

Torsten Fischer of Krieg + Fischer Ingenieure discusses a legal investigation related to a biogas project that never materialised

First-person sleuthing, investigation of a never-built biogas plant

Torsten Fischer, founder and managing director at Krieg + Fischer Ingenieure, has been an expert legal witness for more than 10 years covering 120 cases and wrote his first report about a biogas plant accident more than 15 years ago. In this personal account, Fischer discusses a legal dispute between an investor and a farmer, exclusively for *Bioenergy Insight*.

Setting

This court case is about an abstract biogas project. An investor and a farmer signed a contract for the construction of a biogas plant. The investor wanted to earn money with his investment. The farmer wanted to rent some of his farmland, take the heat from the combined heat and power (CHP) operation, and earn money in operating the plant on behalf of the investor.

My reaction

I do not like abstract investigations. I prefer the breakdown of a pump or deficiencies in concrete quality.

The job

It was all based on paper files and it became far more interesting than what I had originally thought. The case related to the contract both parties had signed by the end of summer 2009. As part of the deal, the investor assured that the biogas plant would be ready by 30 June 2010. This did not

materialise, so the farmer went to court and sued the investor.

The main question from the court was: “Would it have been possible to build the plant in this time frame?” Interestingly enough, the court asked me to consider a specific part of the contract. According to the documents, the investor was obliged to “do everything possible” to build the plant. Both parties had agreed on this.

My report

Directly after signing the contract, the investor started to prepare the permission documents; this was all related to German standardised biogas plants: a digester and a secondary digester tank plus a gas engine with 500KWe. To prepare such permission documents used to be mass production in 2009. The documents were prepared and delivered to the local authorities in late summer/early autumn 2009. Then, the investor waited.

There was communication with the local authorities, especially towards the end of the process. All went well and in December 2009, just before Christmas, the investor received the required permits. Then, to cut a long story short, nothing happened. As months passed, the farmer from time to time knocked at the door of the investor and was informed that it would be ready “soon”. In autumn 2010, the farmer started to get angry and the situation was taken to court.

My job was to explore whether there had been enough time to build the plant – in due

consideration of “do everything possible”. I started the report explaining to the court how a ‘proper’ biogas project would have worked. Directly after submitting the permission documents to the local authorities, the investor would have looked for his preferred EPC contractor. At this stage in the process, every experienced investor would already have their favourite EPC contractor in mind. Some information must be delivered by the EPC contractor in order to prepare the permission documents. Therefore, it could be assumed that – with a clear idea as to who the EPC contractor would be by the end of autumn 2009 – any such biogas project is all about organisation of the components. The main components for the construction being earth and civil works, mixers, pumps and pipes, gas engine, gas train, etc.

To make this clear, without having the final permits, it was not clear to the investor what detailed requirements would come from the local authorities. However, as the plant was a standard one and the site nothing special, no surprises were to be

anticipated. Additionally, “do everything possible” ultimately means accepting some risk. I gave the investor two months to find an EPC contractor and found that to be fair.

The longest delivery time was for the gas engine. Back in 2009/2010 such a gas engine would have taken, roughly, up to four months between ordering and arriving on site. A well-prepared EPC contractor could have been ready to order the CHP right after the final permit checks, meaning before Christmas 2009, or at the very latest, early in 2010.

Investigation

With no earthquakes, tsunamis and hurricanes, the main factor affecting construction sites in Germany is poor weather, such as rain and snow. There is an official institution in Germany that defines which day is (partly) a bad weather day and which not. As an example, Figure 1 shows a diagram for the weather station that is closest to the farm. I investigated the time from January to March 2010 to cover the winter period.

It turned out that in the first half of 2010, there would not

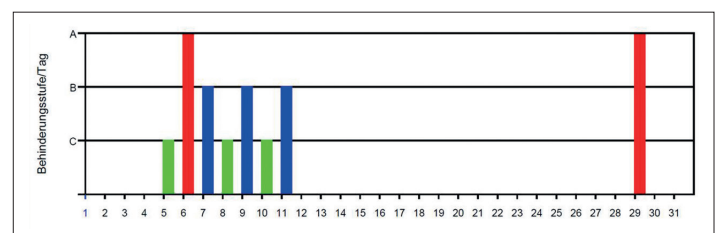


Figure 1. Data supplied by the German Weather Service, Deutscher Wetterdienst¹, for March 2010 at the closest weather station, 10 kilometres from the construction site. The red beam shows the days when construction work would be very difficult. The blue beam shows the days when construction work would be difficult. The green beam shows the days when construction work would be unfavourable

Earthworks	2 weeks
Concrete works tanks	2-3 weeks
Concrete works other buildings	2-3 weeks
Pipe & pump works	3-4 weeks
Tank equipment (mixers, heating, gas holder)	2 weeks
Electrical works, process control	3 weeks
CHP	3-4 weeks

Table 1. Components with typical construction periods for a standardised 500 KWe biogas plant

have been any (reasonable) possibility for construction work in a period of, in sum, 63 days. This left the investor with around 120 days or 17 weeks to build the plant, with the start of construction in mid-February 2010. This all translates to a very tight schedule. So, the proper organisation of all the necessary suppliers was of the essence.

Some of the work can be done in parallel.

Finally, the court gave me something more to consider: what was the proper definition of a biogas plant being ‘ready’? Ready with 100% biogas

production? Readily constructed but not biologically started-up? Finally commissioned by the investor from the EPC contractor? Finally accepted by the local authorities?

To create my definition, I followed the German Renewable Energy Law: a biogas plant is in operation with the first electrical kWh produced. This does not necessarily mean that all the construction work is finished. Final road works or plant growth might need months longer. The judge agreed.

So, within the 17 weeks, there was also a need to

collect inoculum, to heat it, and to produce enough biogas for 1 KWhe. Considering the “do everything possible” element, I wrote in my report that this would be challenging but achievable, on the basis that this is Germany – with thousands of biogas plants around, there would be a possibility to find a supplier for hot and active digestate or several of those suppliers. Money does not matter, distances are unimportant as “do everything possible” describes.

Conclusion

With this in mind, the result of my report was, based on “do everything possible”, the investor could have built the plant, according to the schedule in the contract. The court agreed.

The fine print

Before the start of the investigation, I had been suspicious as to whether it would be possible to build a plant in such short a period and I did discuss the subject with a couple of engineers. Finally, accepting the “do everything

possible” element, it was clear that despite several bad-weather-days, long delivery times and even the biological start-up, it would have been possible to construct this biogas plant in the given period.

Lessons learned

Juridical people read such a contract very carefully. When you agree to do everything possible to deliver something, you had better do everything possible to deliver it. ●

Note: not all details have been presented in full and some elements have been simplified.

References:

- 1. dwd.de

For more information:

This article was written by Torsten Fischer, founder and managing director at Krieg + Fischer Ingenieure. Visit: kriegfischer.de/en/biogas-plants/services/expert-opinions-and-studies/