



From oil to regional biomass with energy contracting

The oil boilers that supplied a centre for people with disabilities were replaced with a modern, low-emission biomass system – saving 220,000 litres of oil and 800 tonnes of CO₂ per year – and this, without capital investment by the owner! The 1,096,000 Euro investment project was carried out with energy contracting: an ESCO planned, financed, constructed and operates the heating system. Since October 2020, the centre is supplied to 100 % with environment-friendly, renewable heat from regional biomass.

Energy efficiency first

Diakonie is one of the largest social organisations in Austria. One of its centres for people with disabilities in Engerwitzdorf/Upper Austria consists of 8 buildings comprising workshops, therapy facilities, 30 apartments, 2 nursery groups and more. Over 320 employees offer a range of services to the 134 residents and around 170 daily clients.

The buildings (approx. 16,650 m²) were mostly built over 50 years ago. They were heated by 5 oil boilers (4 of which from the 1980s) installed in 2 locations on the premises. The age of the installations combined with the high indoor temperature and large hot water demands of the care facilities resulted in a yearly heat energy demand of around 2,000 MWh and 220,000 litres of oil!

Over the past years, a 15 % decrease in oil consumption (reduction to 170,000 litre/year) was achieved through improvement measures such as the installation of energy metering and monitoring, partial window replacement, and heating system optimisation (pumps, controls and hydraulics). The next logical step was to eliminate fossil fuels completely!



Biomass – a clean, CO2-neutral regional energy source

The outdated heating system was replaced with 2 automatic, low-emission wood chip boilers (500 kW and 400 kW), 3 x 4,000 litre buffer storage, around 650 metres of new, modernised heating network, and demand-response control. The wood chips are supplied by local farmers that practice sustainable forestry. In a conscious effort to minimise the environmental impact of the project, the new heating system and wood chip storage were consolidated into an already existing building. No additional building or land space was needed. However, this strongly limited the size of the wood chip storage (150m³), thus requiring weekly deliveries of fuel – which has been unproblematic so far.

Clean energy investments without own capital: this is how!

Energy supply contracting enabled Diakonie to modernise and fully decarbonise the heating system without investing its own capital. An ESCO planned, financed, constructed and now operates the heating system, including the distribution network and heat transfer stations. The ESCO supplies heat for the duration of the contract (15 years), after which the installation will be owned and run by Diakonie, or a new contract will be signed.

The energy contracting model offers significant advantages. Using the services of an ESCO brings access to capital, ensures quality and provides know-how on modern heating systems. Typically, energy supply contracting is less complex than energy performance contracting. And seeing as the ESCO is responsible for the operation and maintenance of the system, the client benefits from a hassle free heat supply.

Tips for a successful project

- Numerous projects have shown that low emission, highly-efficient biomass boilers operated by experienced ESCOs works very well!

- Replacing oil heating with biomass can be easier than replacing gas (space requirement, economically)

- Pellet and wood chip boiler options are available and can be adapted to many situations.

- You can support the local economy by making local biomass sourcing mandatory in the contract.

OÖ Energiesparverband has supported over 50 such projects in the past years through its facilitation services and the management of the regional funding projects.

Contact

OÖ Energiesparverband, Landstraße 45, 4020 Linz
www.esv.or.at, office@esv.or.at

Fact & figures

- Organisation name: Evangelische Diakoniewerk Gallneukirchen
- Type of project: biomass energy supply contracting for space heating and hot water for 8 existing buildings
- ESCO: Aigner Energie Contracting GmbH
- Year of implementation: 2020
- Installed technology:
 - 2 wood chip boilers (500 kW and 400 kW)
 - 3 x 4,000 litre buffer storage
 - 150 m³ wood chip storage
 - around 650 m of new heating network
 - High energy-efficiency through demand response control
- Heated area: approx. 16,650 m²
- Heat demand: 2,000 MWh/year
- Wood chip consumption: approx. 2,500 m³/year, supplied by local farmers
- CO₂ savings: around 800 tonnes/year
- Investment costs: 1,096,000 Euro (total investment)
- Subsidies:
 - 67,500 Euro (regional contracting programme)
 - 326,500 Euro (investment subsidy)
- EPC contract duration 15 years