KlimaExpo.NRW
Engine for Progress

The State Government of
North Rhine-Westphalia

Enhancing Communities – Wuppertal Arrenberg Climate Community

Re-birth of a green neighbourhood

Award-Winning Project

Wuppertal Arrenberg Climate Community

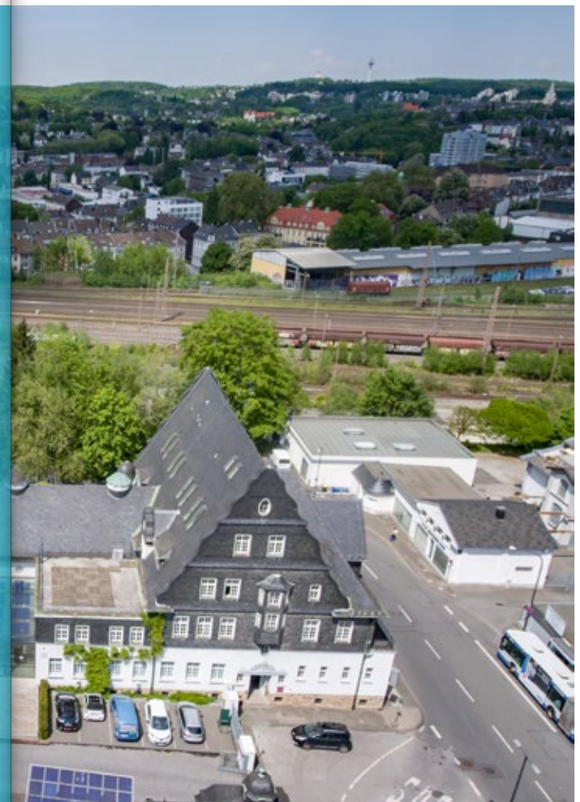
In the Arrenberg neighbourhood of Wuppertal, an entire district has set out to become carbon-neutral by 2030. VillaMedia has set the standard. Today, this former slaughterhouse is home to more than fifteen companies in the media and energy sectors, a large events venue and "Innovationzentrum NRW". The building complex, which covers around 4,000 m², already generates more energy than it consumes – and uses this in its own electric vehicles and innovative power storage system, etc.

120 members
are already part of the "Aufbruch am Arrenberg" association.

70 %
is the level of self-sufficiency already achieved by VillaMedia. Overall, VillaMedia generates around 10% more energy than it uses.

80 volunteers
are stakeholders in the Climate Community Wuppertal Arrenberg.

6 electric vehicles
run on green electricity produced by "Energienetzwerk VillaMedia".



"Aufbruch am Arrenberg" – a new start for the district

Arrenberg, with more than 5,500 inhabitants, is a city district of Wuppertal that was in a downward social spiral for decades. The "Aufbruch am Arrenberg" association has set itself the task of revitalising the neighbourhood and turning it into a flagship district for climate protection, thus freeing it of its negative image. A very special bottom-up project.

The model for the Wuppertal Arrenberg Climate Community is VillaMedia – an events and media venue which aims to achieve very high sustainability standards. In 2012, the site was modernised to be more energy-efficient and today it is 70 per cent energy self-sufficient. This has been made possible by an innovative mix of modern technologies. Since then, this desire to turn over a new leaf has spread far beyond VillaMedia. The city district of Arrenberg aims to develop a blueprint to show how communities can live, work and be climate-neutral within existing urban structures. The main focus is on energy, mobility and food. If it works, the whole of Arrenberg should be carbon-neutral by 2030.

"VillaMedia shows that it is possible to power buildings in a climate-friendly manner and organise transport so that it is sustainable. The technologies required for this are available and it can be done. You simply have to want it and do it. Because everyone is part of the climate-change problem – but everyone can be part of the solution, too."

Jörg Heynkes,
Managing Director of VillaMedia

A big plus for the district

VillaMedia consists of four listed villas belonging to the former slaughterhouse. Since 2012, these old, historic buildings have been transformed into an "EnergyPlus" complex. The on-site self-sufficient energy supply is based on its own local heat and power network. Seven solar power installations on the roofs, a CHP unit and a fuel cell supply the Villa Media's energy network with the heat and electricity it needs.

The site's own transport requirements are met by a total of six electric cars. The charging station at VillaMedia also powers electric cars belonging to local residents and visitors to the complex. In this way, VillaMedia's own vehicles act as mobile power reservoirs, a feature which is being tested as part of an intelligent, networked energy system. The vehicles are charged when there is an electricity surplus in the grid; when the demand for power is high, they feed electricity into the network. According to the operator's calculations, the total investment in renewable energies will have paid for itself within about seven years.

A model for innovative power storage

At VillaMedia, they do not want to feed their own surplus energy into the public power grid, than rather make efficient use of it themselves. In the context of the "LokSmart II" research project funded by the Federal Ministry for Economic Affairs and Energy, the stakeholders are, therefore, investing in two innovative forms of power storage: a stationary power storage unit, holding 100 kilowatt-hours, and a mobile power storage unit, holding 26 kilowatt-hours, which is provided by an e-transporter and used for the catering service. Use of power-to-heat and power-to-cool allows the load to be transferred and additional energy stored.

The project aims to develop systems, interfaces and electronic controls that will make optimal load storage and load management possible in the future, with the lowest possible storage losses. This is particularly important when it comes to consumption at the events venue, which experiences high energy peaks. This way, VillaMedia intends to further increase its energy efficiency and become 90 per cent energy self-sufficient in the medium term.

Neighbourhood already has a good atmosphere

More than sixty voluntary stakeholders in the "Aufbruch am Arrenberg" association are currently organising a variety of projects: food sharing, restaurant day and urban farming all provide an opportunity for local people to get involved. Within the context of the "Energy-rich Arrenberg" and "Mobile Arrenberg" projects, an ambitious pilot scheme is also being developed. In a complex of 25 buildings with approximately 200 residents and local companies, a communal, climate-neutral energy supply and mobility concept is being developed for the first time. It is scheduled to go into operation in 2018. Subject to an evaluation in 2019, this pilot model will be expanded throughout Arrenberg from 2020 to 2030 in order to make the entire neighbourhood fully carbon-neutral. This district of Wuppertal shall serve as a role model for other cities in NRW. A competition is being held in conjunction with the state government to select "100 Climate Communities for NRW" that will follow the blueprint from 2019.

Arrenberg is out of the woods

Wuppertal Arrenberg Climate Community shows how economic and social change can also be achieved by switching to climate-friendly and resource-efficient technologies, alongside a high level of community engagement. The area is now experiencing a renaissance. After 40 years in a downward spiral, more and more newcomers are choosing Arrenberg as their new home. The involvement of the community has drawn the attention of politicians and researchers to the neighbourhood, which is serving as a "real-world laboratory" for science and research and is considered to be a pioneering district for the whole region and beyond. Thanks to its many active members, the "Aufbruch am Arrenberg" association is firmly rooted in the neighbourhood. It comes down to the fact that ever more Arrenbergers are thinking about their own consumption and behaviour patterns because everyone wants to play a role in making "their" district an example for others in NRW, and thus make a contribution to the fight against climate change.

"The association is creating a network that brings stakeholders together and creates synergies. One of the aims is to roll out the energy-saving measures implemented at VillaMedia to the entire district. Here, climate protection and quality of life go hand in hand with other projects, such as urban gardening and food sharing."

Hans-Georg Walter, Chairman of the association, "Aufbruch am Arrenberg e. V."

Expo Fortschrittsmotor
Klimaschutz GmbH
Munscheidstraße 14
45886 Gelsenkirchen
Germany
+49 209-408599-0
post@klimaexpo.nrw
www.klimaexpo.nrw/en

Aufbruch am Arrenberg e.V.
Simonsstraße 49
42117 Wuppertal
Germany
+49 202-39311635
info@aufbruch-am-arrenberg.de
www.aufbruch-am-arrenberg.de

KLIMAQUARTIER
ARRENBERG

On behalf of the state government, KlimaExpo.NRW presents North Rhine-Westphalia's technological, economic and scientific potential for climate protection and adaptation to the impacts of climate change. The initiative is both a showcase and a laboratory of ideas for the state of NRW. Every year, KlimaExpo.NRW presents awards to three projects in four thematic fields, which illustrate climate protection as an engine for progress particularly well.

Rethinking Energy

New ideas are constantly emerging from business, research, municipalities and civil society on how we can fundamentally change our energy systems to be climate-friendly – and how the transformation of the energy system can succeed.

Saving Resources

NRW aims to lower resource consumption and reduce emissions – through new materials, innovative technologies, greater productivity and the promotion of sustainable consumption patterns.

Enhancing Communities

Metropolitan regions shaped by industry, urban districts and rural areas make NRW the ideal showplace for climate-friendly redevelopment of urban infrastructure, reorganising the relationships between cities and rural areas and implementing measures for adapting to climate change.

Shaping Mobility

Passenger and freight transport should be efficient and climate-friendly. NRW is addressing this challenge with the development of alternative drives and fuels, and by testing and establishing sustainable mobility concepts.