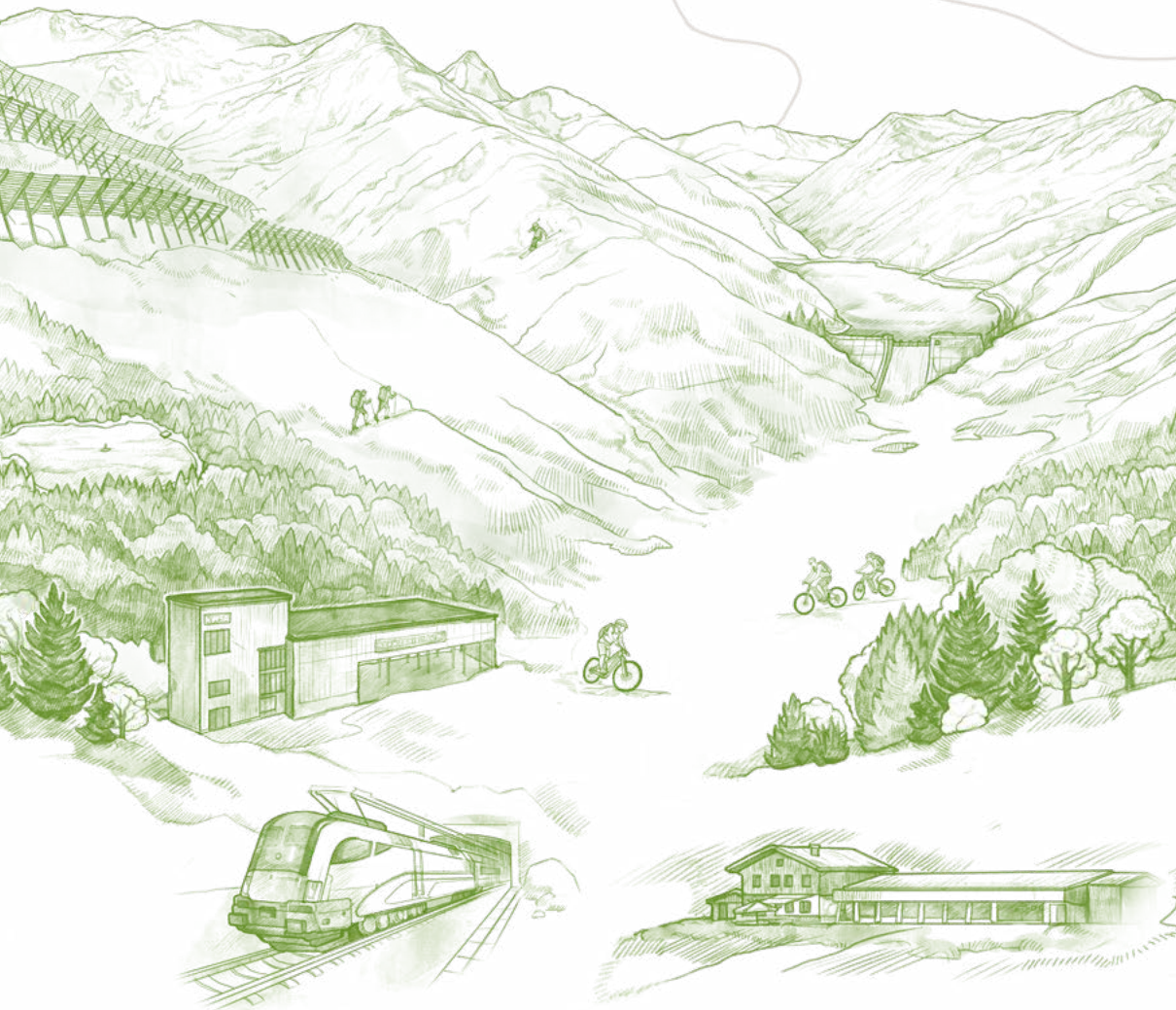


We're getting climate-friendly!

KLAR! Arlberg Stanzertal



St. Anton
am Arlberg



Pettnau
am Arlberg



Flirsch



Strengen



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Photo: © KLAR! Arlberg Stanzertal, Eichhorn



Sustainable growth is an expression of healthy development. That's why we are proud that our communities of St. Anton am Arlberg, Pettneu am Arlberg, Flirsch, Strengen are also steadily growing. It is no coincidence that we have been able to develop from small mountain villages into a popular and modern destination. We are the gateway to the Arlberg and a valley that stands for quality of life and diversity beyond its borders. It has always been fundamentally important to us to develop responsibly and strive for energy autonomy as much as possible. For example, electricity generation

from local hydropower, CO₂-neutral heating with renewable energies as well as a sophisticated mobility concept for locals, guests and employees are cornerstones upon which we can build for sustainable development. Together, we in the Stanzertal Valley have decided to take the first important step towards a sustainable future and become a model region for climate change adaptation. Climate change adaptation is not the responsibility of an individual for others; it evolves from the decision to act together, for the common interest. Subsequently, it serves the majority and, above all, future generations.

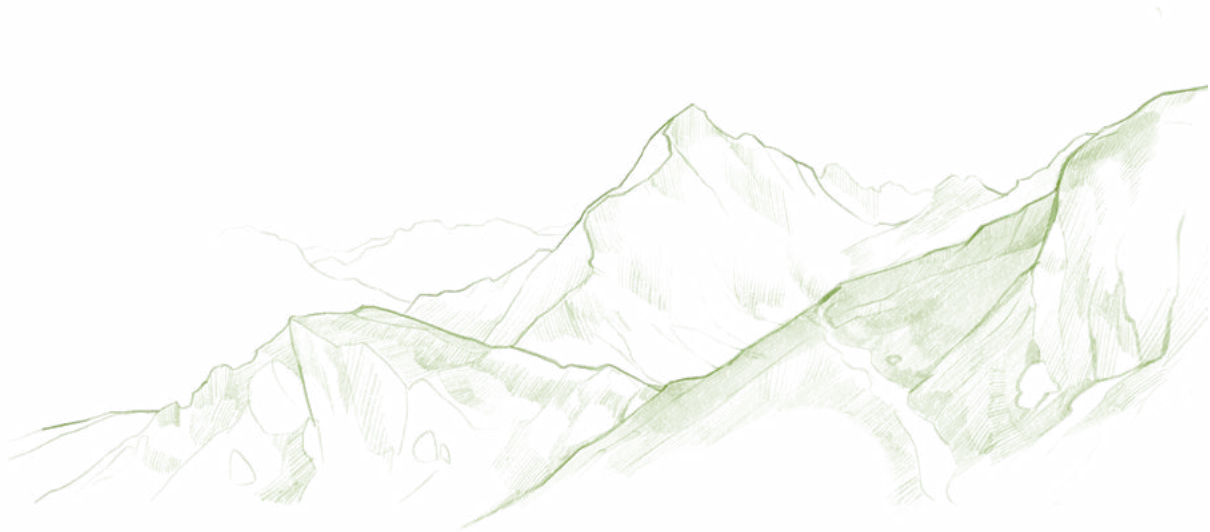
Looking ahead to a positive future. Your KLAR! Arlberg Stanzertal

The mayors of the Stanzertal Valley and
the St. Anton am Arlberg Tourism Association

KLAR!

Climate change exists

All Austrian studies indicate that Austria's regions and municipalities will be strongly affected by the impacts of climate change, and this impact will become even stronger in the future.



Extreme temperatures, heavy precipitation or drought are causing increasing problems and posing new challenges. In addition to extreme weather events, gradual changes can be observed at the local level, such as the **premature onset of vegetation, the**

receding of glaciers or the **arrival of new species** – caused by the rise in average temperatures. To best meet these climate change challenges, as well as to take advantage of opportunities as they arise, forward-looking action is needed.

Climate change in the Alps

The Alpine region has warmed twice as much as the global average since the late 19th century, making the Alps particularly affected by climate change. The consequences of this are massive. Mountain regions react with above-average sensitivity to climatic changes. Melting glaciers, the loss of permafrost, the rise of the snowline, an increase in dry periods, heavy precipitation events and

their consequences, such as mudslides and mudflows, as well as changes in biodiversity are only a small selection of the consequences.

Climate change is already quite evident here in the Stanzertal Valley region as well, for example through mudflows and floods, the loss of our protective forest or the steady increase in forest damage caused by bark beetles.

KLAR! Prepared for the climate crisis

DID YOU KNOW?

Adaptation aims to proactively respond to past and future climate change (e.g. increase in hot days) and implement measures to avoid damages and make use of opportunities that arise.



Why KLAR!?

For this reason, the municipalities of the Stanzertal Valley – St. Anton am Arlberg, Pettnau am Arlberg, Flirsch and Strengen have joined forces with the tourism association to form a model region for climate change adaptation in spring 2021. This is an Austria-wide funding programme of the Climate and Energy Fund in cooperation with the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (BMK).

The aim of KLAR! Arlberg Stanzertal is to jointly address climate change, implement coordinated adaptation measures and take advantage of opportunities. “

In addition to the necessary climate protection efforts, it is therefore necessary for regions to react to the changing climate with

measures in their areas of responsibility, such as zoning, water supply or in the health, aid and rescue services, etc. Municipalities, tourism associations, and institutions are increasingly required to consider the long-term impacts of climate change in current decisions and investments in order to avoid costly mistakes with negative consequences. KLAR! enables Austria's regions to adapt to the impacts of climate change at an early stage, based on science and oriented

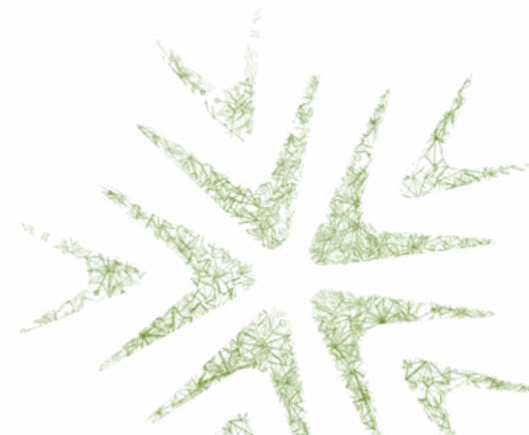
towards the future, in order to reduce the potential for damage and also to maintain the excellent quality of life in the regions for the long term.

Successful together

For successful adaptation to climate change, it is important to address the issue together. That is why a dialogue with the local community has been initiated. The goal must be to ensure that measures regarding the consequences of climate change are smart, effective and economically sensible.

A cooperation with experts from all fields, such as the technical schools, the Chamber of Agriculture, the District Forestry Inspectorate, the Climate Alliance, tourism experts or the Tyrol Energy Agency is therefore absolutely necessary.

Photo: © TVB St. Anton am Arlberg – Patrick Bätz



The KLAR! Programme

Climate change affects Austria's regions. Adaptation to the impacts of climate change is necessary to maintain a high quality of life in the long term.

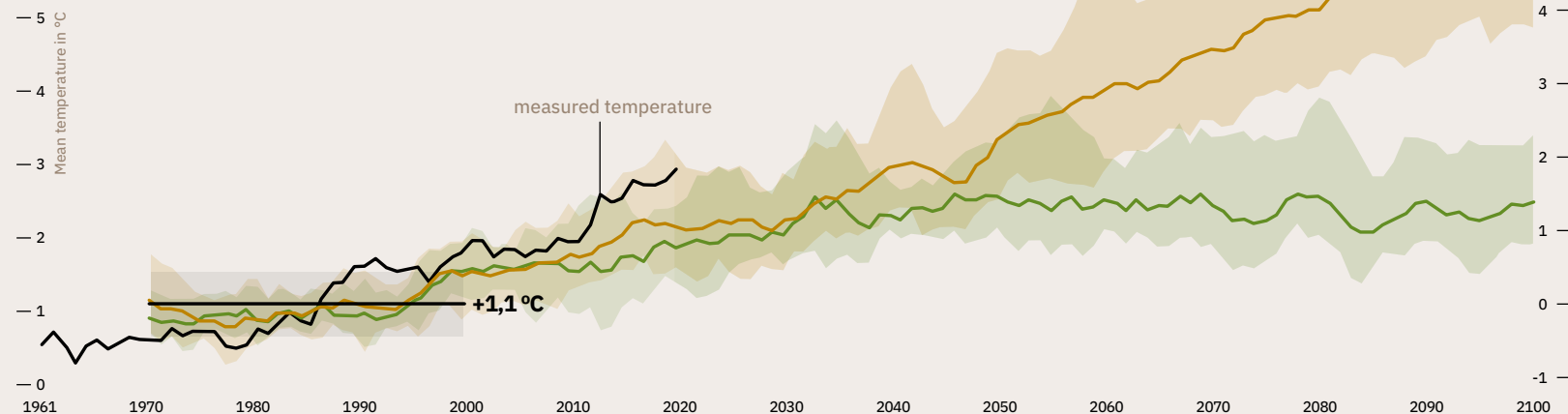
With the funding programme "Climate Change Adaptation Model Regions" (Klimawandel-Anpassungsmodellregionen – KLAR!), the Climate and Energy Fund supports regions in adapting to the challenges of climate change from an early stage. This is how damage can be reduced and opportunities exploited. The programme is coordinated with ongoing activities at federal and provincial level and contributes to the Austrian Strategy for Adaptation to Climate Change.

More information at: www.klimafonds.gv.at and klar-anpassungsregionen.at.

Working with the KLAR! regions has been a truly successful concept that has also gained international recognition. We help regions to prepare for the challenges of the climate crisis and to become role models for other regions in Austria and in the world.

“ MAG. BERND VOGL, MANAGING DIRECTOR
CLIMATE AND ENERGY FUND

The line diagram shows the possible development of the annual mean temperature until the end of the 21st century. Without efforts in climate protection, we will find ourselves on the orange path, which will mean a further temperature increase of about 5 °C for the region. Through ambitious climate protection, we can follow the green path that limits further warming to around 1.5 °C in the long term. The mean annual temperature in the KLAR! The Arlberg Stanzertal Valley region was 1.1 °C between 1971 and 2000. The year 2020, at 3.0 °C, was already 1.9 °C above this long-term mean value.



The climate of our planet is changing, something that is also increasingly being felt in the KLAR! Region Arlberg Stanzertal Valley. New risks are emerging within our region, which is affected by a cold temperate climate with a short growing season, increased frost frequency, cool summer nights and high levels of precipitation.

Temperature is the parameter best represented by climate models for climate change, and its course does not differ significantly in the individual scenarios up to 2050. The reason

for this is that the climate reacts sluggishly and even major efforts in climate protection only become apparent in the data 20 to 30 years later. Hence, significant differences only occur from about 2050 and onwards.

The parameter precipitation is generally subject to high fluctuations and is not as well reproduced by climate models as temperature. The parameter of precipitation is generally subject to high variability and is not represented as accurately by climate models as temperature.

Source p. 8–11: Climate and Energy Fund
> Content elaboration, graphics, tables: Central Institute for Meteorology and Geodynamics, Environmental Agency Vienna
> Data: SPARTACUS grid dataset of Geosphere Austria. STARC-impact climate model simulations based on EURO-CORDEX climate model simulations from ÖKS15. Two "Representative Concentration Pathways" (RCP, see IPCC-AR5: www.ipcc.ch/report/ar5/syr) are shown. data.ccca.ac.at/group/oks15data.ccca.ac.at/group/star-impact

Future climate change in our region

In the following, some specially selected indicators are presented using 30-year averages for two selected scenarios. Individual years can deviate greatly from the mean value, so

the possible range of change is also given. This illustration shows average values but no extremes!

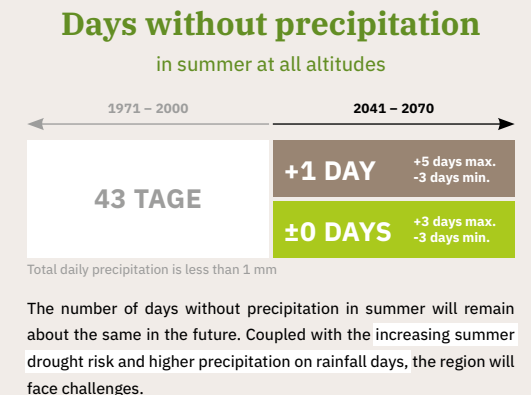
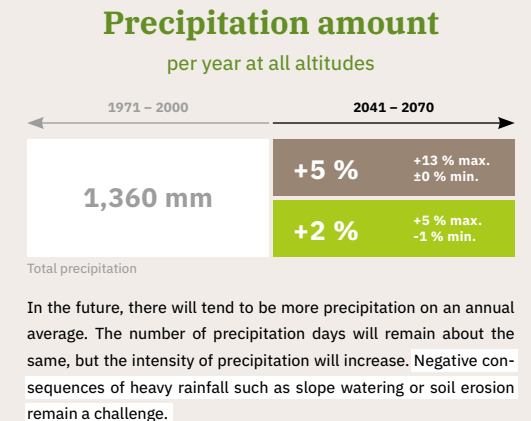
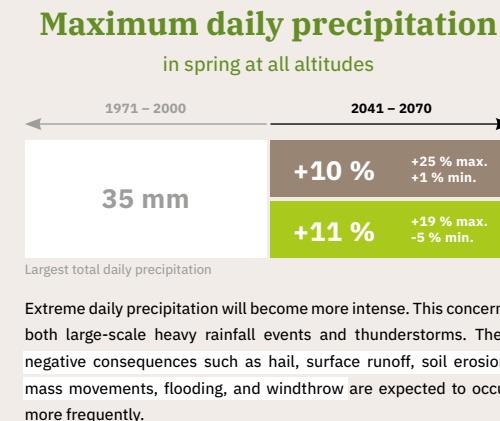
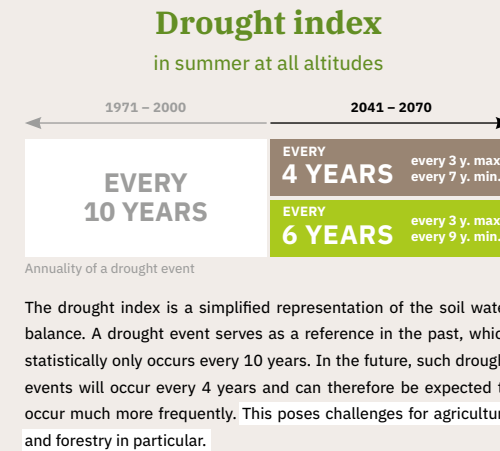
Scenarios

Climate model simulations to illustrate possible future paths. The scenarios presented here are:

- **No climate protection**
“Worst-case” scenario (RCP 8.5)
- **Ambitious climate protection**
“Paris Goal” (RCP 2.6)
- ! **Statistically significant change**
(significant climatic change, but does not necessarily have to lead to challenges in the region)

Expert assessment

- Indicators whose change in the region leads to challenges in the region.
- Indicators whose changes can provide opportunities in the region.

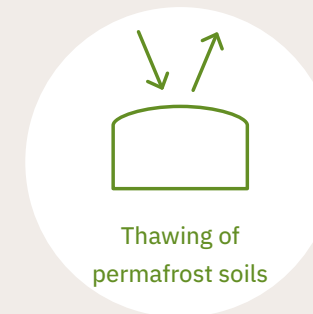
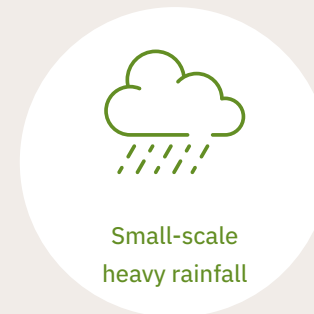
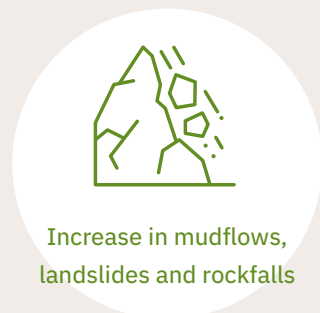
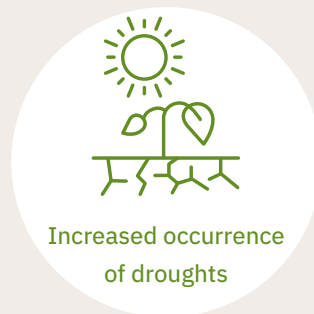
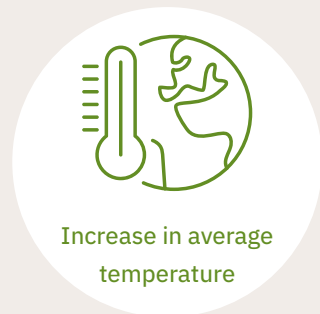


What does it mean to adapt to climate change?

Adaptation refers to all the measures that help our society and environment to cope well with changing conditions.

The aim is, among other things, to avoid potential negative effects from the outset and to take advantage of opportunities. For example, milder and cooler temperatures can unleash new potential for summer tourism (summer

retreats). **For our region, climate change brings the following challenges, among others, which we should prepare for with adaptation measures:**



Climate protection in our region

What are we already doing about climate protection?

Climate protection is understood to mean all measures that contribute to the reduction of global warming and thereby protect the climate from further irreversible changes. Specifically, it involves the reduction of greenhouse gas emissions and thus effective energy, mobility and economic management.

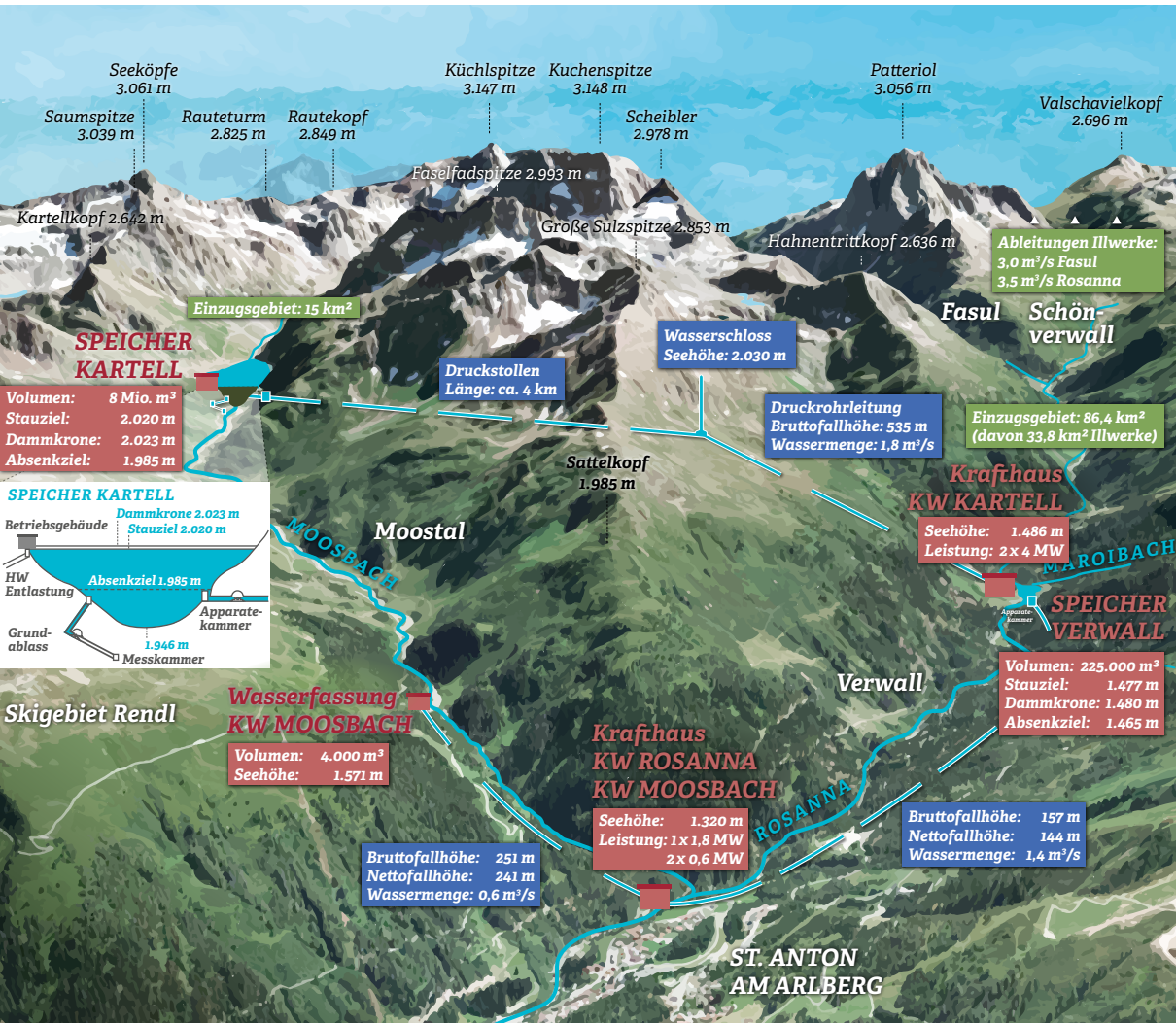
In this respect, the KLAR! Region Arlberg Stanzertal Valley can already call itself a pioneer in Tyrol!

Renewable energy

100% electricity from our own hydropower

St. Anton am Arlberg is self-sufficient in energy with environmentally friendly electricity generation from 100% domestic hydropower. The Energie- und Wirtschaftsbetriebe der

Gemeinde St. Anton GmbH (Energy and Economic Operations of the Municipality of St. Anton) or "EWA" for short, is responsible for energy generation and distribution.



The Stanzertal Valley is a pioneer in ENERGY & HEAT SUPPLY.

Moosbach Power Plant



Photos: © EWA St. Anton am Arlberg, Klimafonds/Krobath

Built in 1921, rebuilt in 1966 and in recent years upgraded electrically to the state of the art.

- Facts:**
- » **Daily storage:** 2,000 m³
 - » **Moosbach Powerhouse**
Expansion capacity: 2x0.6 MW
Annual energy output: 6.5 GWh, of which 2 GWh in winter

Rosanna/Verwall Power



In 1985, to meet the energy and power demand, the power plant on the Rosanna River was constructed in addition to the existing Moosbach Power Plant. The associated idyllic reservoir in the Verwall is also a popular destination for excursions today. After commissioning, the annual demand in the community could be met completely.

- Facts:**
- » **Storage:** 400,000 m³
 - » **Reservoir water level:** 1,479.50 m
 - » **31 m high dam, 4.5 km pipeline**
 - » **Rosanna Powerhouse**
Expansion capacity: 1.85 MW
Annual working capacity: 15 GWh, of which 6GWh in winter

Site map: © EWE St. Anton am Arlberg

Kartell Power Plant



An important step was to ensure an independent power supply. In 2005, the Kartell Power Plant was expanded and put into operation with the Kartell Lake. This reservoir, harmoniously integrated into nature and also a popular destination for excursions, contains around eight million cubic metres of water and supplies around 33 million kilowatt hours of electricity annually. The entire storage volume of the Kartell Lake is used again by the existing Rosanna Power Plant. The entire municipality of St. Anton am Arlberg has thus been energy self-sufficient since 2006 thanks to its environmentally friendly electricity generation from 100% domestic hydropower.

Facts:

- » **Storage** 8 mil. m³
- » **Reservoir water level:** 2,020 m a.s.l.
- » 60 m highdam, 3.95 km **pressure tunnel**, 950 m **pressure pipeline**
- » **Kartell Powerhouse:**
Expansion capacity: 2x4.5 MW
Annual energy output: 33.5 GWh, of which 10 GWh in winter

Klausbach, Flirsch Small Hydropower Plant



The Klausbach small hydropower plant in Flirsch is 100% owned by the municipality of Flirsch. Around 5,550 kWh are generated, 100% of which is fed into the grid.

In addition, the municipality is planning another small hydropower plant on the Griesbach, which is to have a capacity of about 700,000 kWh.

DID YOU KNOW?

In addition to numerous wild stream control structures, hydropower plants constitute an important component for flood protection, safeguarding against major debris flows and sediment transport in the tributaries of the Rosanna River.

Photos: © EWA St. Anton am Arlberg, M. Gasser-Mark

Photos: © Klimafonds/Krobath, Gemeinde Pettneu

Stanzertal Valley



The Stanzertal Valley hydroelectric power plant is located in Strengen. The shareholders include all the municipalities of the Stanzertal Valley (Flirsch, Pettneu, St. Anton am Arlberg, Strengen) as well as Energie- und Wirtschaftsbetriebe der Gemeinde St. Anton GmbH, which is wholly owned by the municipality of St. Anton am Arlberg. The hydroelectric power plant uses part of the Rosanna's discharge to generate electricity in an environmentally friendly way.

Facts:

- » **Firm capacity** 13.5 MW
- » **WKW Stanzertal Valley Powerhouse:**
Annual energy output: 52 GWh (corresponds to the supply of more than 14,000 households), thereof 13 GWh in winter

* Drinking water power plants are particularly resource-efficient. These plants make it possible to draw dual benefit from one and the same raw material source. On the one hand, the drinking water plant supplies the community with the fresh water it needs every day. On the other hand, a drinking water power plant can be installed and a considerable amount of energy can be generated with a manageable financial and construction effort."

Mühlbach, Pettneu Power Plant



As early as 1930, clever minds in Pettneu constructed a small hydropower plant. Since 1965, the operator has been the municipality, which has built its own power grid. Electricity from the Mühlbach Power Station has been and continues to be used to supply the municipal office, the rectory, the parish church, the primary school, the multi-purpose building and the fire brigade hall. The annual production is 1.1 GWh (gigawatt hours), which corresponds to the demand of 275 households. The people of Pettneu continue to use a quarter of the electricity to supply the municipal buildings.

The municipality of Pettneu will build its own **drinking water power plant*** in 2023, which will make use of the pressure of existing spring water supply lines to generate energy. Together with the agricultural communities of Pettneu and Schnann, the association "Energy Community of the Municipality of Pettneu" was founded. These measures will enable all metering points of the municipality and agricultural communities to be seamlessly supplied with locally generated electricity starting from next year.

Local heating supply without fossil fuels

The local heating systems in St. Anton am Arlberg and St. Christoph am Arlberg are the best examples of how communities can prepare themselves for the future in a sustainable and independent manner.

Local heating St. Anton am Arlberg

Supply security is ensured both through fully automated wood chip combustion with state-of-the-art exhaust gas purification technology and by using locally sourced wood chips from within a radius of up to 50 km owned by the municipality and the region. This makes it possible to speak, without exaggeration, about an optimised raw material/production cycle and local value creation.

With the first expansion stage in 2020, the new local heating plant in St. Anton am Arlberg will now supply all public buildings, as well as the Arlberg WellCom including the swimming pool, and another 80 businesses and households in the municipality.

Facts:

- » **Generation** approx. 16.5 GWh annually
- » **Savings:** 1.8 mil. litres of **heating oil**
- » **Savings:** of approx. 4,800 tonnes of **CO₂**



The advantages are as follows:

- » **Safe and secure:** No open flame operation in the building, no fuel storage, high security of supply, redundant systems in the heating plant, independence compared to petroleum.
- » **Economical and convenient:** No maintenance

and repairs, economical operation and good control capability, simple operation, price stability, remote monitoring of the system, troubleshooting by NWSA.

- » **Low space requirement**
- » **Clean:** Reduction of carbon dioxide, sulphur,

sulphur dioxide and dust emissions, no odour disturbance in the building, no noise emissions. Further expansion stages in the districts of Nasserein and Obersdorf are planned for 2024. The goal is to heat the entire municipal area of St. Anton am Arlberg without fossil fuels.



St. Christoph Biomass Heating Plant

The St. Christoph Biomass Heating Plant was built in 2015 on the initiative of the local tourist industry. The motivation at the time was to take another step towards more sustainable tourism. In the coming year, the heating plant will also be equipped with a photovoltaic system.

Did you know?

General facts about biomass heating plants

- » **Replacement** of fossil fuels
- » **Reduction** of particulate matter emissions
- » **High efficiency** of central heating technology
- » **Clean operation**
- » **Positive side effect:** air quality increases

In addition to the renewable energy source aspect, local heating also has an impact on air

quality. In order to compare air quality in the village before and after the heating plant's operation, six nitrogen dioxide passive samplers were installed in the village of St. Anton am Arlberg. The measuring points were selected in consultation with the authorities and the province of Tyrol. The benefits are not only for the customer but also for the entire town. This will also relieve traffic in the town centre through reduced fuel deliveries and an improvement in air quality.

Up to now: (since operation 2020 / NWSA the following data have been measured)

- » approx. 35 Mil kWh of **sold thermal energy**
- » **CO2 savings:** approx. 8,000 t
- » **Oil savings:** approx. 2.8 mil. litres

Photo: © Biomasseheizwerk St. Christoph

Power generation through photovoltaic systems

In 2023, the municipality of Pettneu will install two photovoltaic systems on public buildings with a total capacity of 80 kW peak. The electricity generated will be used for self-consumption, and any surplus will be made available to the intended energy community.

QUESTION:
How many PV systems can you count in each municipality of the Stanzertal Valley?

In St. Anton, too, a large PV system is being erected on a public building. With an approximate capacity of 77 kW peak, the municipality feeds electricity into the public grid.

In the course of a major conversion and extension of the municipality of Strengen, the entire building with primary school and kindergarten was equipped with efficient heat pump technology.

- » **Heating oil savings:** 13,000 t/year
- » **CO2 savings:** 1.5 t/year

Many residents of the Stanzertal Valley already produce electricity with their own PV systems. As a local expert, EWA can make a valuable contribution in this area with planning, construction and support with subsidies.



Reduction of energy consumption

Strengen will convert all public street lighting to LED in 2023, helping to reduce energy consumption by 33,000 kWh.

Flirsch will also have converted all public street lighting to LED by June 2023.

Photo: © Klimafonds/Krobatth

A pioneer in climate-friendly mobility

According to the United Nations Environment Programme (UNEP), about 75% of all CO₂ emissions attributed to tourism come from transport, and mainly from travel to and from the destination.

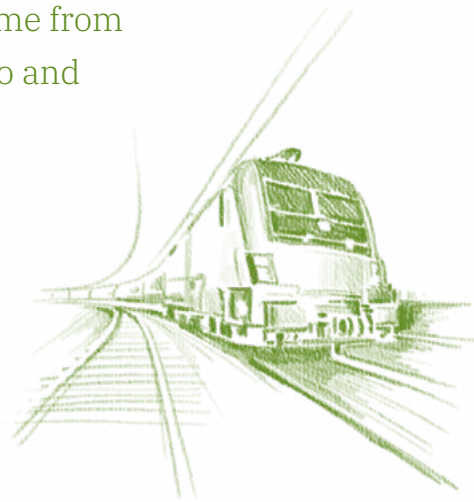


Photo: © Klimafonds/Krobath



Climate-friendly arrival and departure by train

As a world-famous holiday resort, the region of St. Anton am Arlberg is considered an attractive destination especially for guests for whom a sustainable journey is important. The mountain village is a Railjet station and has the highest ICE train station in Austria. Numerous direct connections are offered each day from Vienna, Zurich and this year even Hamburg. Hotels and accommodation can be reached quickly from the centrally located train station. This can greatly reduce the carbon footprint of the entire holiday.

In long-distance transport within Europe, rail in particular offers good opportunities to reach the holiday destination in a relatively climate-friendly way and in a reasonable amount of time. Greenhouse gas emissions per traveller per kilometre are extremely low, especially compared to air travel and cars.

Travelling by train is thus more environmentally friendly and more relaxed than travelling by car and relieves the high volume of traffic in the mountain regions.

DID YOU KNOW?

In the course of the relocation of the railway station in St. Anton am Arlberg in 2001, a widening of the Rosanna River near Vadiesen was also made possible. This represents an important contribution to the conservation of water ecosystems.

Tip:

A stroll to the Untergand Landscape Park near St. Jakob am Arlberg. The path leads past a mother tree island to a wonderful recreational area with natural shading and watercourses.

Local climate-friendly mobility

The public bus network

CO2 emissions also arise from the individual mobility needs of guests and locals. That is why the entire Stanzertal Valley region offers a sophisticated public transport network all year round.

In combination with consistent parking management and an appealing public transportation offering, traffic alleviation measures were implemented, leading to a significant improvement in the quality of life throughout the entire Stanzertal Valley region, as well as a substantial contribution to the environment.

In addition to the regular bus service from Landeck to St. Anton am Arlberg and from Landeck to Strengen (Berg), there are also six bus lines in St. Anton am Arlberg and three booster lines in Stanzertal Valley in winter. In addition, there are night buses in St. Anton am Arlberg and in the Stanzertal Valley. During peak hours, the bus lines run every 10 or 15 minutes.



- » **In winter, 27 buses are used daily to transport approximately 18,000 to 20,000 people.**
- » **The annual mileage is approx. 1,000,000 km.**

Photo: © Klimafonds/Kroboth



Guests and locals in our region can of course use this offer free of charge.

Something new has been tested in St. Anton am Arlberg since 2021. In summer, between mid-July and the end of August, an **electric bus was on the road as a centre shuttle**. With the test phase, we were again able to gather a lot of experience that is essential for the **further development of public e-mobility**.

Public e-car sharing St. Anton am Arlberg

In a unique cooperation project between Raiffeisen Tirol and branch municipalities in the Landeck district, **e-car sharing vehicles** will be installed at nine locations in 2023, enabling emission-free, cost-effective and flexible mobility as a supplement to public transport.

In St. Anton am Arlberg, a **Renault Zoe will be available in front of the train station** for all interested users from autumn 2023. The vehicle is operated by the Tyrolean provider floMOBIL (Stadtwerke Wörgl), the costs are split 50/50 between Raiffeisen and the municipality.

St. Anton am Arlberg has thereby created a flexible offer that also enables the population to abstain from using their own vehicle.

On the road with the bike

The St. Anton am Arlberg Tourism Association and the municipalities in the Stanzertal Valley region consider it important to realise a **cycle path through the entire Stanzertal Valley**.

After the final expansion stage, this will connect St. Anton am Arlberg with Landeck and follow the course of the Rosanna River. This means that the whole family can discover the valley by e-bike or bicycle without much effort, making it an attractive alternative to the car.

To date, the section from St. Anton am Arlberg to Flirsch has been completed, the further extension to Landeck will be completed in the next few years.

Essentially, the entire region can also be explored with a (mountain) bike. Numerous tours for leisurely to adventurous cyclists can be explored in the Stanzertal Valley.

TIP:
Protect the environment,
stay fit and
cycle.



Photos: © Klimafonds/Kroboth, TVB St. Anton am Arlberg – Patrick Bätz

E-Scooters in St. Anton am Arlberg

In 2022, the tourism association and the municipality of St. Anton am Arlberg once again launched a pilot project to relieve traffic congestion within the village and to set another example in the direction of climate-neutral traffic. Around **40 e-scooters were available** to guests and locals. Due to its success in 2022, the project will continue in the summer of 2023.

With the e-scooters, local residents and guests of our town are offered a **“green mobility alternative”**, providing relief for the environment and the community.

Nature conservation



Mösli Landscape Conservation Area

The Stanzertal Valley, or more precisely the **municipality of Flirsch**, has a special landscape conservation area. The Mösli raised bog was placed under protection by the province of Tyrol due to its unique landscape with **high-quality wetland stands**, as well as its special scenic beauty.

It covers an **area of 207.5 ha** extends down to the moraine groups below the Riffler Glacier. The landscape conservation area has such a high value mainly because its entire vegetation conditions are visible. The entire development, from ice age glaciations to the initial

retreats with pioneer vegetation of lichens and mosses, including the appearance of dwarf shrubs, all the way to raised bogs and closed forest formations, is present in the area.



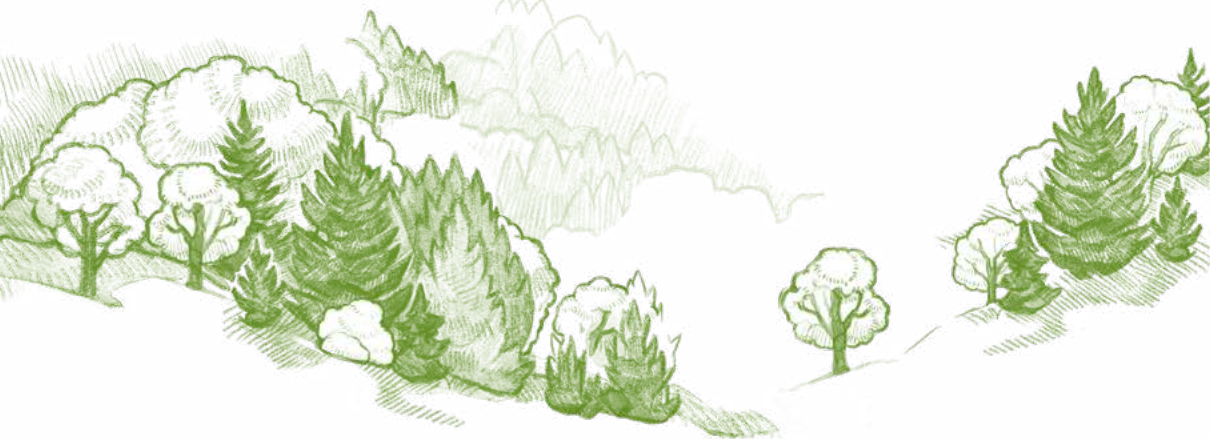
Illustration: shutterstock.com

KLAR! Arlberg Stanzertal Measures

What are we doing specifically as a climate change adaptation model region?

We are aware that climate change is also affecting our valley and that we need to prepare for the future. That is why we are one of the first regions in Tyrol to commit to specific measures. Adaptation aims to respond

to past and future climate changes (e.g. increase in storms) in a forward-looking manner and to take measures to avoid damage and to take advantage of opportunities as they arise.



The climate-friendly forest

Without the protective forest, our valley would not be habitable. The forest acts as a safety net against falling stones, boulders and avalanches. Like a sponge, the forest floor absorbs the rainwater and slowly releases it again. In this way, the protective forest prevents landslides, mudslides, rockfalls and avalanches.

The climate is changing and with it our forest. The rising temperatures in summer and the drought of recent years are increasingly affecting the forest and forcing us to make the forest climate-friendly, especially in areas close to the valley.



Opportunities and challenges for our forest:

(Excerpt from Tyrolean Forest Strategy 2020)

- » **Shift in the competitive strength** of individual tree species
- » **More timber growth** in the higher altitudes
- » Increased occurrence of **pests**
- » **More drought stress** in spruce and pine
- » Replacement of spruce and pine with **fir and hardwood**
- » Good conditions for the **re-growth of fir, oak, and other hardwoods**

Photos: © Klimafonds/Krobath



Specific measures for a climate-friendly forest in the Stanzertal Valley

Rejuvenation through mother tree islands

In the entire district of Landeck as well as in the Stanzertal Valley, so-called mother tree islands were created by the Landeck District Forestry Inspectorate. (approx. 2–3 islands/community). These are **afforestation areas** (approx. 600 m²) that are fenced off so that the newly planted site-appropriate trees are protected from browsing by wild animals, allowing for **natural forest regeneration** to occur. Mainly **sustainable tree species** such as fir, oak, beech and other hardwoods are planted.



It is evident that stands maintained through **thicket management and thinning** grow up more stably. The aim here is to cultivate not just one tree species, as in the past, but **various climate-resistant tree species** with different root systems/characteristics in the final stand.

Tree sponsorship by school children – many helping hands



The goal of this measure is to create more awareness among children for the topic of climate-smart forests and to actively support forest conversion in the region. To this end, climate-friendly young trees (deciduous trees, firs) are planted by primary school pupils in cooperation with the local forest wardens and cared for over several years.

Natural hazard check for the municipality of Flirsch

In this measure, the aim is to identify, in cooperation with the Climate Alliance Tyrol, how the municipality of Flirsch is impacted with regard to natural hazards and which developments are conceivable based on the predicted scenarios (e.g. increasing number of heat days, drinking water problems, increased heavy rainfall events with mudslides, etc.).

Photos: © TVB St. Anton am Arlberg – Yannick Rumlir

Photos: © TVB St. Anton am Arlberg – Alexandra Genevein, Alpe Rendl – Josef Walter

Climate-friendly Alpine pasture and agriculture

Controlled pasture management

Alpine pastures are an essential part of agriculture in the Stanzertal Valley. They provide the summer forage base for numerous livestock and enable labour relief during the summer work peaks on home farms. However, Alpine pasture management is also linked to the production of quality products and services for tourism, to the protective function against natural hazards and to ecological factors.

with regard to pasture management and extension of the growing season. Special attention is paid to targeted pasture management by herders. This includes fencing and deliberate water placement through new watering troughs. In 2023, 12 new drinking troughs will be installed on the Alpine pastures Putzen, Rendl and Tritsch.



Targeted pasture management through watering points (troughs)

In cooperation with the Chamber of Agriculture, the aim is to ensure the continued existence of Alpine pasture farming. For this reason, Alpine pasture staff are specially trained



Pasture management to avoid natural hazards

In a partnership project between the two KLAR! regions of Stanzertal Valley and Kauergrat, certain **Alpine areas are monitored and evaluated over a longer period of time** in cooperation with the Chamber of Agriculture and RegioL. The focus here is on Alpine biodiversity as well as soil properties of grazing by small animals (sheep, goats) compared to non-grazed areas. The findings derived from this are to serve as a basis for the future grazing of the Alpine areas.

Restoration of old ponds

Preservation of unique ecosystems

Biodiversity and climate are closely linked and influence each other. Small lakes and wetlands, especially in the Alpine region, are affected by the impacts of climate change (increase in dry periods) as well as shifts in land usage. It is important to preserve the unique biodiversity of these ecosystems and to protect the natural area.

Nature conservation therefore has the task of **keeping ecosystems intact or renaturing them, which protect the climate by storing and absorbing carbon..** In addition, the natural adaptability of ecosystems to climate change is to be increased.

These so-called ecosystem-based approaches aim at positive interactions between nature conservation, climate protection and climate adaptation and are often more **cost-effective than technical solutions**. At the same time, these gems also serve as local recreation areas for locals and guests, which in turn benefits the attractiveness of summer tourism.



Egger Weiher (Strengen)

The St. Anton am Arlberg Tourism Association will restore the **Egger Weiher swimming basin in Strengen** over the next two years. The goal is to reverse the heavy siltation, optimise water inflows and outflows and make the surroundings more attractive as a near-natural area.

Weiher Hirschenbad, Nessleralm (Pettneu)

Sedimentation is already so advanced here that excavation work has to be carried out. Here, too, the primary goal is to **preserve the ecosystem and protect biodiversity..** The municipality of Pettneu is taking on this project as a sponsor.

Awareness-raising measures

It is important to sensitise the population to climate change, the necessary adaptation and the value of diversity for the future. Since everyone can make their contribution, some awareness-raising measures will be implemented to achieve this.

Climate roundtables

As part of so-called “climate roundtables”, **experts** are regularly invited to give important lectures on topics such as climate-friendly alpine pastures, climate-friendly buildings, energy use, recycling management, possible subsidies, etc. These events are intended on the one hand to provide information, as well as for discussion and an important exchange of views.

Training/education

Hiking and mountain bike guides are trained on the topic of climate and climate change. To this end, **workshops** are held and participation in the **KlimaAlps training programme** to become a so-called “climate guide” is supported. Subsequently, trained hiking guides are to develop special tours (climatopes) in the Stanzertal Valley on the topic of climate change and adaptation.

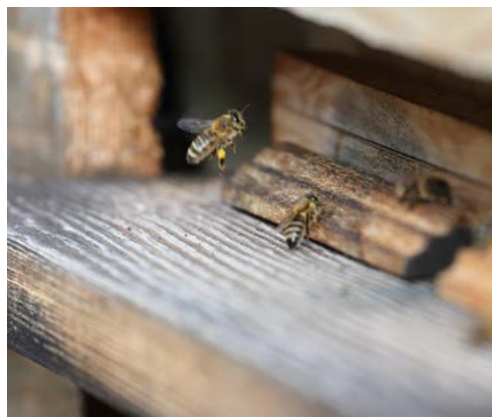
Biodiversity – Protecting biodiversity

Brochures and guidelines

You are already holding the first publication of the KLAR! Region Arlberg Stanzertal Valley in your hands. Brochures and guidelines are being developed to raise awareness and improve communication. Public relations is an important measure.

Climatopes

So-called “climatopes” in the region are also to be defined and promoted as part of the climate training. At these locations, **climate change can be discovered and experienced in real life**. Climate change affects, for example, the high mountains, mountain forests, moors, rivers and lakes, alpine meadows, pastures and mountain pastures, as well as humans and their settlements.



Bee house

Climate change is destroying many habitats for insects, especially bees and butterflies. Likewise, insects die due to the reduced diversity of flowers or exotic plants that do not provide food for them. Bees pollinate over 80% of plants. **In the last 30 years, about 70% of the mass of insects in Austria has disappeared.** Recent mid-European studies have undoubtedly identified rates of decline in insect fauna of over 5% per year. (Umweltbundesamt.at/Insects in Austria)

Many beehives can be discovered throughout the Stanzertal Valley. One new project is **the bee house in St. Anton am Arlberg**, which is located in the Verwall. Hier wird **local beekeepers' association** will maintain new beehives and, among other things, also show **interested visitors the importance of this insect species** using a display beehive.



Bee pastures

Flowering strips are **specially created areas where many different flowering plants grow, which are an important food source for bees**. Such areas are often referred to as “bee pastures”.

The blooming of the flowers contained in these areas often lasts until early autumn, delighting visiting insects such as **honeybees, wild bees, bumblebees and butterflies** as well as people with their blaze of colour. That is why so-called flower strips have been established in numerous places in the region. The **primary school of St. Anton am Arlberg** was also significantly involved in this project. In doing so, we are supporting biodiversity and the region's beekeepers.

Citizen biotopes

Species-rich grassland is a valuable habitat for numerous rare plants and animals. Especially public areas are suitable habitats and act as stepping stones and refuges for numerous endangered and rare insects. These so-called citizen biotopes can be **havens for endangered native animal and plant species to retreat and thrive**.

Citizen biotopes can serve as inclusive, dynamic and vibrant places and tasks for raising awareness and building trust, i.e. for community biodiversity promotion. **This project is in the planning stage and is to be implemented in the Stanzertal Valley in cooperation with the Tyrolean Environmental Advocacy Office.**



Regional products



A large part of per capita CO2 emissions is caused by private consumption, including **the production and transport of food**. With a more sustainable diet consisting of more regional products, consumers' climate footprints can be significantly improved. The direct sale of agricultural products protects the climate. **At the same time, the local economy benefits.**

In our region, cheese is still produced for the region on the alpine pastures (Tritsch, Nessler,

Putzen, Dawin). This can be purchased at the Flirsch Dairy. The "Arlberg egg" is also sold regionally. There are also numerous food processing companies, such as "die Sennerei" in St. Anton am Arlberg or the butchery "Wetter Wild" in Pettneu, which specialises in game, and many more.

To ensure that these products can be purchased around the clock seven days a week, there is a so-called **Regiobox** in St. Anton am Arlberg and Schnann.

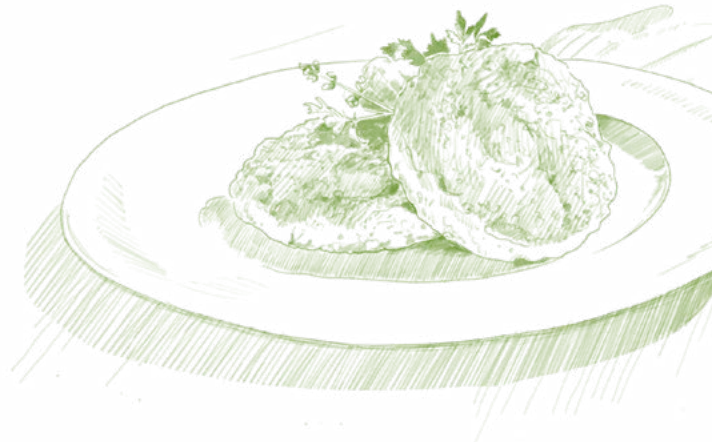


Photo: © TVB St. Anton am Arlberg – Patrick Sälty

Further projects



Establishment of climate-friendly playgrounds



Shading of heat-sensitive areas (schools, kindergartens, ...)



Raising awareness for a climate-friendly alpine and pasture landscape

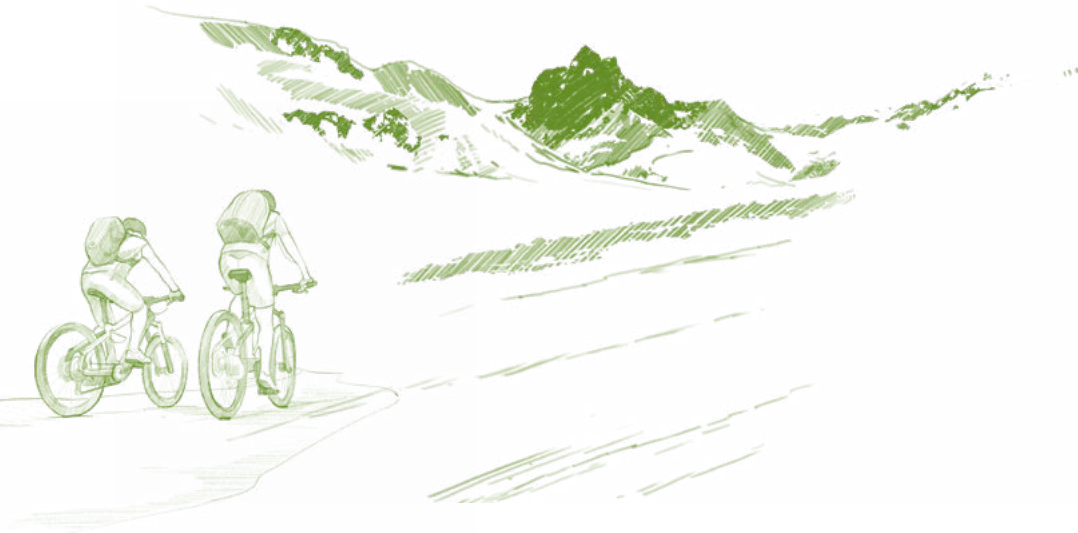


Your idea could go here

Photo: © TVB St. Anton am Arlberg – Patrick Sälty



Change as a tourism opportunity



For tourism in our region in particular, adaptation to climate change is becoming more and more of an issue.

While for many decades we were only known as the “cradle of skiing”, summer tourism is becoming more and more appealing. To escape the heat in the urban centres, more and more people are taking advantage of the pleasant temperatures on the

Sustainable tourism requires a conscious climate-friendly attitude towards one’s own living space and quality of life. “

mountain for a “summer retreat”. The climate change-related extension of the growing season (and thus of the hiking season) as well as a more conscious, sustainable lifestyle of locals and guests are also paving the way for sustainable tourism in the region.





The Arlberg mountain railways are also taking responsibility in the Arlberg Stanzertal Valley region.

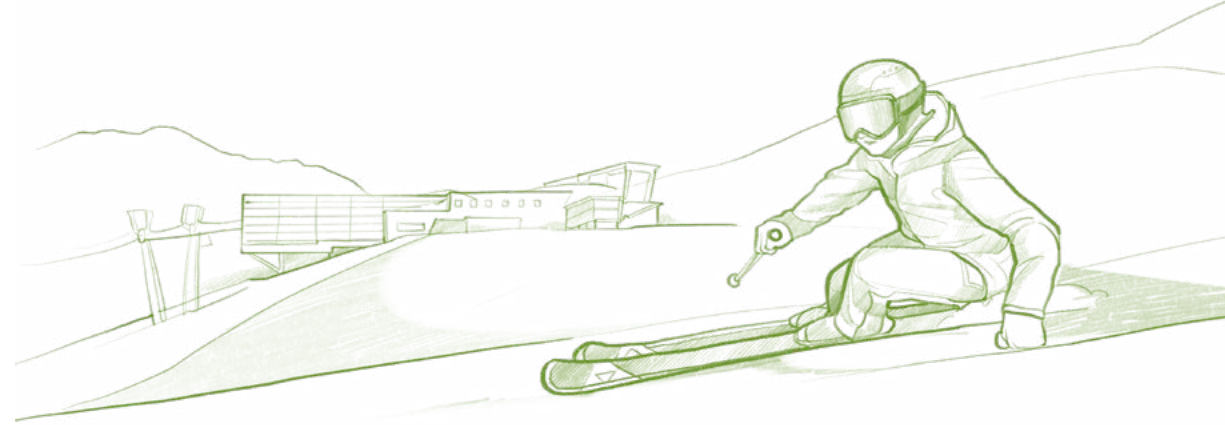
As one of the largest employers in the region, the ABB (Arlberger Bergbahnen or Arlberg mountain railways) are following a path that is as sustainable as possible on an ecological, economic and socio-cultural level. It is important to handle the available resources as gently as possible, integrate the highest

level of available technology, and above all, consider the human factor in all respects.

Nature is the basis of our daily work. That is why it is important for us to treat our environment with respect. “

As a cable car company, ABB pays attention to acting in a future-oriented manner. For this reason, work is always being done to improve the offer, taking into account all sustainable aspects.

Photo: © TVB St. Anton am Arlberg – A. Genevein



Here is an excerpt of the measures currently being implemented by ABB:

- » **100% green electricity** from renewable energies
- » The administration building is connected to the **local biomass heating plant**.
- » **Heat recovery** Galzig mountain station
- » **Ecological piste management:** Resource-efficient **snowmaking with snow depth measurement & management**. Only the amount of snow that is actually needed is produced. This ensures the sensitive handling of resources, with increased snow reliability and higher slope quality. To

ensure this, each snow groomer is equipped with a snow depth measurement.

- » **Intelligent snowmaking system**
- » **Electric snow groomer** in test phase
- » Optimisation of energy output through **construction of own PV plants**
- » Use of **regional Products** in mountain gastronomy, sustainable procurement
- » **Safe workplace**, employer branding
- » Promotion of **public mobility** (Stanzertal Valley ski bus system, cooperation with with ÖBB/Nightjet to the mountains)
- » Support the project “**Respect your boundaries**”

Your contribution counts!

#yourcontributioncounts – Practical tips for everyday life

(Climate change adaptation | Province of Tyrol)

Drinking water: Klar! also cares about our water! Our water from the Stanzertal Valley is the best drinking water and comes straight from the tap! If you prefer sparkling water, then don't buy bottles – invest in a "SodaStream" to pep up the best drinking water from the Stanzertal Valley!

Wild meadow: Not only does a natural garden look beautiful, it also provides food and hiding places for insects and birds. Trees in the garden provide additional shade on hot and dry summer days. "Nature in the Garden" provides you with support and advice so that you can make your garden climate-friendly.

Collect rainwater: You can collect the rainwater that runs off the roof in a barrel and use it to water your plants in the house and garden. Rainwater is also ideally suited for cleaning activities. This way you can save up to 70 litres of precious drinking water per day (Source: Verein Energie Tirol).

Protect the soil: Healthy soils are key to mitigating and adapting to climate change, preserving biodiversity and ensuring food security. However, we lose large amounts of healthy soil every day. You can learn how to protect the soil, for example, in the certificate course "Soil Practitioner for Grassland".

Limit driving your car: Aside from the harmful greenhouse gases released by driving, parked cars create more heat pollution. It is possible that the interior of the car heats up to 56 degrees within an hour at outside temperatures of 30 degrees (Source: Der Standard).

As an alternative to the car the best solutions are cycling and walking, and subsequently bus and train. If you do need a car, use car sharing.

Save energy and use it more efficiently: The topic of saving energy is more relevant than ever – not only to save money but also to protect the climate. The Province of Tyrol has summarised simple energy-saving tips as well as information on funding and relief measures (tirol2050.at).

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Appendix

The KLAR! Region Arlberg Stanzertal Valley boasts a well-functioning network in the district. For example, it is part of the KEM (Climate and Energy Model Region Landeck) and a partner of the already experienced KLAR! Kaunergrat region, as well as other important partners such as the Regional Management Landeck, Chamber of Agriculture, District Forestry Directorate, Tyrolean Environmental Advocacy Office, Tyrol Energy Agency, Climate Alliance Tyrol, Climate Alliance Tyrol from the Department of Regional Development for the Province of Tyrol, etc.



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St. Anton
am Arlberg



Pettneu
am Arlberg



Flirsch



Strengen

