## Example 15.1

## Result

|        | CpH    | CpS    |
|--------|--------|--------|
| !CO2 ! | 41.649 | 41.377 |
| !H2O ! | 34.153 | 34.106 |
| !N2 !  | 29.381 | 29.36  |
| !O2 !  | 30.473 | 30.405 |

|                | S(kW/K) | %    |
|----------------|---------|------|
| Furnace/boiler | 587.11  | 82.2 |
| Turbine        | 84.65   | 11.9 |
| Condenser      | 41.69   | 5.8  |
| Pump           | 0.74    | 0.1  |
| Total          | 714.19  | 100. |

|                | W(kW/K)*10^-3 | %    |
|----------------|---------------|------|
| Ideal          | 80.           | 27.3 |
| Furnace/boiler | 175.05        | 59.8 |
| Turbine        | 25.24         | 8.6  |
| Condenser      | 12.43         | 4.2  |
| Pump           | 0.22          | 0.1  |
|                | 292.94        | 100. |

Efficiency of the power plant is

27.3

%