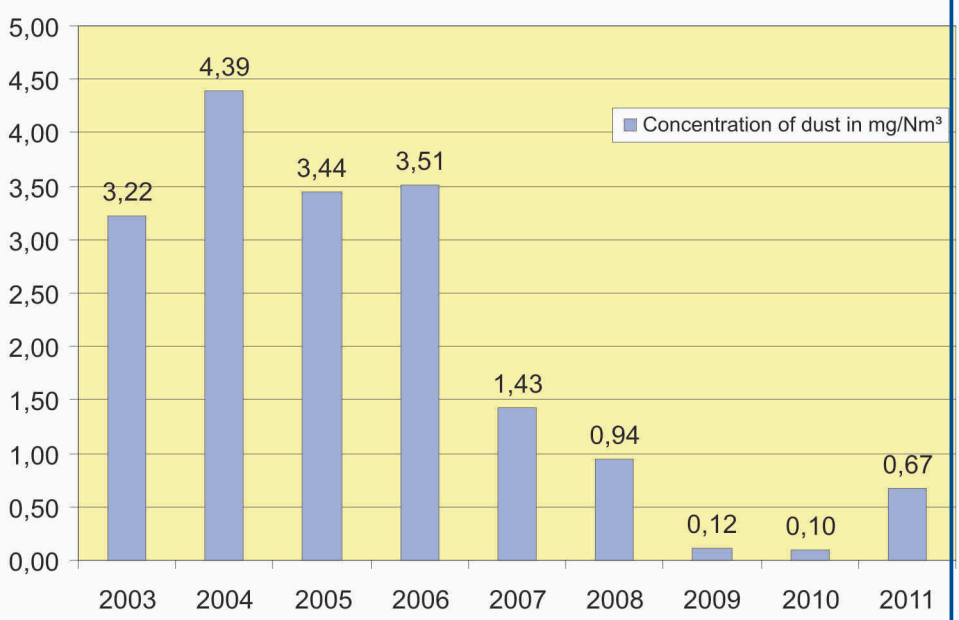
Additionally, the mixing chamber was replaced by one which is three times larger, a third extraction fan and a larger exhaust stack were also installed. The associated pipework was adapted accordingly.

The new coke particle injection system enables emissions to be consistently below the legal limit by a factor of ten.

The dust emissions have been reduced with the increased filtration surface area from 3.5 mg/Nm³ to less than 1.0 mg/Nm³ which is significantly less than the legal limit of 5.0 mg/Nm³.

Further optimisation of the system is an ongoing process.

Dedusting Plant - Trend 2003 - 2011
(Annual average of dust concentration)



Dedusting plant of the Electric Steel Plant

Old plant *New plant partly finished* *Completed new plant*

Before 2008 the transfer of hot electric furnace slag to the containers for transportation to the disposal site of SWT took place outdoors. In 2008 a large roof hood was installed and the area in front of the “Clean Pit” was enclosed on three sides resulting in a significant reduction of dust emissions, especially in the areas adjacent to the steelworks.

In 2012 improvements and process changes were made for the reduction of dust emissions at the residual slag box area of the casting process as well as for the transfer of the slag from the ladle furnace.

The slag from electric arc furnace and ladle furnace is temporarily stored on the SWT disposal site for subsequent recycling by the separation plant.

Magnetic separation removes the metallic residues out of the slag for reuse in the electric arc furnace. Stahlwerk Thüringen GmbH is continuously improving the recycling of its waste and by-products in line with the recycling and waste management regulations(KrW-/AbfG).

The recycled electric furnace slag is recycled as an alternative material (e.g. road construction). The recycling proportion is currently approx. 90 %. The remainder (oversized pieces) is deposited on the waste disposal site.

Trials are currently being carried out (2011-2013) to improve the recycling properties of the ladle furnace slag using a “shock cooling” process which, if successful, will be implemented at the end of the test period.

Before beginning of construction works

Disposal site for slag Installation of mineral sealing layer

Almost completed 1st construction stage

In co-operation with the college Anhalt (Bernburg), the ladle furnace slag is currently being checked for its suitability for use as a fertilizer.

Stahlwerk Thüringen GmbH started the construction of the new waste product disposal site in spring 2009 to guarantee the safe long term disposal (about 50 years) of the metallurgical waste products, having completed the project approval procedure in 2008. The waste product disposal site meets the standard for category 1 disposal and

Disposal site for slag (view from south)

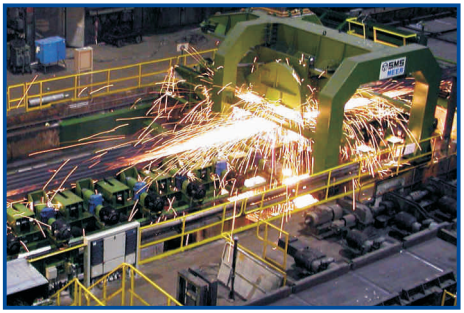
has been designed to the corresponding environmental safety measures (e.g. mineral sealing layer) and was commissioned in 2010.

Stahlwerk Thüringen GmbH is constantly aware of the importance of responsibly associated with the discharging industrial waste water directly into a natural water source and that is why the prevention of water pollution is of the utmost priority. In 2003 the company voluntarily constructed an additional waste water retention basin just before the discharge area. This waste water retention basin is equipped with the most modern

System for wastewater treatment

oil detection and extraction technology as well as pH-value stabilization. Measuring systems permanently monitor the typical waste water parameters.

The company works within the European REACh-Regulations for the Registration, Evaluation, Authorisation and Restriction of Chemicals. In line with this, Stahlwerk Thüringen preregisters the relevant substances and has joined the corresponding consortiums for substances arising at the company. The “REACh-Ferrous Slag-Consortium (RFSC)” is for the slag from the electric furnace and ladle furnace, and for scale it is the “Iron Platform”.

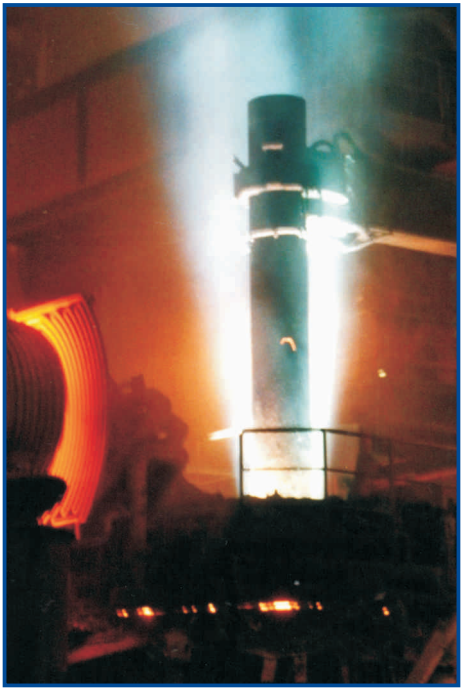


At the cold sawing unit the sections are cut for the customers

Energy Management

Stahlwerk Thüringen is an energy intensive company. Our production processes require a high level of electrical and gas energy for the manufacture of our customer's products. This means that an energy aware approach to our production methods is an important component of our company strategy. The energy management has been taken to the next level with the implementation and maintaining the standards set out in DIN ISO 50001 as a goal for the company.

Since the formation of Stahlwerk Thüringen GmbH a variety of new technologies have been introduced, resulting in significant energy savings.



The electric arc furnace is our biggest consumer of electric energy (> 100 MVA)

An example of this reduction is the total energy consumption for the DC electric arc furnace with the introduction of injection blowing technology. Further improvements to the electric arc furnace process management were possible with the use of exhaust gas analysis systems. The consumption of natural gas for the continuous casting plant has been reduced with the use of a special coating which has lengthened the service life of the fireproof lining of the tundish.

The total energy consumption of the rolling mill has also been reduced with the commissioning of new equipment and machinery as well as the introduction of frequency controlled drives. New pumps and valve technology in the hydraulic station H1b have substantially improved the efficiency of the plant.

In 2012 a research project was undertaken in cooperation with a plant equipment manufacturer for a heat recovery system from the exhaust gas of the electric arc furnace. A further energy saving measure is the planned equipping of the pusher type furnace combustion gas plant with a frequency converter.

The energy management system as per DIN EN ISO 50001 has been approved by the German Association for the Certification of Management Systems (DQS). Thus committing the company to comply with its own energy policies.

This is implemented by systematically analysing and evaluating the energy consumption, the recording and presentation of energy flow, the planning,

preparation and implementation of energy saving measures as well as regular evaluation and updating of the results.

Every 3 months the appointed responsible employees report on energy management activity.

The pusher type furnace for the rolling mill runs on natural gas

Within the framework of the energy management policy Stahlwerk Thüringen GmbH must comply with the relevant national laws and regulations, to actively involve the employees in the implementation of the energy policies and to carefully check and evaluate energy efficient solutions and proposals.

The long term goals of Stahlwerk Thüringen GmbH are, to use energy resources as economically as possible and to reduce the greenhouse gasses produced by the steel production in the steel works and by the pusher type furnace of the rolling mill to a minimum. We aim to eliminate all unnecessary energy usage by ensuring the highest possible output efficiency and the lowest possible failure rate.

Assurance of Contamination Free Deliveries of Steel Sections

The following measures have been made to ensure that all products and by-products produced by Stahlwerk Thüringen GmbH are free of radioactive contamination:

- Contractual agreements with suppliers of scrap, alloys and additives that the deliveries are not contaminated.
- Checking of all goods inwards for radioactivity.
- Testing of all steel sections and by-products for radioactive contamination.

SWT have installed modern highly sensitive measurement equipment for the detection of radioactive substances.

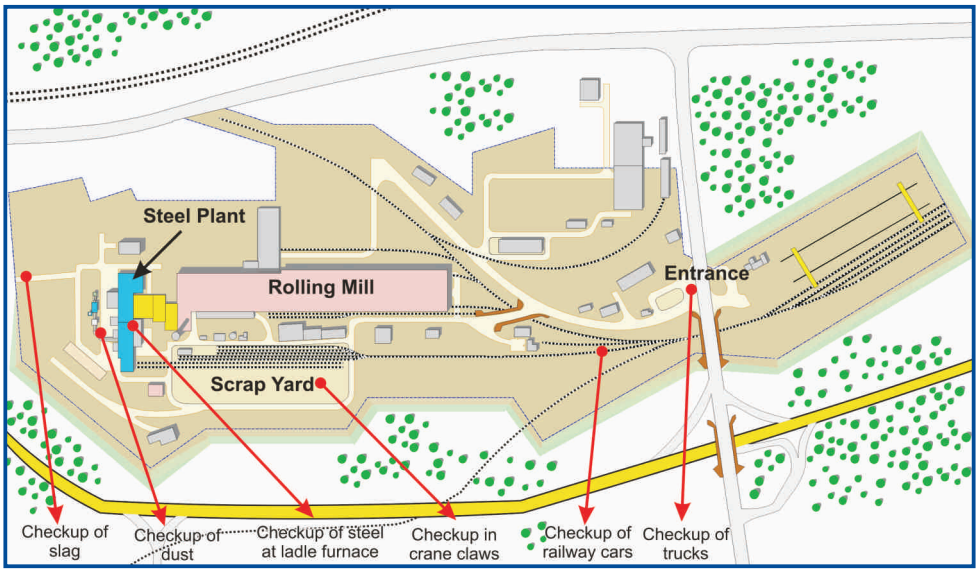
A comprehensive monitoring of goods inwards and outwards is carried out and documented within the framework of the Quality Management System.

To prevent any radioactive materials reaching the production process there are checks made before goods (especially scrap) are allowed on site, these are:

- permanent monitoring equipment for all deliveries by road (HGVs).
- permanent monitoring equipment for all deliveries made by railway wagon.
- additional independent check made using detectors on the crane grabs used for material transfer in the scrap yard.

Checks for radioactivity are made using a NaI detector positioned in a lead shielded measuring point at the ladle furnace to guarantee that all steel sections delivered to our customers are free of contamination.

To achieve the full and complete monitoring of all materials leaving SWT the by-products, slag and filter dust, are also checked for radioactive contamination.






Environmentally Aware Logistic Management in Stahlwerk Thüringen

With a total transport volume of about 3 million tons, equally distributed between goods inwards (scrap, additives, and spare parts) and goods outwards (sections, scale, by-products) the logistic management plays an important role in our environmental management.

Successful environmental management includes avoiding unnecessary material movements, optimization of transport distance and orientation towards environmentally friendly mode of transportation.

In recent years, SWT has introduced and optimised logistics projects.

The results being:

- 90% of the scrap brought into SWT (1.1 million tons per year) travels a distance of no more than 250 km
- Over 55% of this scrap is transported by rail.
- In 2001 SWT founded its own rail transport company to ensure a reliable supply of scrap by rail (approx. 450,000 tons per year).
- SWT produces steel sections specifically for customer orders, minimising the environmental influences caused by movements and transportation of material.
- About 70 % of the produced steel sections is shipped by rail from the dispatch department of the rolling mill directly to the customer.
- 75 % of steel sections are transported to destinations within Germany or the bordering countries (short distances for transportation)
- The layout of the production within SWT has been logistically optimised. All material movements between the steel works and the rolling mill/ dispatch department are made with electrically powered cranes or permanently installed roller tables.
- Two thirds of the journeys made by the Stahlwerk Thüringen GmbH internal rail company are bidirectional (scrap – steel sections – logistics) which means the number of journeys without loads are kept to a minimum.
- All the locomotives used in SWT are equipped with the most modern engines available, reducing consumption of diesel fuel and engine oil as well as substantially lowering noise and exhaust emissions.

A train delivery scrap to Stahlwerk Thüringen

Finished sections on their way to the customer

Sustainability of the Personnel

Since its foundation Stahlwerk Thüringen GmbH has been committed to the training and safety of its employees by promoting and supporting the training of their own skilled workers.

Due to the occupational training and apprenticeships carried out in partnership with training institutes, it has been possible to welcome 120 highly qualified and motivated members of staff into the Stahlwerk Thüringen GmbH team.

Furthermore, we encourage the internal promotion of existing employees by offering organisational and financial support for further education as master craftsmen, technicians and degree qualifications.

We also offer financial grant support to graduate students in partnership with colleges and universities.

There are only professionally trained qualified personnel currently working for the company.

As well as occupational training, the company also regards health and safety in the workplace as an important component of the company policy.

Regular occupational related medical examinations are made by the company doctor. There are also numerous organisational measures, such as Works Safety Committee in addition to the tasks carried out by the appointed departmental safety representatives.

So that the company is prepared for most eventualities, further training courses for the first aid staff and the works fire brigade are carried out regularly.

These safety management measures are complemented by a yearly day of health and the participation in the health and safety competition organised by the French steel industry (GESiM). The company's commitment to health and safety has been demonstrated by the frequent honour of receiving the GESiM award as well as the Thueringian workplace safety award “Johannes Bube”.

In 1999, 2000, 2001, and 2007 the company received the workplace seal of approval from the Evangelical Church of Germany “Arbeit Plus” for exemplary working policies and social commitment.

Regional Integration and Social Commitment

From the very beginning Stahlwerk Thüringen GmbH has valued the intensive and direct contact with the members of the local community, local council and their representatives.

Each year the company welcomes more than 2500 visitors and customers for tours of the works who regularly provide positive feedback with reference to the importance Stahlwerk Thüringen GmbH places on sustainable development.

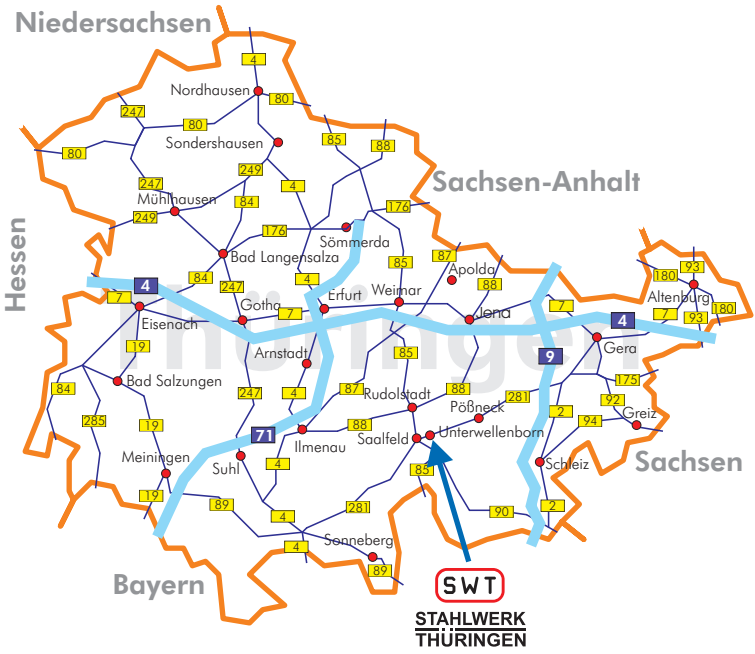
This has been a particularly important aspect for the development of the image and the trust placed in the company in the Unterwellenborn region.

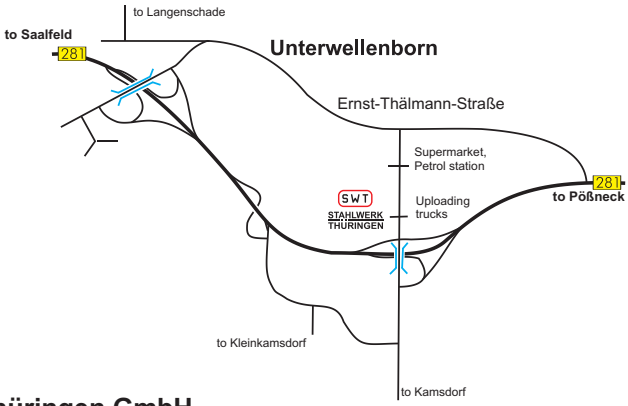
Stahlwerk Thüringen GmbH plays an important role in supporting the social programme of the immediate local area as well as that of the wider region.

Through sponsorship of a variety of clubs and associations, with sporting or cultural objectives, the company is able to make the life of the members of the local community and wider region more varied and interesting.

Aerial view of Stahlwerk Thüringen works with Kamsdorf at the upper right and Unterwellenborn at the lower left of the picture

How to find us:





Stahlwerk Thüringen GmbH
Kronacher Straße 6
07333 Unterwellenborn

Phone +49 3671 - 4550 0
Fax +49 3671 - 4550 7107
Mail info@stahlwerk-thueringen.de
Web www.stahlwerk-thueringen.de

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