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Tower production launched in Quebec

Serial production at ENERCON’s recently installed precast tower construction facility in Matane, Quebec has successfully commenced. At the plant covering an area of more than 15,000 m², ENERCON is currently producing 83 m concrete towers for its E-82 wind turbines to be installed across the nation.

The first concrete tower was finished in November thanks to great efforts made by the plant’s employees during the production launch, says General Manager, Jacques Leblanc.

Currently, 71 employees are employed in production and administration in Matane and the company is looking for further plant employees, especially in the field of purchasing, planning and quality management.

- ENERCON installs world’s most powerful turbine

ENERCON recently installed what is currently the world’s most powerful wind turbine at their site in Magdeburg-Rothensee. The 7.5 Megawatt E-126 launched on 27th January is expected to yield an annual output of 14 million kWh.

“The E-126 is proof that wind turbines have now reached power plant capacities,” says ENERCON Managing Director, Dr. Aloys Wobben. The machine is expected to provide enough clean energy for up to 15,000 people in the Magdeburg area. This turbine, operated by ENERCON Windpark Rothensee GmbH & Co. KG, is a joint venture with minority shareholder (24%) SWM (Städtische Werke Magdeburg) who are now offering their customers locally produced green electricity.

In addition to this joint project, ENERCON, SWM and Magdeburger Hafen GmbH have signed an agreement aimed at turning Magdeburg’s inland harbour into a «Greenport». ENERCON’s recently installed state-of-the-art WEC will be providing the port facilities and river barges anchored there with green energy. A special hybrid shunter will also be employed to shift rolling stock on the harbour premises.

Furthermore, SWM is also planning on opening up a charging station for electric vehicles near Magdeburger Hafen GmbH.

- Rail connection to foundry in Georgsheil

Direct rail delivery service is now available to the GZO (Gusszentrum Osteifel) foundry. The permits for this stretch of rail, which allows all raw materials to be directly delivered to the plant by train, were granted in January.

In addition to transporting the raw materials, the track will also be used to transport the finished spheroidal graphite components, including the massive main carriers and stator shields, to the production sites in Aurich-Tannenhausen and Magdeburg. This addition to the track will not only save time, but will also help to reduce truck transport and relieve traffic congestion.

ENERCON’s new factory for concrete towers in Matane, Quebec.
Weser hydropower plant construction on schedule

Construction work at the «Weserkraftwerk Bremen» (WKB) near the Weser Wier is well on schedule. Once completed, this joint project between ENERCON and the Bremen public utility swb AG will be equally operated by the two companies. «According to current plans, the hydropower plant is expected to be launched in November,» says ENERCON project supervisor, Karl Ihmels.

The subterranean powerhouse, designed to house the two ENERCON-developed S-pipe turbines (each measuring 4.5 m ø) and the two ENERCON generators, has already been constructed and the enormous steel housing for the turbines already set in concrete. Currently, work is in progress on the inlet and outlet structure, the penstock, and fish ladder. The generators will be installed this summer along with the control and operating system and the turbines are scheduled to be installed towards autumn.

The two ENERCON-developed S-pipe turbines are powered by two generators from ENERCON’s serial production which were specially adapted to this project. With a rated power of 10 MW and an adequate water supply, the plant is expected to generate an annual output of 42 million kWh. This corresponds to the energy consumption of 17,000 Bremen households and will save up to 35,000 tons of CO₂ emissions.

Once installed, up to 220 m³ of water will be flowing through the inlet per second. The water rushing through the penstock directly strikes the four blades in each turbine shaft and makes them turn. The curved blades and speed of the ENERCON turbines are then automatically regulated according to the water intake and head. No gears separate the turbine and generator meaning that, compared to fixed speed generators, output is increased because of the direct drive system and more efficient use is made of the tide-induced water-level changes at the dam. This turbine concept is identical to ENERCON’s hydropower plant in Raguhn. However, the Weser hydropower plant in Bremen is five times larger than the showcase project in Saxony Anhalt.

With an average speed of 60 rpm, the turbine is categorized as a so-called low speed turbine – ideal for safeguarding fish for which particularly high restrictions were imposed. The slow speed and large gaps between the four turbine blades minimize the risk of injuring fish entering the water intake. The narrowly interspaced bars (2.5 cm between bars) on the trash racks in front of the intake prevent larger fish from entering altogether. A wide fish ladder, currently under construction, enables the fish to swim up or downstream thus eliminating the impact on eel and lamprey migration.

Currently the largest new hydropower construction project in Northern Germany, the WKB is being built at a site with a special historical interest. In 1911, a hydropower plant equipped with eleven upright Francis turbines and a rated power of 8 MW, was commissioned approximately 150 metres upstream from here. Equipped with eleven upright Francis turbines and a rated power of 8 MW, it provided Bremen households with power for more than seven decades. However, in 1987, it had to be decommissioned for flood protection reasons.
New ENERCON E-101

More efficiency in the 3-MW-class

With the E-101 wind turbine, ENERCON adds a highly efficient WEC in the 3-MW-class to its product portfolio. It has been specially designed for wind class IIA locations.

ENERCON will present its new E-101/3 MW wind turbine for the first time at the Wind flagship trade fair of this year’s HANNOVER MESSE (4th to 8th April). With this new wind energy converter, the manufacturer offers its customers a completely reinvented type in the 3-MW-class. It will be available as of mid-2011 and will complement the E-82 E3, another turbine type that also achieves a rated power of 3 megawatts (MW) and that is available for wind class I strong-wind locations. The E-101/3 MW has been designed for wind class IIA, meaning that it is suitable for regions with less intensive wind patterns. It is installed on steel or pre-cast concrete towers with 99 or 135 metres hub height.

ENERCON decided to introduce the E-101 because of the increased demand for WECs in this capacity range. “This machine rounds out our product portfolio in the 3-MW-class,
allowing us to better serve the inland wind market," says ENERCON Sales Director Stefan Lüt kemeyer. "The only way to achieve higher yields is by using rotor blades with larger rotor diameters," explains Arno Hildebrand, Engineering Manager at Wobben Research & Development (WRD), ENERCON’s R&D organisation, because increasing the yield is mainly about increasing the area of collection.

Yield increase of 50 percent

Compared to the E-82 E3, the rotor diameter of the E-101 has grown from 82 to 101 metres. A single E-101 GRP blade measures 48.6 metres in length; E-82 blades measure 38.8 metres. This increases the swept area by 50 percent, says Hildebrand. «The yield then increases 1.5 times as well.»

«With an increased rotor diameter of the rotor blade, the loads on a wind energy converter increase by a cube factor," explains the engineer. That means the entire mechanical structure needs to be more solid. The E-101/3 MW comes with a new, larger-sized main carrier made from spheroidal graphite cast iron for improved load distribution. And the number of yaw drives that move the machine house in the horizontal plane has been doubled to twelve.

No changes were made, however, to the tried-and-tested gearless direct drive for the re-developed ENERCON annular generator. The system has only few rotating components and enables an almost frictionless energy flow, low mechanical loads and a longer service life, and has proven its practical worth in more than 17,000 ENERCON wind energy converters. The industry believes that the future belongs to wind energy converters with less complexity, better reliability, and high profitability. Since ENERCON has already been building direct-drive wind turbines for 25 years and is putting the main focus on high availability in its entire product development, the Aurich-based manufacturer has a clear advantage in this new competition around gearless wind energy converters. Regarding the new E-101/3 MW, Germany’s market leader intends to capitalise on this advantage:
«All the experience ENERCON has gained in the past 25 years went into the development of the E-101,» says Arno Hildebrand.

The load-bearing components of the annular generator have been reinforced because the rotor area is now larger, causing greater forces to act upon the machine. The machine's rotational speed varies between 4 and 14.5 revolutions per minute. Because the design of the assembly is so compact, a water cooling system has been added to the standard air cooling system in order to ensure a long service life of the components. For the first time in a wind energy converter, the water cooling system is implemented as a system of two separate cooling circuits for stator and rotor. «The heat is dissipated right where it occurs and is conducted to the outside,» says Hildebrand about the advantage of this approach. The chiller element for the stator is seamlessly integrated into the casing at the rear of the nacelle.

Among the tried-and-tested system components adopted from the E-82 design are the single blade adjustment feature with independent pitch systems and dedicated emergency power supply units for each rotor blade, as well as the yawing system using yaw gears. Rectifiers, control cabinets, and filters are also the same as in the E-82. The power is fed into the grid via ENERCON inverters, and the SCADA system is used for remote monitoring. The design principle of the bearings as well as electrical systems, pitch system, yaw drive and slip ring unit were also adopted from the E-82, although modifications were necessary due to the larger size of the E-101. And by again eliminating problem-prone components such as hydraulic yaw brakes, welded main carriers, or bearings with a lot of wear and tear, the ENERCON engineers preclude numerous potential causes for downtime already in the design of the E-101/3 MW.

A new feature of the E-101 turbine is a load detection system in the rotor blades. It ensures that the E-101/3 MW automatically limits its power if loads become too great. This makes particular sense in locations where wind conditions are highly changeable. This additional safety system reduces wear and tear, improves the service life of the rotor blade, and prevents damage. Another technical highlight of the E-101/3 MW is an optional rotor blade heating system that makes it easier to de-ice rotor blades in the winter when ice build-up occurs. This helps reduce WEC downtimes due to icing and further increases WEC availability even during the cold season.

Today's customers demand efficient machines capable of returning high yields; another requirement for the E-101/3 MW was therefore to make this new ENERCON turbine type even easier to maintain. Even for indispensable maintenance work, WEC downtime should be kept to a minimum. The machine house design thus provides technicians on-site with quick and direct access to all important components. One example is the new spinner module: All electronic components of the rotor blade control system including emergency power supply units are no longer located on the generator rotor, as is the case with the E-82; instead, they have been moved to an additional carrier further inside the nacelle. An added advantage is that the module can be preassembled, which makes it easier to mount at the construction site when the wind turbine is installed. «With the new E-101 machine, ENERCON offers its customers a wind turbine which closes the gap between the E-82 and the E-126,» says ENERCON Sales Director Stefan Lütkemeyer.

Pre-assembling of E-101 machine house.
In 2008, the European Parliament passed a directive in which member states agreed to increase the share of renewables in the energy mix to 20% by 2020. At the time, the package was the European Commission’s attempt to harmonise promotional schemes for renewables. Member states were supposed to reach the target preferably by trading green certificates. In fact, green certificate trading was merely a proposal – at least according to statements made by Commission employees when queried by states with fixed feed-in tariffs. They certainly could easily have enforced a mandatory harmonised scheme. However, due to outraged protests from the renewable energies sector and backed by the German government and other member states, the Commission had to modify their proposal and cancel out all passages in the package which could have jeopardised successful fixed feed-in tariff schemes.

Impression of new direction

Just over two years later, the Commission, lead by the new German Energy Commissioner, Günther Oettinger, has made yet another attempt to establish a harmonised scheme for promoting renewable energies. Initial drafts for the closing communiqué of the EU Energy Summit (beginning of February) again contained proposals for a standardised Europe-wide promotional policy, supposedly to save millions of Euros. Resistance from the German government again spurred on by protests from the renewable energies industry and its organisations ultimately accounted for a closing communiqué without a harmonised scheme. Why Brussels still hasn’t realised that fixed feed-in tariffs have a definite advantage over various other green energy support schemes remains a secret.

The fact that harmonisation efforts were once again blown off, doesn’t mean that we should no longer be vigilant as far as other European energy issues are concerned. «The Commission’s initial announcement was not a bill, but it still gave a definite impression of the direction in which the newly appointed European Commission is moving in the energy sector,» explains Ruth Brand-Schock, ENERCON’s officer for Public Relations and Political Affairs. «Whereas in the last term of office EU documents were aiming at a rapid changeover to renewable energies, the current choice of vocabulary is rather alarming. ‹Renewables› has now suddenly been replaced by ‹low-carbon energy›. This definition also includes nuclear power and coal power plants with CO₂ capture – a major about-face.» The change in target has already had an effect on a number calculations stated in the Commission’s communiqué e.g. on calculations for future investment demands on ‹low-carbon› power supply. And to maintain Europe’s technological advance, they even went as far as to directly name specific projects such as the European thermonuclear reactor ITER. The constantly recurring issue of harmonisation is not the only challenge awaiting European politics in the next ten years.

Ruth Brand-Schock: «It is essential that we insist on driving forward the implementation of the Renewable Energy Directive in the member states.» Each country has already put forward their schemes. Now, we have to make sure that these schemes become law. 

Obviously the EC not only intends to harmonize the schemes. There are also fears it could redefine the term ‹renewable energy› into ‹low-carbon energy›.
When icing occurs, wind turbines are expected to automatically detect this and react accordingly. At most sites, the machines are usually shut down to prevent ice throw. However, this means a considerable loss in revenue for turbine owners. Consequently, to reduce these losses, ENERCON has designed a highly efficient de-icing system.

Validation completed – de-icing technology now available as a standard feature

ENERCON’s de-icing system improves the availability of WECs at sites affected by icing hazards. ENERCON is currently the only manufacturer having developed such a feature.

Once the technical development phase was completed, the system had to be validated in actual weather conditions. For this purpose, ENERCON chose two sites with the best-suited testing conditions. The first was at the Dragaliden wind farm situated approx. 125 km south of the North Pole and west of the small town of Piteå, Sweden. The second was the Krystofovy-Hamry wind farm, located in the middle of the Ore Mountains near the German-Czech border at approx. 850 m altitude. Both sites are known for their long hard winters with extreme icing.

Besides ENERCON engineers, an independent expert, Axel Albers, from the German Wind Guard, was also involved in the validation process. On the one hand, their aim was to prove
that the system detects icing and, by activating the rotor blade heating system, achieves a significant gain in energy output. On the other hand, it was intended to prove that the system can be relied on over a longer period in actual icing conditions. At each site, two adjacent E-82/2 MW turbines were equipped with the new rotor blade de-icing system. All four machines were equipped with extra temperature and humidity sensors and test measurements were taken over a five-month period between October 2009 and April 2010. To determine and compare the efficiency of the de-icing system, ENERCON set the machines up so that when ice detection launched the blade heating system in one turbine, the other wind turbine shut down when ice was detected. The latter is the standard configuration for WECs without a blade de-icing system designed to prevent or reduce ice throw or excessive operational loads caused by ice build-up.

Ice and snow crystals on rotor blades melt

Ice detection works by comparing WEC-specific power curves for the respective site. Ice build-up on the rotor blades changes the WEC's aerodynamic profile meaning that with the extra weight on the rotor blades power output drops and the curve no longer corresponds to the optimised profile for maximum yield. Thus the power curve registered by SCADA lies below the «normal» curve for the respective WEC. The wind turbine’s control system then activates the rotor blade heating system which warms the rotor blades up to temperatures well above 4°C. Any ice and snow crystals on the blades immediately turn to water and drip off to the ground.

The de-icing system works on the following principle. Hot air produced by an electric fan heater located in the root of the rotor blade is propelled over the ribs inside the rotor blade and along the front of the blade all the way to the tip. From there, the air circulates back via the centre rib in the direction of the fan creating a continuous flow of air. Inside the blade, the hot air heats the laminate to above 0°C temperatures causing the ice and snow to melt.

For an E-82 and E-70, the energy consumption of the rotor blade heating system is roughly 85 kW. In the case of rated wind, the WEC would still produce approx. 96% energy even in heating mode. A WEC without rotor blade heating by contrast would not generate any power and cause considerable yield losses. As wind speeds in winter are generally higher, it would be particularly annoying to lose income due to ice build-up.

ENERCON performed the abovementioned tests in order to obtain reference values for the additional energy generated in the icy season. During the five-month testing period, the WEC with the activated de-icing system continued producing energy while the second WEC shut down during ice build-up. At the Dragaliden site, the energy gain added up to 870,000 kWh after deducting the energy consumed by the heating system. Compared to the yield from a turbine without a blade heating system, this is a gain of approx. 48% for the test period. At the Krystofovy-Hamry site, the energy gain came to approx. 650,000 kWh – an additional 54% yield compared to a turbine without blade heating. «In the abovementioned cases, approx. ten times more energy was produced than the amount invested in a de-icing system. An all-round profitable investment,» reports Christoph Hilling, Head of Department at ENERCON Site Assessment. But one must not forget that the actual energy yield is still highly dependent on the local meteorological conditions, as the frequency of icing conditions and the wind speed both play a decisive role.
ENERCON is currently in the process of upgrading its customer Service Info Portal (SIP). This upgraded version is intended to simplify the visualization of relevant WEC data and services and will allow wind farm owners faster access via Internet. Customers can easily monitor their wind turbines at any time and get a current overview of their machines.

The reason for this upgrade, explains Hermann Bohlen, Head of ENERCON Service Customer Relations Department, is that customer demands have become higher. They expect an info portal to offer more functionality. However, the current SIP was at its limit. Large wind farm operators, for instance, now want service work to be transmitted in real time, explains SIP Project Director, Ernst Loesing. They also want to be able to see the current status of individual turbines without any time delays. The former SIP system could only transmit retrospective data two to three times a week.

For the new SIP, ENERCON modified its internal data structures and set up a new IT infrastructure which allows real time transmission of status messages at any time. «It works similar to a tracking tool for parcel delivery,» Loesing explains.

ENERCON customers receive a password and PIN to the upgraded SIP and can then log in via the Internet. To guarantee data transmission security, the information is encoded. And ENERCON’s data centre is also secured with redundant data...
communication systems and firewall-protected against intruders. «This way we can assure our customers 24/7 availability of their data,» says Hermann Bohlen.

Another feature is that customers will be able to call up monthly, weekly or daily overviews of their turbines. They can also see Service statistics immediately, e.g. what maintenance or repair work was done on their machine and what the exact reason for the error message was. And last but not least, they can get an analysis of their machines’ actual availability, which is what interests them the most. Later on, ENERCON intends to add further functions to the SIP program.

At the Hanover Fair (4th to 8th April), ENERCON presenting a Beta version of the upgraded SIP to demonstrate its functionalities. Customers are expected to receive access by mid 2011.
First Project with RWE npower in the UK

Construction of An Suidhe wind farm completed

ENERCON mounted altogether 23 wind turbines with a total installed power of 19.3 MW at the site. Both manufacturer and customer call the project a success.

The An Suidhe wind farm built by ENERCON is now on the grid in Western Scotland. The site located about eighty kilometres north-west of Glasgow is the first project realised by ENERCON in cooperation with RWE npower in the UK. The official inauguration will presumably take place this summer.

9 ENERCON E-44 turbines and 14 ENERCON E-48 turbines with a total installed power of 19.3 megawatts (MW) are forecast to yield around 50 million kilowatt-hours in an average wind year.

According to RWE npower renewables, this is enough to cover the average energy requirements of 10,400 households.

ENERCON project manager Thorsten Groenmeyer praises the excellent cooperation with the customer, saying that the entire project was handled in an exemplary manner. Mark Godding, project manager with RWE npower renewables for this construction project, is also happy with how the project went. «An Suidhe was our first UK wind farm to be constructed using ENERCON turbines and proved to be a positive learning process for both parties. Overall the project was a highly successful one with no major Health and Safety incidents and early commercial generation. We look forward to working with ENERCON again in upcoming projects.»
In midyear 2009 RWE npower renewables began to build access roads and foundations. ENERCON installed the first wind energy converters in April of 2010. In addition to the wind turbines, the Aurich-based manufacturer supplied the SCADA system as well as a special, very fast wind farm control system in order to comply with UK grid codes. This so-called NGET Grid Code is considered among the most demanding in the world. In 2006, the ENERCON wind energy converters at Boyndie Airfield, another Scottish project, were the first to comply with all requirements set forth in the NGET Grid Code.

Developing the construction site presented particular challenges. It is located in a hilly area partly covered by forest. This meant that long roads and several bridges had to be built. «The preparation work required from our customer was really quite demanding,» says Thorsten Groenmeyer. On the other hand, the site has the advantage of being far away from any residential areas. In addition, high wind speeds prevail at the wind farm site.

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**INFO**

**An Suidhe wind farm**

Glasgow

**ENERCON**

Fairs

**Hannover Messe 2011**
(Hanover/Germany)
Trade show Lineup Wind
4. - 8. April 2011
www.hannovermesse.de

**PWEA 2011**
(Warsaw/Poland)
Conference & exhibition - Wind energy market in Poland
www.pwea.pl

**EE & RES 2011**
(Sofia/Bulgaria)
Energy efficiency and renewable energy for South-East Europe
www.vlaexpo.com

**All Energy 2011**
(Aberdeen/Scotland)
Renewable energy exhibition & conference
www.all-energy.co.uk

**ICCI 2011**
(Istanbul/Turkey)
International fair for energy and the environment
15. - 17. June 2011
www.icci.com.tr

**NEREC 2011**
(Oslo/Norway)
North European renewable energy convention
12. - 14. September 2011
www.messe.no

**EOLICA 2011**
(Rome/Italy)
International wind energy fair
www.eolicaexpo.com

**Wind Powerexpo 2011**
(Saragossa/Spain)
8th International exhibition on wind energy
27. - 29. September 2011
www.feriazaragoza.de
Plan du Pal/France

First repowering wind farm is on the grid

Five ENERCON E-70/2.3 MW substitute seven older Vergnet-WECs. At the site in Portel the company Aérowatt installed its first wind turbines in 1983.

Surrounded by vast vineyards in the middle of a typical garigue landscape in the Languedoc-Roussillon region, France’s first repowering wind farm was inaugurated by the village of Portel des Corbières last July. Here, seven Vergnet wind turbines were replaced with five ENERCON E-70/2.3 MW machines. The site is the first repowering wind farm using ENERCON wind turbines.

Plan du Pal is a significant location in the history of France’s wind energy. This is where Aérowatt installed its first wind turbines in 1983. At the time, ten UM 70 series turbines with a rated power of 10 kW were installed. Excellent yield from the machines confirmed the exceptional potential for wind energy at the site where the Tramontane and Mistral meet.

Initiated by the AFME, CNEEL and Ratier Figeac, Lastours was selected for a state research project. Besides the Aérowatt machines, a Darrieus Rotor turbine was installed. Unfortunately though, the project had to be also abandoned in 1989 due to lack of funds. Later seven 200 kW machines were installed.

In 2006, the developers, JMB Energie and Aérowatt, decided to repower the installed WECs and applied for a building permit which was granted in 2008. In 2009, the existing Villesèque wind farm was then expanded to include the new Plan du Pal wind farm with five E-70/2.3 MW turbines with 57 meters hub height. This farm is expected to produce an annual yield of 32,000 MWh at a mean wind speed of 8.5 m/s.
History of wind power in France

The establishment of the national wind energy research centre, CNEEL, in Trébeurden near Lannion in 1983, marked EDF’s desire to expand their research activities in the field of renewable energies. The first wind farm was installed in 1979 on Ushant Island off the coast of Brittany, but unfortunately was destroyed by the effects of corrosion after only one year of operation. The CNEEL’s main objective was to determine the reason for the failure and improve the resistance and productivity of wind turbines. However due to lack of financial support, the centre’s research wind turbines were abandoned in 1989.

The subject of wind energy was then again revived at the initiative of the Minister of the Environment, Brice Lalonde, who provided the necessary impetus to build a wind turbine in Dunkirk in 1991 as well as a wind farm in Port-la-Nouvelle in 1992. In February 1996, EDF launched the «Eole 2005» project with the intention of installing several hundred WECs (total rated power: 250-500 MW) along the French coast and certain Overseas Departments by the year 2005. Twenty projects were supported by EDF. The company committed itself to paying approx. 35 centimes/kWh of energy produced at these sites – financial aid representing a third of the investment (150 million francs). However, since 500 MW is only half the production capacity of a nuclear power plant, wind energy continued to be of secondary importance in France.

In 2002, France increased its investments in the wind energy sector in order to meet the European Union’s target. By the year 2010, 21% of the energy generated had to be derived from renewable energy sources. At that time it was only 15 percent.
INTERNATIONAL

ENERCON business operation in Italy

Upwind for single WECs due to altered framework

In other regions sales of single turbines have slowed down. Thanks to legal modifications and a special framework agreement, this business in Italy has taken an upward turn.

In the past years, ENERCON’s sales of single turbines in Germany have slowed down in favour of larger clusters of turbines. This is mainly due to the fact that many communities prefer to concentrate the machines in one area rather than cluttering up the landscape. Consequently, the majority of ENERCON turbines produced for inland sites are sold to wind farm operators. Foreign sales are following a similar trend. However, owing to legal modifications as well as a special framework agreement with ENERCON’s longstanding customer, Fortore Energia, sales of individual machines in Italy have recently taken an upward turn.

Normally, obtaining construction permits for wind turbines is a long drawn-out procedure in Italy, says Mirco Torquati, ENERCON sales representative for Italy. Applications to obtain an «autorizzazone unica 387» are processed by several government agencies. Without this document wind turbines cannot be installed. However in 2008, the region of Apulia, one of Southern Italy’s windiest regions, decided to shorten the process for smaller renewable energy units with a rated power of up to 1 MW. Because of the smaller size, the respective wind or solar power units can be authorised through a shorter simplified process – the so-called D.I.A. (Dichiarazione Inizio Attività). This procedure states that when a company applying for a building permit provides all the necessary documents and does not receive a reply from the authorities within a 30-day period, they can begin construction immediately.

These new legal conditions have triggered a huge demand for individual turbines, says Thomas Barkmann, ENERCON’s regional sales manager for Italy. Since then, more than 200 requests have been submitted to ENERCON Sales. Because of the simplified procedure, many customers – often small investors – have become interested in the wind energy market, explains Mirco Torquati. Some farmers, for example, are interested in installing a wind turbine on their property to secure a second income. Others are landowners who are interested in selling or leasing some of their property for wind energy.

Because a lot of the interested parties have no prior experience in the wind energy sector, Sales often has to thoroughly check these requests, says Mirco Torquati. Nevertheless, each individual project is treated in the same manner as larger wind farms.

Important sales sector

«This has become an important sales sector for us,» explains Thomas Barkmann. Of course, one of the main contributing factors was the agreement ENERCON concluded for the single turbine business with their long-term customer, Fortore Energia. As a result, Fortore Energia will be setting up individual E-53 or E-48 machines (depending on the site) for 22 different customers. For service and maintenance, each customer will be signing an ENERCON Partner Konzept (EPK) contract to ensure a long-term lifespan and high availability. According to Thomas Barkmann, 10 out of the 22 individual machines have already been installed. Including the framework agreement ENERCON Sales in Italy has already concluded contracts for 49 individual turbines with rated power totalling 39.3 MW.

The Castelluccio dei Sauri plant, E-53 with 73 m.
The first phase of the Soma Wind Farm project in Turkey has now been completed with the last wind turbines being commissioned at the end of December 2010. Eighty-eight E-44/900 KW machines are now generating green energy at the site in the province of Manisa approx. 500 km southwest of Istanbul – a total installed capacity of 79.2 MW.

Out of the 88 machines, 50 were installed on steel towers and 38 atop of precast concrete towers. The Soma project is being erected for Soma Enerji Üretin A.S. based in Istanbul and is the largest project ENERCON has realized in Turkey so far.

The second construction phase is scheduled to start up this year, says Arif Günyar, ENERCON Sales representative for Turkey. For «Soma 2», ENERCON will be installing 30 x E-70 machines on 64 and 55 metre steel towers and one E-44 – totalling 60.9 MW rated power. «Once the project has been completed, the aggregate rated power will add up to 140.1 MW,» says Günyar. Later on, the 123 km² wind farm is expected to generate more than 478 million kW/h per annum.

Because the site is subject to extreme winter conditions and ice is expected to build up on the rotor blades, some machines from the first construction phase were equipped with the ENERCON de-icing system. «We are pleased with this as they have been generating excellent results,» says Günyar.