

Solar energy plan Middelkerke

Solar Energy plan

With this plan, the municipality of Middelkerke wants to accelerate the expansion of solar energy on the territory of Middelkerke. The municipality of Middelkerke divided the solar road map in two big parts. The first part is the municipality itself, the second part are the companies. The municipality also mentions the households but this is not worked out in detail. At least, the other plans related to energy efficiency and renewable energy will be short discussed.

Municipality

There are still a few buildings where solar panels can be an option.

Middelkerke invested 1,4 million euro in making roofs ready to carry solar panels and for installing the solar panels for 21 buildings.

Table 1: Overview of the buildings with solar panels in 2020

Building	Address	Number of panels	kWp	Avoid CO2-emissions per Year	Consumption (kWh)
Monument Town hall Middelkerke	Spermaliestraat 1	122	30,5	28	140114
School de zandloper	Onderwijsstraat 5	142	35,5	11	54051
Community centre De branding	Populierenlaan 35	250	115	52	259890
Library Middelkerke	Populierenlaan 16	108	26,46	16	79646
Police office	Spermaliestraat 21	108	27	19	92582
Technical services building	Molenstraat 43 of 45	432	108	3	16672

Technical services office	Molenstraat 45	164	41	7	34878
Technical services warehouse	Molenstraat 45	216	54	3	14724
Social services educational centre	Sluisvaartstraat 17	183	45,75	19	97242
School Lombardsijde	Schoolstraat 37	112	2* 13;72	5	26700
Football canteen Lombardsijde	Bamburgstraat 115	56		*	*
Sports hall Lombardsijde	Baronstraat 25	380	95	13	67230
Community centre De zwerver Leffinge	Dorpstraat 95	48	11,76	8	39610
School leffinge	Bonte Pierstraat 22	114	29,64	5	24088
Sports hall and warehouse Leffinge	Vaartdijk-zuid 38	375	97,5	18	90000
School Slijpertje + Ter zelte	Odiel Spruyttestraat 1	48	12	3	12881
Hall Scora	Lekestraat 1	26	6,37	1	3327
Hall Mannekenvere	Brugsesteenweg 85	26	6,37	0	1193
Social services administrative centre	Sluisvaartstaat 17	263		116	579689
Community centre Calidris	Strandlaan 1	96	14,84+10,6	5	24330
Total	/	3069	/	331 ton	1 658 847

*No data

To measure the CO2 reduction, we use the “ Provincial Monitoring Tool Klimaat 2020”. They use the conversion factor 0,2 ton reduction per MWH production.

Table 2: Overview of the buildings where solar panels are not possible

Building	Address	Reason
School Lombardsijde (part of the big roof)	Schoolstraat 37	Stability
Museum Kusthistories	Jozef Casselaan 1	Too much shadow
Museum Les Zéphyr	Henri Jasparlaan 173	Heritage
Youth center	Westendelaan 38	Stability
Fire brigade buildings	Klein Kasteelstraat 3	Building is hired by someone else
Social services elderly home	Sluisvaartstraat 19	No place on the roof because of an architectural element.
Community centre Ter Zelte	Odiel Spruyttestraat 5	Stability
Swimming pool	Populierenlaan 20	Exploitation by Farys (the drinking water production company). Plans to build a new swimming pool

Table 3: Overview of buildings with potential

Building	Address	Potential/ threats
New swimming pool	Duinenweg 435	470 panels – 160 Wp – 166250 kWh – 33 ton
Marquise (canopy) market	Marktplein z/n	150 panels - 54 Wp – 46000 kWh – 9 ton
School Westende (new building)	Henri Jasparlaan 29	75 panels – 20,6 Wp – 20000 kWh – 4 ton
Green maintenance services warehouse	Molenstraat 45	Stability?
IBO Leffinge	Dorpsstraat 64	

Companies

The environmental service kept a survey through the newsletter and asked the companies why they have or didn't have solar panels. Because of the low responses, we cannot use the results.

A lot of companies have the same problem as the people who live in a big building. The managing committee or an agency manages the maintenance of the building.

The document doesn't treat the small companies all around the territory of Middelkerke. Only the industry zone will be handled. The most important zone of Middelkerke is the business park Oostendelaan. Three groups of clustered businesses can be identified: 2 existing clusters and 1 in development. The existing clusters are a shopping centre (Yellow) and the business park De Kalkaert (orange). The cluster in development is a mixed regional business park (blue).

Figure 1: Overview business parks Middelkerke (2020)



The business park Oostendelaan (shopping center)

Middelkerke has a shopping centre with a lot of big buildings having a high potential for solar PV. For the moment, only one company out of 4 has solar panels.

Figure2: shopping centre Middelkerke (north, Oostendelaan, Rietstraat and Biezenstraat)), the local business park (right) and the mixed regional park (south) (source: <https://www.geopunt.be/>).



Business park 'De Kalkaert'

'De Kalkaert' is a business park for smaller companies (maximum 5.000 m²). This business park is carbon neutral for electricity use. Companies have the choice how to reach this carbon neutrality: they can place solar panels or buy renewable energy. WVI (West-Flanders Intermunicipal Association), who developed the business park infrastructure and manages the business park, verifies if the companies fulfil this obligation by checking their yearly final energy bills.

For the moment, one company has installed solar panels. This park is a relative new business park, with new buildings. A possible reason for this low number is that the investment in solar panels is not the most important investment for companies when they are building their premises. Investment in solar panels can become interesting after a few years or when the building is amortised.

Mixed regional business park 'The Middelpolder' in development

In between the 'Rietstraat' and the 'Kalkaert', a mixed regional business park (called 'De Middelpolder') is in development. Most of the company plots in this park are larger than 5.000 m². The business park also foresees place for a business centre wherein several companies can be located. The business park developer WVI investigates together with the municipal board how renewable energy production through solar PV can be enhanced on this business park. This could be done through the selling conditions for plots. Companies who buy a plot to put their premises on, have to comply with several conditions. The possibility to make renewable energy one of these conditions is subject of concertation between the municipality and WVI. Also this business park has to be carbon neutral as described for 'De Kalkaert'.

Solar farm

On ground specified for community facilities, there is a solar farm in Lombardsijde about 7700 panels. This provides energy for 400 households. In 2007 the company Electrawinds build the biggest solar farm in that time in the Benelux.

Building a solar farm on agricultural ground in Middelkerke is only possible if it's compatible with the agricultural purposes (for example canopy).

Households

Already for a few years, the environmental service of the municipality of Middelkerke supports the group purchase of solar panels. A lot of home owners have installed solar panels on their roofs.

In Middelkerke, a town with a lot of buildings for second residents, and specifically apartment blocks, there is still a lot of potential. The European project "SURE2050" is helping to accelerate the solar energy on the roofs of the agencies of managing committees.

The building is not property of one person/family (apartments). It's the property of more persons and it's more difficult to get a decision to install solar panels on the roof. That's a big reason why Middelkerke scores bad on the utilization rate for solar potential (source: <https://www.energiesparen.be/zonnekaart>). The average in Flanders is 4,4% and Middelkerke has a score of 2,9%. Other municipalities along the coast score bad as well.

Place	Municipality	Potential Power (MW)	Corrected placed power (MW)*	Utilization rate (%)*	Number of installations	Number/1000 inhabitants	Power/ inhabitant (W)
264	Middelkerke	199,07	5,68	2,9%	858	44,72	364,10
	Average in Flanders	56.967,69	2518,79	4,4%	327590	50,27	395,96

*Rating till the end of 2018

Energy community

The Flemish Government is currently in the process of translating European legislation about energy communities into Flemish legislation. An energy community is a legal entity in which different actors can participate to enhance local energy production/consumption, storage and to align production and consumption with each other.

The legislation will foresee a specific energy community for apartment buildings to make it easier to produce and consume within the same building (perhaps also including the parking space of the apartment block for e.g. charging points for electric cars. The latter depends upon how the definition of apartment block is described.

It is expected that this new legislation will enhance the installation of solar installations on existing apartment buildings, if the roofs allow it.

For new built apartment blocks, the Flemish legislation foresees that 10% of the energy production needs to come from renewable sources.

Other plans related to energy efficiency and renewable energy

Renovation project Leffinge

This project foresees a free energy scan for home owners. Home owners can request the visit of an energy expert. This independent expert from WVI makes a thermographic scan of the house and listens to the renovation plans of the home owner for the next years. He keeps in mind the budget, the timing. The home owner gets an objective and feasible plan of action.

Heat pumps

The new swimming pool will be heated by heat pumps.

Solar atlas

By visiting the website www.zonnekaart.be, a home owner can see whether his/her roof is fit to put solar panels on. This atlas only takes into account the orientation of the roof. It doesn't tell anything about stability, asbestos, ...

Free energy scan for target groups

People who are (at the edge of being) in poverty, live in most cases in badly insulated houses and have a very low income. Through the free energy scan by 'energiesnoeiers', they get advice on how to use less energy.

Energyhouse

WVI gives advice about energy matters for households and foresees cheap loans for energy saving investments for people with low income. Middelkerke has an agreement about it with WVI.

E-mobility

By the end of 2020 the municipality of Middelkerke will have bought or rent 2 or 3 electric cars to be used by the staff and citizens of Middelkerke when the cars are not in use by the staff. The electricity comes from the solar panels on the roof of the market place. With reservation of approval by the province of West-Flanders for this project. The province didn't approved the project, but the community is working on a new proposal.

