



Condens Heat Recovery Oy

CLEANING AND HEAT RECOVERY TECHNOLOGY

Ilkka Haavisto, Kyiv, 6.2.2020



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Condens Heat Recovery Oy

- Turnover in current year about 3 m€
- Number of employees 10 persons
- Sole owner of the company is Mr Ville Haavisto

Products

- Condens Oy delivers gas cleaning equipment and related water treatment
- The equipment is used for gas cleaning and condensing heat recovery from gas flows
- The most common application is flue gas heat recovery, but there are other applications like composting plant exhaust gases and industry
- Products are based on own R&D
- First delivery has been made in 1991
- More than 150 units have been delivered, most of them in GRP material
- Condens Oy has delivered condensing heat recovery equipment to boiler plants between 0.7 and 300 MW



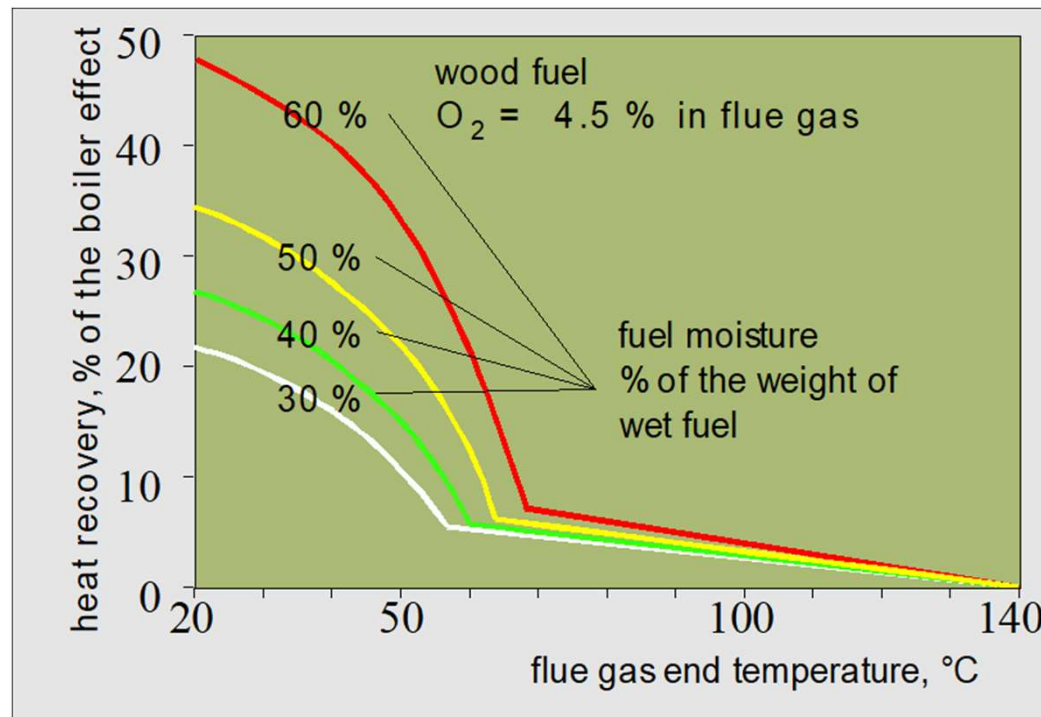
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**More than 150
single units
since the year
1991**





Where does the heat come from?



Combined performance

- Heat recovery from 10 to 35% boiler output
- Dust separation from 60-90%
- Separation of $SO_x > 90\%$
- Separation of $HCl > 90\%$
- Separation of $NH_3 > 90\%$



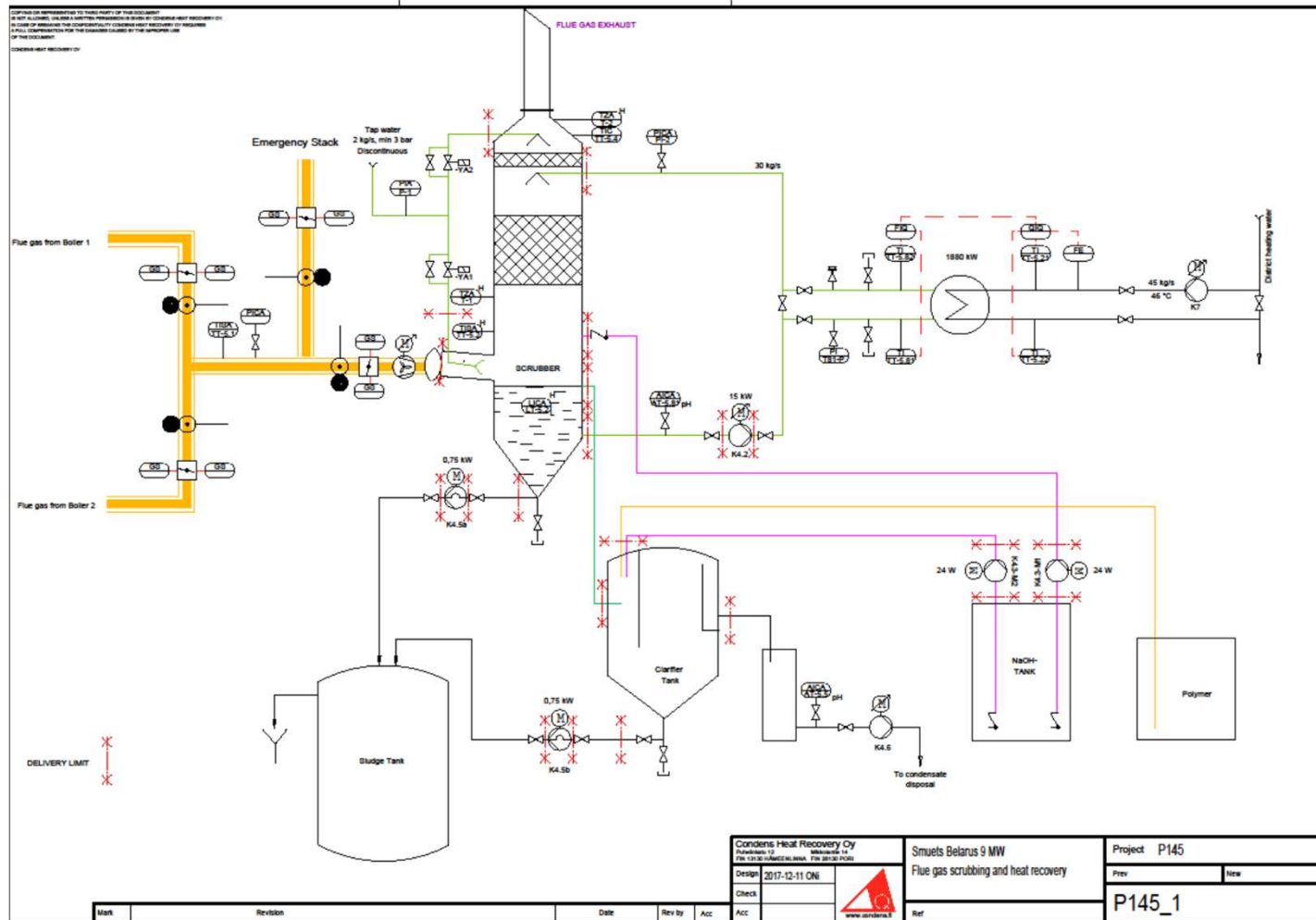
The potential of condensing heat recovery

- With wood fuel 10 – 30 % (of current boiler effect)
- With agrobiomass fuel 10 – 20 %
- With waste, anything – depends on the waste and the burning process
- NH_3 , SO_x and HCl removal can be built into the same wet processing unit



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Case Minsk 2 x 4.5 MW Biomass fuel



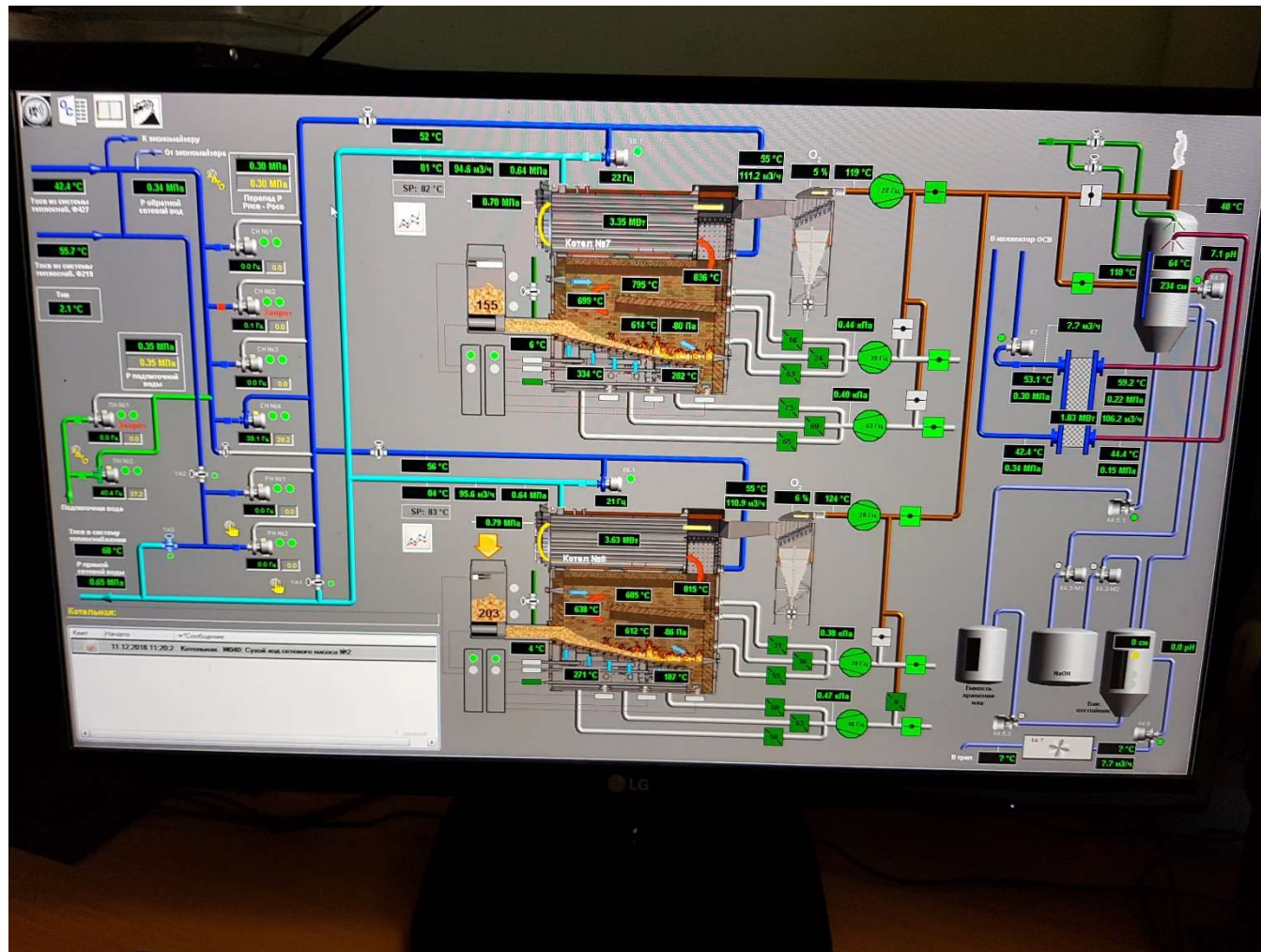


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Case Minsk 2 x 4.5 MW Plant view



Case Minsk Control system view





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Riikinvoima, Leppävirta

- Fuel: mixed household waste
- Boiler effect 54 MW
- Return water temperature 48°C
- Return water flow 233 kg/s
- Heat recovery 6787 kW





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Rauhalahti, Jyväskylä

Heat recovery and sulphur removal

- Fuel: peat, woodchips
- Heat recovery 28,5 MW
- Boiler effect 295 MW
- Delivery in co-operation with Andritz Oy



Katrinefors, Sweden

- Boiler effect 27,8 MW
- Heat recovery 7942 kW
- Fuel humidity 50 %
- Return water temperature 55 °C
- Return water flow 120 kg/s
- Delivery includes a humidifier of burning air





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Laval sur Vologne, France



Condensate treatment

Scrubber

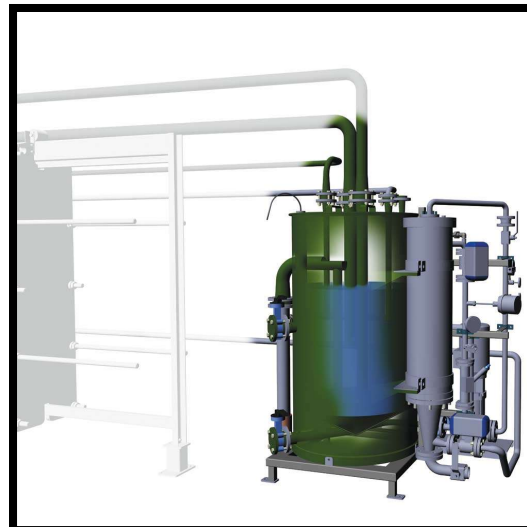




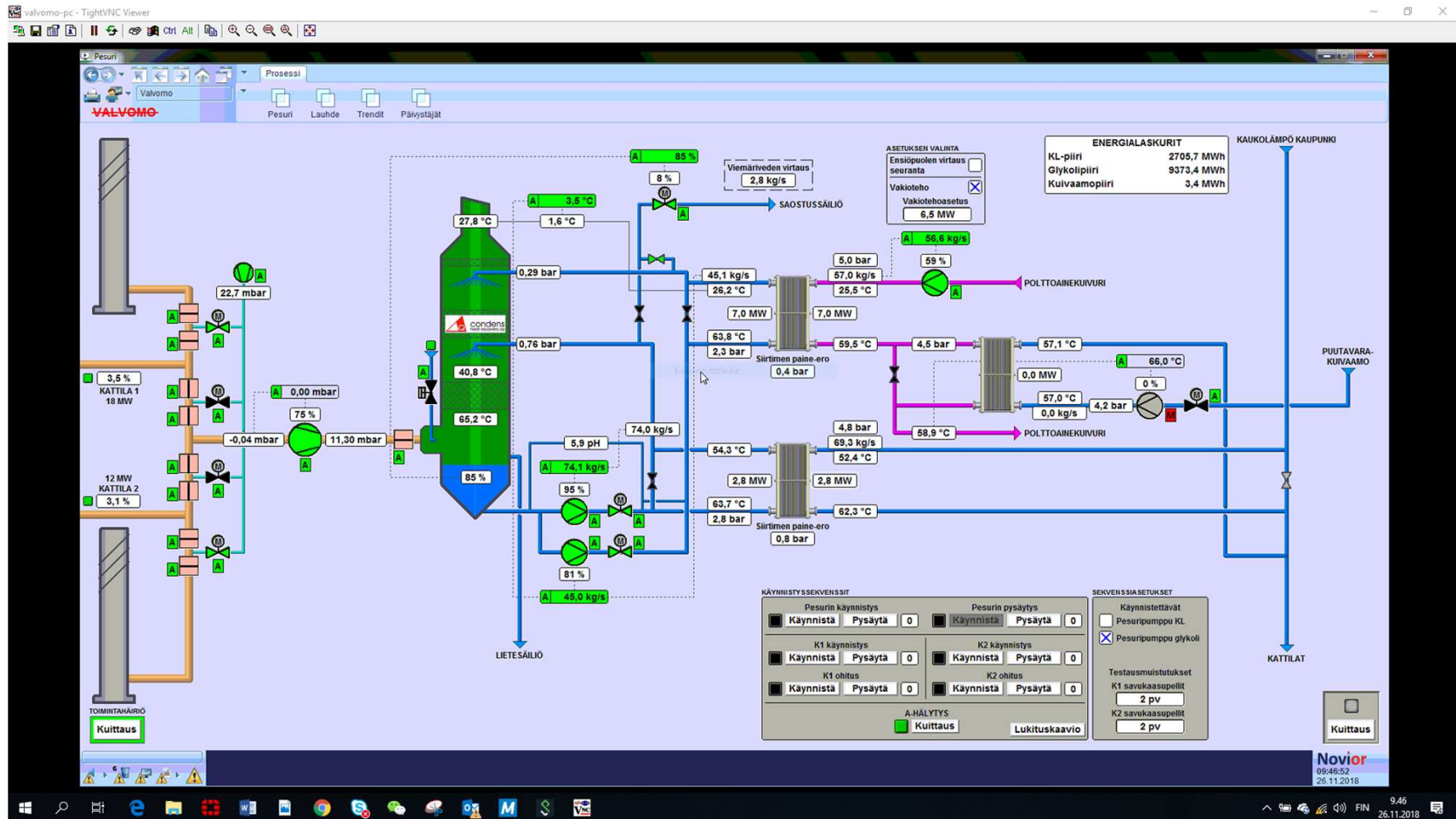
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Nurmijärvi, Klaukkala

- Boiler effect 10 MW
- Fuel moisture 55 %
- Return water temperature 45 °C
- Heat Recovery 3383 kW
- Return water flow 50 kg/s
- Delivery includes a humidifier of burning air



Case Kuhmo 12 + 20 MW Sawmill, District heating and Fuel dryer, heat recovery 14 MW



Delivery of Condens technology to Ukraine

- Turn key deliveries, if required
- Partners are used in order to guarantee a smooth local service in the local language
- Local partners are preferred and looked for
 - Mechanical assembly
 - Piping
 - Control and electricity
- Current Lithuanian partner available

Summary: Innovative Energy Technology

- Condens Heat Recovery Oy has developed a unique gas processing and heat recovery system based on highly corrosion resistant plastic constructions
- The technology has been demonstrated commercially since 1991 and it is well established on the market with more than 150 references in Europe
- References for biomass boiler flue gas processing in the boiler effect range of 1 – 300 MW_{th}
- SO_x, H₂S, NH₃, HCl, HF... removal
- Corrosion proof processes
 - Several construction materials, like plastics, titanium and super alloys available
- Turn key units available in Ukraine in Ukrainian language