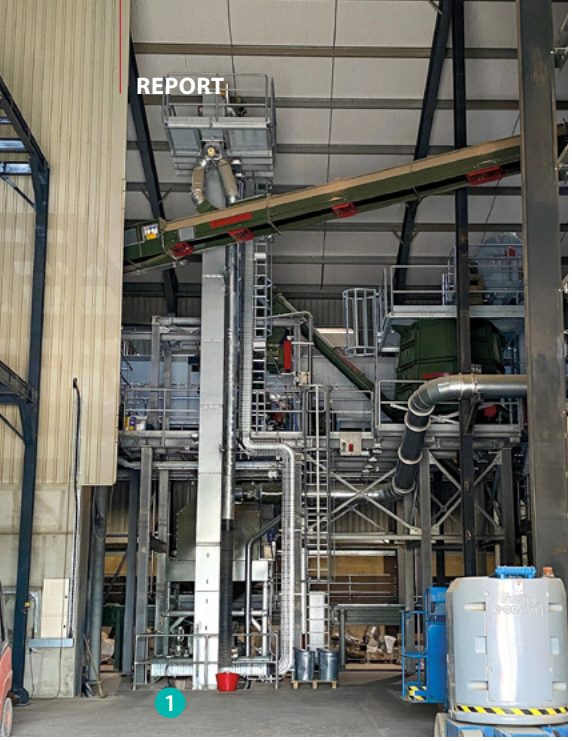
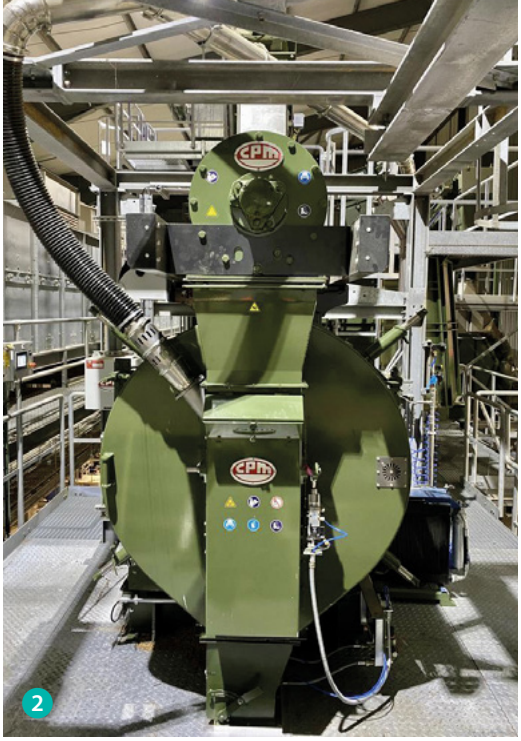




Customized modernization

1 ***Rudnick & Enners*** *adapted the new pelleting plant to the requirements of and the space available at SDL Solutions*

2 ***The CPM pellet press,*** *which was also supplied by Rudnick & Enners, is designed for an output of 5 t/h and more*

SDL SOLUTIONS

Increase in added value

Successful construction of new pelleting plant led to follow-up orders

SDL Solutions has been operating a pellet mill in Chipping Campden in the southwest of England since 2016. The company produces wood pellets for the UK market. In 2019, SDL Solutions had to decide whether to close the plant or make a substantial investment in production following various problems with the old pelleting plant. The company chose the latter and turned to German machine supplier Rudnick & Enners for the necessary technical know-how.

Martina Nöstler Rudnick & Enners

The truck loading station is equipped with a Rudnick & Enners pellet screen and a movable loading conveyor

SDL Solutions is fully committed to sustainable biomass. The company produces certified firewood, wood chips and pellets from forest and sawmill by-products. All of the raw material comes from the United Kingdom, and sales focus exclusively on the domestic market. "We offer a 360-degree service for the generation and supply of renewable energy across the UK. Our goal is to manufacture a high-quality product for our customers," SDL Solution's founder and CEO Samuel Launchbury explains.

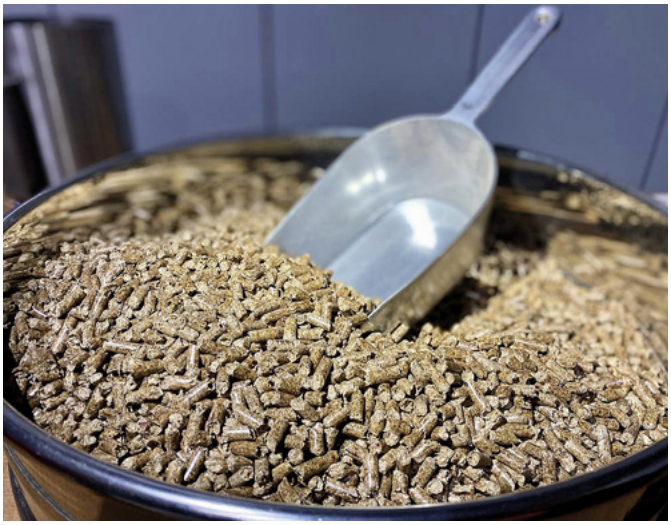
As mentioned before, the Chipping Campden site did have a pelleting plant. "We had to decide whether to discontinue production or invest in a new pelleting plant," Launchbury recalls. He opted for the latter. The Kohlbach boiler and the production hall were preserved but the old pelleting plant was dismantled. Rudnick & Enners of Alpenrod/DE was commissioned to supply the new pelleting plant.

No extraction system necessary

The sawdust and wood chips are either supplied by neighboring sawmills or ground by the company itself and fed in with the help of a wheel loader. The sawdust and wood chips enter the Rudnick & Enners wet chip hammer mill via a push floor system, removing the need for an extraction system. According to Sven Rudnick, Managing Director of Rudnick & Enners, this has mainly two advantages: An energy-intensive extraction system is no longer required while plant safety improves at the same time. "In this plant, sawdust and wood chips aren't separated. Our wet hammer mill can grind a mix of materials without the need for an extraction system," Rudnick explains. After the material has left the wet chip hammer mill, it falls on the existing belt dryer and is then conveyed on to the new dry chip silo. The pelleting plant includes a device for dosing the starch, a dry chip hammer mill, a mixing container and the CPM 7932-5 pellet press, which is designed for an output of 5 t/h and more. After the pellets have been pressed and cooled down, a three-screen vibrating screen separates both fine dust and pellets which are too long from the rest. A Rudnick & Enners mechanism then reduces the latter to the right size. The finished pellets are gently transported to the pellet silo on a tubular belt conveyor. The height and the installation of the tubular belt conveyor in the existing hall were challenging.

The scope of delivery of the German machine manufacturer also included an area for the acceptance of truckloads of external wood pellets and a truck loading station which is equipped with a Rudnick & Enners pellet screen and a movable loading conveyor. "Thanks to our pellet screens, we are able to minimize the dust content in the end product," Rudnick emphasizes. The entire control system, including the plant visualization and remote control, were supplied by Rudnick & Enners as well.

Thanks to the new Rudnick & Enners plant, the pellet quality meets award winning standards and exceeds customer's expectations



Follow-up orders for additional machines

SDL Solutions' new pellet plant went into operation late last summer. "In light of Covid-related restrictions, Brexit and temporary border closures between the EU and the UK, good collaboration was all the more important. We are pleased with the way the machines work and with the follow-up orders we received," Rudnick says, who is proud of his team's performance. The customer is also satisfied with the collaboration and communication with Rudnick & Enners: "I'm very pleased with the decision to work with Rudnick & Enners. Both companies worked well together. Even with the added issues around Covid and Brexit, both companies managed to deliver an exceptional project in a short time frame. Thanks to the new pelleting plant, we are very well-positioned to serve the need for the increasing interest in the wood pellet market. We're glad that we decided to modernize it. I'm looking forward to many more projects with Rudnick & Enners," Launchbury adds. A few weeks ago, Rudnick & Enners was also commissioned to expand the pelleting plant to include additional machines, such as a second pellet press. Also, a new belt dryer from Alpenrod will soon increase drying capacity in Chipping Campden. //

"We offer a 360-degree service for the generation and supply of renewable energy across the UK. Our goal is to manufacture high-quality biomass fuel products for our customers"

SAM LAUNCHBURY, FOUNDER AND CEO OF SDL SOLUTIONS

Sam Launchbury, Founder and CEO of SDL Solutions in front of the bulk loading station which is fitted with a Rudnick & Enners pellet screen and a movable loading conveyor. The golden yellow stone in the dispatch building is Cotswolds limestone (photo SDL Solutions).

A PELLET PRODUCER OF OUTSTANDING RESILIENCE

The Cotswolds in southwest England are famed for the yellow-golden coloured Jurassic limestone, a porous and, as stone goes, easy to carve properties. Westington Quarry, in aptly named Chipping Campden, is home to SDL Solutions, a company that has combined English entrepreneurship with German engineering to carve out a state-of-the-art pellet plant in neighbouring Stanleys Quarry.

A DISUSED LIMESTONE QUARRY IN A LOCATION designated as an Area of Outstanding Natural Beauty (AONB) is perhaps an unlikely site for a 40 000 tonnes per annum wood pellet plant. Actually, it is pellet plant 2.0 on the same site for SDL Solutions. And, it will be followed with a second pelleting line to double output in due course.

Entrepreneurial spirit

Founded in 2001 by Sam Launchbury, SDL Solutions started out as an agricultural contractor, undertaking civil groundworks and site clearance work, including the groundworks and civil engineering for one of the first anaerobic digesters in the UK.

2012 was a watershed year in terms of moving into biomass production and supply, as Sam Launchbury explains.

– We secured large site clearance contracts including one in South Wales. To handle that contract, we acquired a 561 Jenz whole-tree chipper. Then followed what to do all with the woodchips. And that's really when we entered into the biomass production and supply business recounted Sam Launchbury.

By 2014 the company ceased all contracted civil engineering works, focusing its attention solely on the production and supply of woody biomass fuels such as firewood and woodchips. Business operations grew dramatically in tandem with public support and incentives for biomass such as the Renewable Obligation (RO) the Feed-in Tariff (FIT) that were in place, and the non-domestic- and domestic Renewable Heat Incentive (RHI) that emerged.

– Putting to good use our knowledge and experience gained from previous civil engineering projects, we designed and built two purpose-built cutting-edge biomass fuel production and drying facilities to produce fuel for all types of biomass systems- residential, commercial, and industrial Sam Launchbury said.

Additional sites for storage were secured, and specialist equipment such as screeners, chippers, and a fleet of haulage trucks with self-unloading walking floors were added.

– This area of the business still carries out site clearance contracts all over the UK, dealing with large quantities of woodchip and plays a crucial part, providing material for the boiler systems, which generates the heat and power, Sam Launchbury said.

CHP and pellet plant 1.0

At Stanleys Quarry, a stone's throw from the company's HQ in Westington Quarry, SDL Solutions have invested in its own biomass-fired combined heat and power (CHP) plant under the non-domestic RHI and FIT schemes – Stanleys Biomass. Consisting of a 4 MWth Kolbach thermal oil boiler and a 700 kW Turboden Organic Rankine Cycle (ORC) turbine, the CHP plant was commissioned on March 28, 2017.

The original plan was to use the heat for more woodchip drying and a Stela belt dryer was installed.

– The dry woodchip market became saturated between 2016 and 2017. Ironically, it was driven by the RHI that help stimulate the market demand in the first place. Suddenly, a lot of people saw the value of the RHI scheme and in order to ensure the heat was used eligibly, people decided to dry woodchip of any quality and move it into the woodchip marketplace. This action flooded the woodchip market with a lower quality and lower value product. We could see this scenario unfolding, so we started looking at the feasibility of producing pellets as an additional alternative in early 2016, Sam Launchbury explained.

There was some urgency in getting pellet production up and running on account of the new CHP plant at Stanleyss Quarry. Numerous pellet plants were visited to learn what works and what doesn't, and a quote from a reputable technology supplier on mainland Europe for a pellet plant at Stanleys Quarry was had.

– The problem was the delivery time. We needed to be up and running within a deadline. In the meantime, a discussion was held with a UK company which supposedly had experience in wood pellet manufacturing and the equipment could be made available a lot sooner than the European counterparts. We reasoned that the learning curve would be compensated by the price tag difference, Sam Launchbury said.

Pellet plant 2.0

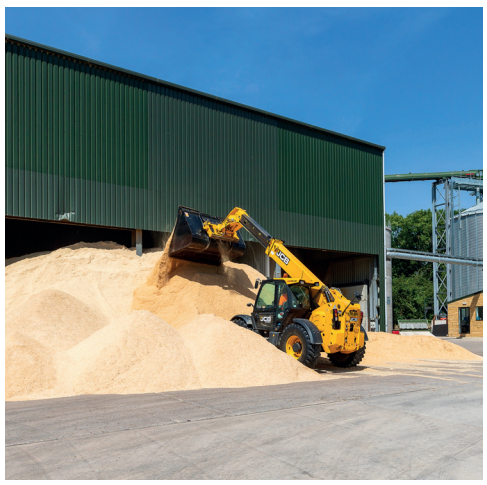
It proved a steep and expensive learning curve.

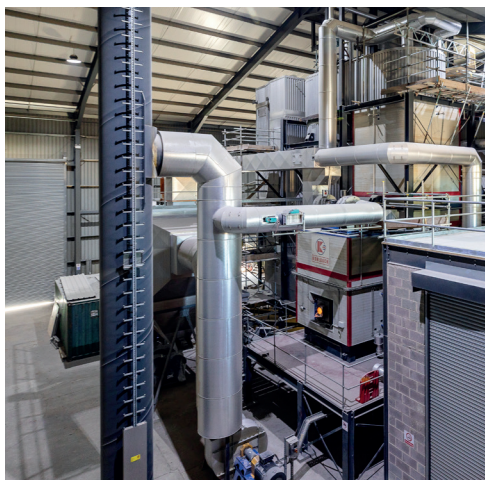
– We did manage to produce pellets of acceptable quality but not the volumes or consistency we needed while at the same time the market was full of low-cost imported volumes, Sam remarked.

Although the installation was made operational in early 2018, by 2019, after significant sweat- and capital expenditure, a decision had to be made – either call it a day for pellets or reinvest by starting over.

SDL Solutions decided on the latter.

– We learned an awful lot about wood pellet production, and I'd say we had a pretty good idea of how we wanted the plant to be set up. >>





(Above) All material, boiler fuel for the CHP plant, and pellet feedstock, is trucked to the site. A JCB 560-80 Telehandlar loading sawdust into the pellet plant receiving bunker. (Centre) Inside the spacious boiler house, the 4 MWth Kolbach boiler sits on raised frame. (Left) The split level pelleting line with the Stela belt dryer and CPM press on the upper level.

>> Crucially, we were now in a position to ask the right questions in discussions with technology providers, Sam Launchbury said.

These ideas and questions were subsequently posed to German machinery supplier Rudnick & Enners GmbH filled in the gaps in technical know-how, and so began a partnership.

Feedstock co-grinding

The feedstock consists of raw sawdust and fresh woodchips. The former is sourced from local sawmills while the latter comes from SDL Solutions' own operations. The sawdust and woodchips are fed into a single receiving bunker using a JCB 560-80 Telehandlar. Via a push-floor system, the material is fed into a Rudnick & Enners wet hammer mill.

– In this plant, sawdust and woodchips are not separated. Our wet hammer mill is able to grind a mix of materials without the need for an air aspiration system, said Sven Rudnick, Managing Director of Rudnick & Enner.

According to Sven, this set has two main advantages – reduced energy consumption and improved safety.

On exiting the wet hammer mill, the material drops onto the original Stela belt dryer after which it is conveyed into a new dry material silo. A dry hammer mill, a mixing container, a CPM 7932-5 pellet press equipped with a starch dosing unit, cooler, and a three-stage oscillating screen complete the pellet island.

Two-level facility

For better space utilization, energy efficiency, and easy access purposes, the pelleting island is on two levels. The dryer was already in situ on the upper level.

– Having worked with numerous civil engineering projects I've come to appreciate the benefits and value of easy access in and around processing equipment, said Sam Launchbury.

The pellet press is on the upper level with the cooler and oscillating screen directly under making use of gravity. The dry hammer mill is also located on the lower level. The screen separates both the fines and oversized pellets, the former is recirculated with the outgoing material from the dry hammer mill while the latter is correctly sized using a Rudnick & Enners mechanism.

Using a vertical conveyor, the cooled and screened pellets are transported up to the existing tubular belt conveyor for transport to the existing pellet silo or bagging unit. Rudnick & Enners also equipped the existing bulk loading station with an integrated pellet screen and a movable loading conveyor to minimize the dust content further.

Good collaboration

SDL Solutions' pellet 2.0 plant went into operation in the latter half of 2021 and the production is ENplus A1 certified.

– With our new pelleting plant, we are very well-positioned to serve the increasing interest for domestically produced pellets in the UK market. We're glad that we decided to modernize it, and I'm very pleased with the decision to work with Rudnick & Enners. Even with the added issues around Covid-19, and Brexit, together we managed to deliver an exceptional project in a short time frame. I'm looking forward to many more projects with Rudnick & Enners, said Sam Launchbury.

Earlier this year, Rudnick & Enners was commissioned to expand the pelleting plant in Stanleys Quarry with a second pelleting line and an additional belt dryer to increase drying capacity. The new pellet line will in principle be a mirror of the existing one.

– In light of Covid-related restrictions, Brexit, and temporary border closures between the EU and the UK, good collaboration was all the more important We are pleased with the way the machines work and for the order of a second line, ended Sven Rudnick.

Text & photos: Alan Sherrard
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