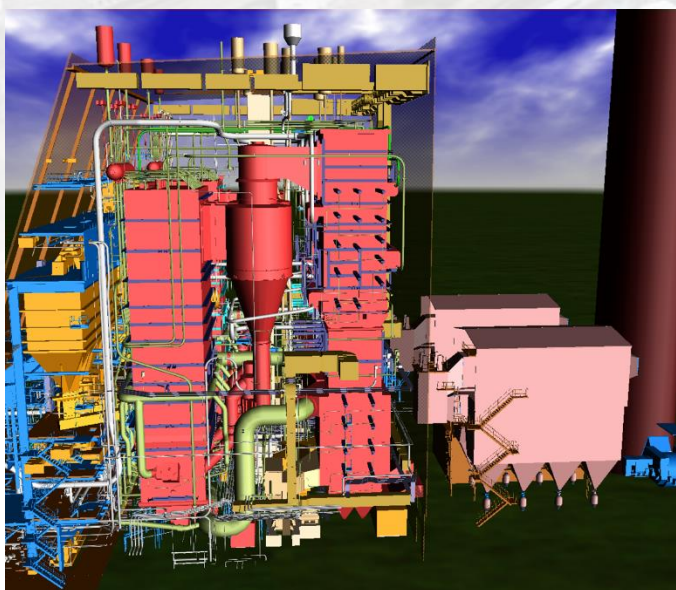


## EXPERIENCED PARTNER IN FLUIDIZED BED BOILER TECHNOLOGY



Under different company ownerships, UNIS Power has always played significant role in the technical development of fluid bed boiler technologies in Europe and especially in the Czech Republic.

First boiler with circulating fluidized bed (CFB) technology has been co-developed and put into operation in the 90<sup>th</sup> in the city of Zlín. The boiler is using unique “cold” cyclone technology. Lower circulating fluid bed velocities enable to in-build all SH and RH heating surfaces before cyclone, directly into the combustion chamber.

### **3D model of FLUIDIZED BED BOILER**

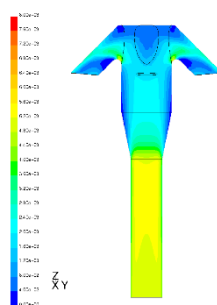
Throughout decades and changes of different international group ownerships, the company had unique opportunity to gain broad know-how in both circulating fluid bed (CFB) and bubbling fluid bed (BFB) technologies. The key projects of CFB technology installations are Heating Plant Plzeň, Power Plant Ledvice and Heating Plant Kladno; project using BFB technology has been executed in Heating Plant Komořany.

Komořany project is also significant reference in fluid bed boiler retrofits. An unfinished boiler, partially delivered, rusty and without documentation was finally redesigned, erected and put successfully into operation by UNIS Power. Other two existing boilers were partially re-designed with the aim to improve operational characteristics and reduce the wear of in-bed evaporator circuit.

Further important CFB modernisation project has been performed in Power Plant Hodonín. CFB boiler with steam output 170 t/h firing lignite has been converted to burn 100% of biomass only with achieving the same steam output as with coal burning.

Number of different technical improvements and/or technical analysis has been performed on both its own installations and installations originally supplied by others. Starting from development of own patented nozzle design, different operational improvements assistances including emission reduction, critical part re-designs and/or continuing with fuel change re-calculations, life assessment studies etc., UNIS Power continuously assists its customers with broad fluidized bed boiler technology experience.

UNIS Power is a reliable supplier of different types of fluidized bed boilers, their retrofits and technical studies focused on operational characteristics improvement and performance enhancement.







## Heating Plant Zlin

**Client:**

**CFB boiler data:**

**Scope of work:**

ALPIQ Generation (CZ) s.r.o.

150 t/h, 96 bar(a), 540 °C

Design, manufacturing, delivery, erection and commissioning of complete boiler house



## Power Plant Ledvice

**Client:**

**CFB boiler data:**

**Scope of work:**

ČEZ a.s.

SH 350 t/h, 132 bar(a), 545 °C, RH 300 t/h, 31 bar(a), 540 °C

Design, manufacturing, delivery, erection and commissioning of complete boiler house



## Heating Plant Plzeň

**Client:**

**CFB boiler data:**

**Scope of work:**

Plzeňská teplárenská a.s.

180 t/h, 136 bar(a), 540 °C

Design, manufacturing, delivery, erection and commissioning of complete boiler house



## Heating Plant Kladno

**Client:**

**CFB boiler data:**

**Scope of work:**

ECK Kladno – APLIQ Generation (CZ) s.r.o.

SH 375 t/h, 132 bar(a), 540 °C, RH 330 t/h, 19 bar(a), 540 °C

Design, manufacturing, delivery, erection and commissioning of complete boiler house with 2 identical boilers



## Heating Plant Komořany

**Client:**

**BFB boiler data:**

**Scope of work:**

UE a.s., Most Komořany

145 t/h, 75 bar(a), 490 °C

Re-design of partly delivered boiler, manufacturing, delivery, erection and commissioning of complete boiler



## Power Plant Hodonin

**Client:**

**CFB boiler data:**

**Scope of work:**

CEZ a.s.

170 t/h, 96 bar(a), 510 °C

Re-design of existing boiler to convert boiler fuel base from lignite to biomass (mainly wood chips), modification of boiler itself, BMS logics, new external and internal fuel (biomass) handling, delivery, erection and commissioning