

Renergia fact sheet

WHERE WASTE BUILDS UP A HEAD OF STEAM

Renergia is a modern and environmentally sound municipal waste incineration plant, as well as an innovative power station which is coming to Perlen/Root. With the latest technology and the waste heat utilisation the Paper Mill Perlen will be supplied with energy. Causing ideal energy efficiency to be achieved.

THE PROJECT RENERGIA

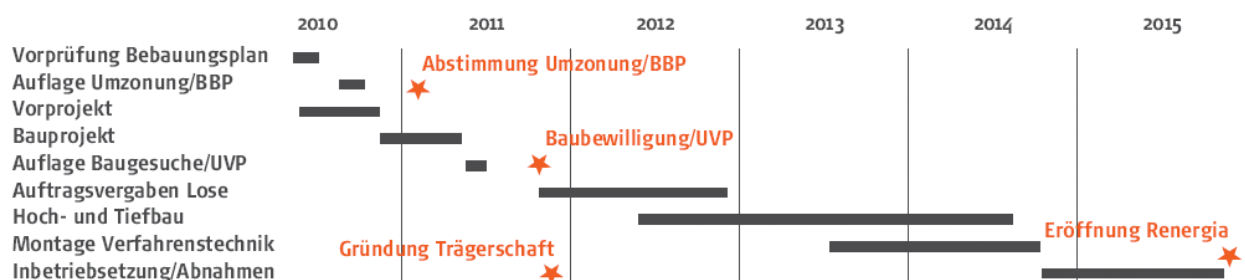
A new municipal waste incineration plant (MWIP) in Perlen shall replace the previous plant MWIP Ibach (year of construction 1971). The project is innovative and moving toward the future in different aspects: The new plant is going to be built directly next to the Perlen Papier AG which will use the waste heat from the municipal waste incineration plant for the paper production. Thereby the Perlen Papier AG will economize 40 million liters of oil per year, which decreases the CO₂ emission by 90,000 tons. Concurrently, Renergia will be the largest electric power station in the canton of Lucerne. For this reason the project will accomplish an essential contribution to the climate protection. Furthermore, compared to today, the aerial emissions in Perlen will be reduced due to the modern waste air cleaning system.

The new MWIP can process 200,000 tons of waste per year and has enough capacity to take the waste from the entire Central Switzerland. Therefore, all waste associations of Central Switzerland have great interest in a common funding body named Renergia Zentralschweiz AG. The advantages are obvious: The distance for delivery transport to the MWIP will be severely reduced, whereas the environment is preserved and costs are lowered. Additionally, over decades, the plant guarantees a high safety of disposal regarding favourable conditions for the cantons of Central Switzerland.

In spring 2010 the documents for the planning process concerning the development plans were filed with the community Root. The result of the preliminary examination by the cantonal departments has shown that the project fulfills high claims regarding space planning as well as environmental compatibility.

OPERATIONS

The development plan was pre-tested by different authorities and is disposed in the definite version as of the end of October 2010. At the same time the project team of the planning people works in the context of the pre-project intensively on the technical basics. In October 2010 the general inspection of the environmental impact assessment will be started. The opening of the Renergia is planned at the end of 2015 because many waste associations who are involved in the funding body would like to replace their plants with the energy-efficient MWIP in Perlen in this period.

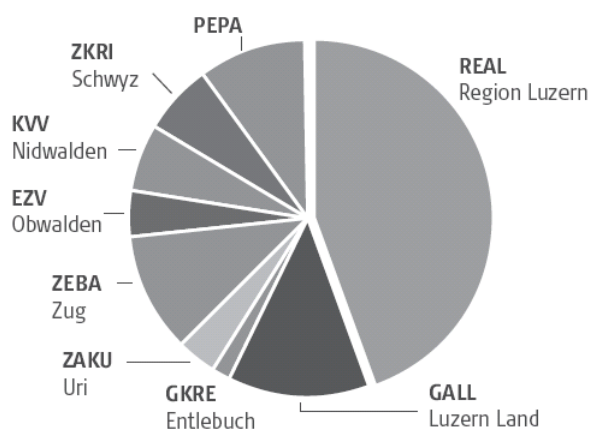


FUNDING BODY RENERGIA: CENTRAL SWITZERLAND

The waste associations of Central Switzerland

The eight waste associations of Central Switzerland consisting of all six cantons and the Perlen Papier AG are planning and creating the Renergia together. Every association is participating according to its waste accumulation. Partners participating are as follows:

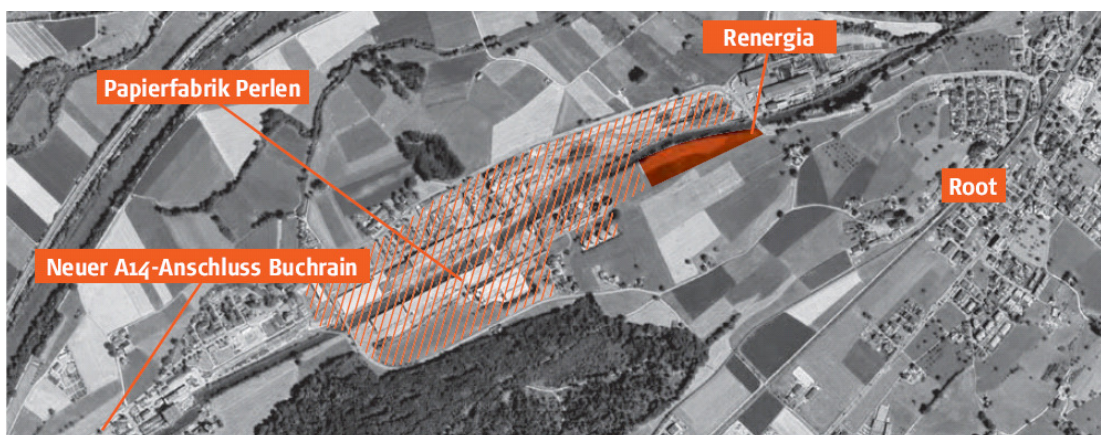
- REAL Recycling Entsorgung Abwasser Luzern
- GALL Gemeindeverband für Abfallentsorgung Luzern-Landschaft
- GKRE Gemeindeverband Kehrichtentsorgung Region Entlebuch
- ZAKU Zentrale Organisation für Abfallbewirtschaftung im Kanton Uri
- ZEBA Zweckverband der Zuger Einwohnergemeinden für die Bewirtschaftung von Abfällen
- EZV Entsorgungszweckverband Obwalden
- KVV Kehricht Verwertungs Verband Nidwalden
- ZKRI Zweckverband für die Kehrichtbeseitigung Region Innerschwyz
- PEPA Perlen Papier AG



All partners work currently as a planning community under the lead management of REAL manifest the project. The foundation of the Renergia Zentralschweiz AG corporation is intended for the construction and the later operation of the plant. All associations, as well as the Perlen Papier AG, are proportionally represented in the decision-making bodies.

PERLEN, AN IDEAL LOCATION

Renergia is more than a municipal waste incineration plant (MWIP). It is above all a modern power station which can deliver a substantial amount of electricity and heat that is necessary for the production of paper during a 24 hour period, 365 days of the year.



Position plan of the new plant: In immediate vicinity to the paper Mill Perlen, developed by the motorway access Buchrain.

The location next to the Perlen Papier AG is optimal for several reasons:

Development with access to the new motorway Buchrain

All transport deliveries are led over the new motorway access Buchrain. There's no additional traffic through residential areas and the planned traffic infrastructure can absorb the increased traffic easily.

Railway Connection

Industrial railway systems currently exist in this location. Thus, railway transports are possible.

Heat supply

Great quantities of heat, which nowadays must be produced with heavy oil, fuel oil and gas, are necessary for the paper production. Being located next to the Paper Mill enables a safe and constant supply with environmentally sound, carbon-neutral heat from waste.

Development

The location opens the possibility to supply the Rontal with district heating. The first district heating pipe is planned to run through to the center of the village Root. This will occur before further areas in the Rontal are developed.

Employment

Even though the Perlen Papier AG pays a current price for the heat the environmentally sound and inexpensive energy of the Renergia contributes to save over 500 jobs at the Perlen Papier AG in the long run. This is a tremendous economic benefit for the entire region.

Central Location

The waste is processed in the heart of Central Switzerland, needless transport is avoided.

Today's waste flows out of Central Switzerland



Waste flows out of Central Switzerland with the Renergia in Perlen



ENVIRONMENTAL FRIENDLINESS

Energy

The times of the pure waste disposal are over. Waste is a source of energy and has energy content like wood. It is currently regarded as fuel, which we want to utilize with the maximal use of energy. Renergia supplies about 38,000 households with electricity and also delivers the heat for the paper production. As a result, 40 millions liters of oil can be economized every year. Renergia takes a top position in the ecological energy production.

Air

The legal limit values are undercut by multiples due to ultra-modern, multistage flue gas cleaning. The pollution of the air decreases substantially opposite today's heat production with oil because the new municipal waste incineration plant can produce the same energy much cleaner.

Climate Protection

The carbon footprint of the canton Lucerne improves by approximately 90,000 tons of CO₂ due to the replacement of heavy oil, fuel oil and gas. This corresponds roughly to 20% of all car kilometers driven in the canton Lucerne. Thus, Renergia makes a large contribution to the attainment of climate protection goals.

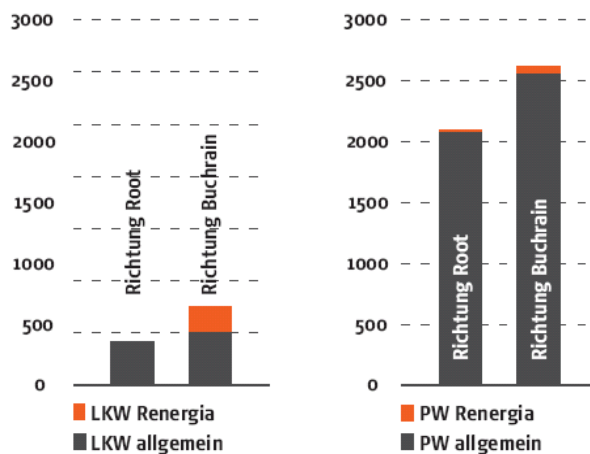
Ecological Compensatory Measures

The builder has voluntarily committed himself to extensive compensatory measures. For example, the relocation of the football field and converting the area to the pre-existing nature including the bog, as well as the restoration of the creek.

Traffic

Thanks to the central location, the kilometers of the transport deliveries decrease. With the access from the motorway Buchrain, no residential areas are affected by truck traffic. The congestion by the additional traffic is only slight as compared to the normal traffic.

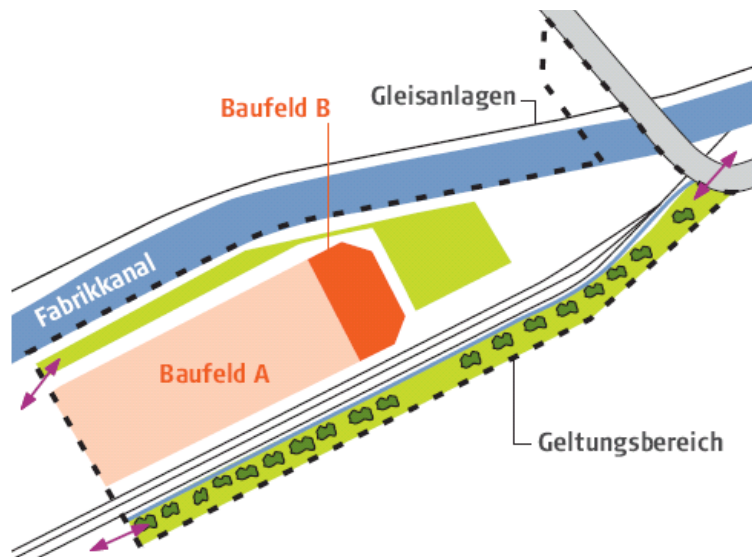
Journeys per day over the canal bridge in the year 2030



THE DEVELOPMENT PLAN "WAGMATT"

The major part of the area is already currently located in a construction zone. The location is also registered in the cantonal structure plan. Among other things, the type of use, the construction design, the surrounding design and the development are bindingly authorized in the regulations of the development plan "Wagmatt". Some of the central points are:

- The purpose of the zone is the construction and the operation of a power station for reclamation of energy from waste.
- The plant has to fit into the townscape and landscape accordingly, and the topographical situation has to be accommodated.
- An ecological appreciation shall be provided in the green area and in the strip of the river bank vegetation. More compensatory measures beyond the area are provided.
- The accesses and departures of the heavy traffic are solely effected over the motorway access Buchrain.



The development plan will be made public and displayed for examination. It will be presented to the electors of the community Root for vote and becomes effective after the approval by the counselor of the canton Lucerne.

THE ARCHITECTURE OF THE BUILDING



View of the Renergia from Inwil

Abstract Report of the Architect

Careful Local Integration

The Reuss valley with its riverscape forms the extended context for the Renergia. The new plant has its location northeast of the Paper Mill Perlen and on the northwestern edge of the municipal area of Root. The silhouette of the building fits gently into the rolling landscape.

Strong Shape and Structure

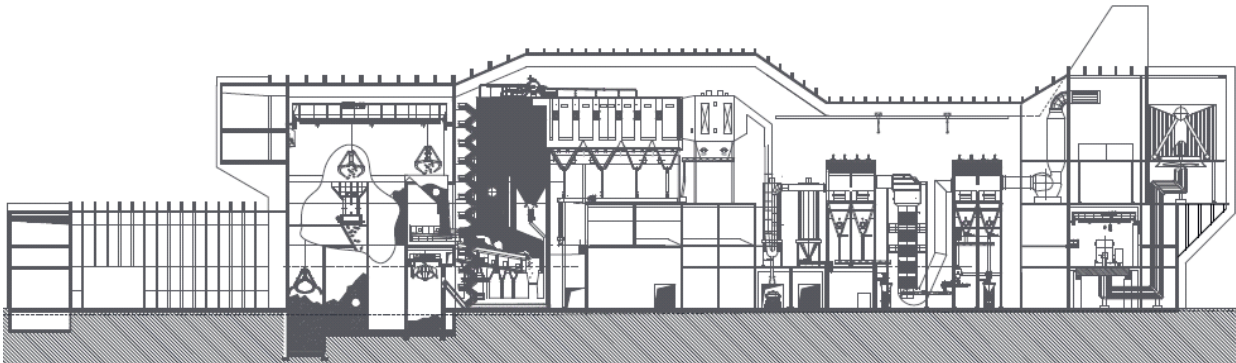
The outer shape and the content of the Renergia are directly connected and mutually dependent. A central room layer in longitudinal direction of the building forms the middle ridge as a characteristic structural element that constitutes development and supply functions, which is the static bracing element. The office area of the building faces the northeastern direction, whereas the chimney with the machine house of the steam turbine is located towards the hillside. It finishes the Renergia in the direction of the Paper Mill.

Specific Construction and Material

The housing of the new plant will become monolithic. Low maintenance and durability is a result due to the combined system of prefabricated dyed concrete elements and additional cast-in-place concrete. The ribs, which lie for functional reasons outside, support the lasting vertical elegance and communicate contemporaneously the expression of the interior nature outwards: machine aesthetic.



The carefully planned architecture of the project Renergia



Longitudinal section of the plant

INFORMATION

For further information:

- › Renergia: www.renergia.ch
- › REAL: www.real-luzern.ch
- › Perlen Papier AG: www.perlen.ch
- › Community Root: www.gemeinde-root.ch
- › Hotline for telephone inquiries:
REAL Luzern, 041 429 12 12