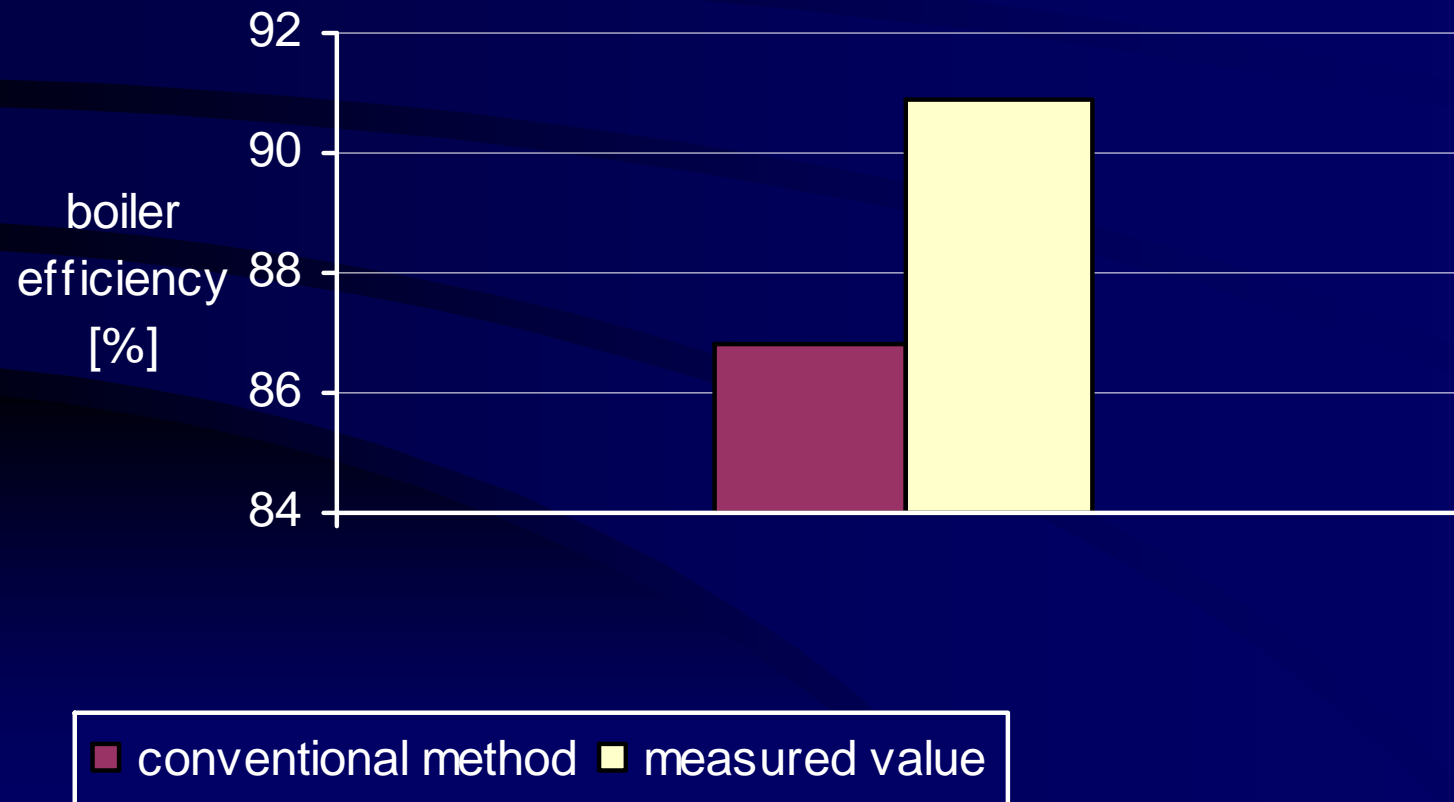


**SUMMARY OF A COMPARISON  
WITH MEASURED VALUES ON  
450 kW 2-PASS REVERSE FLUE  
HOT WATER BOILER**

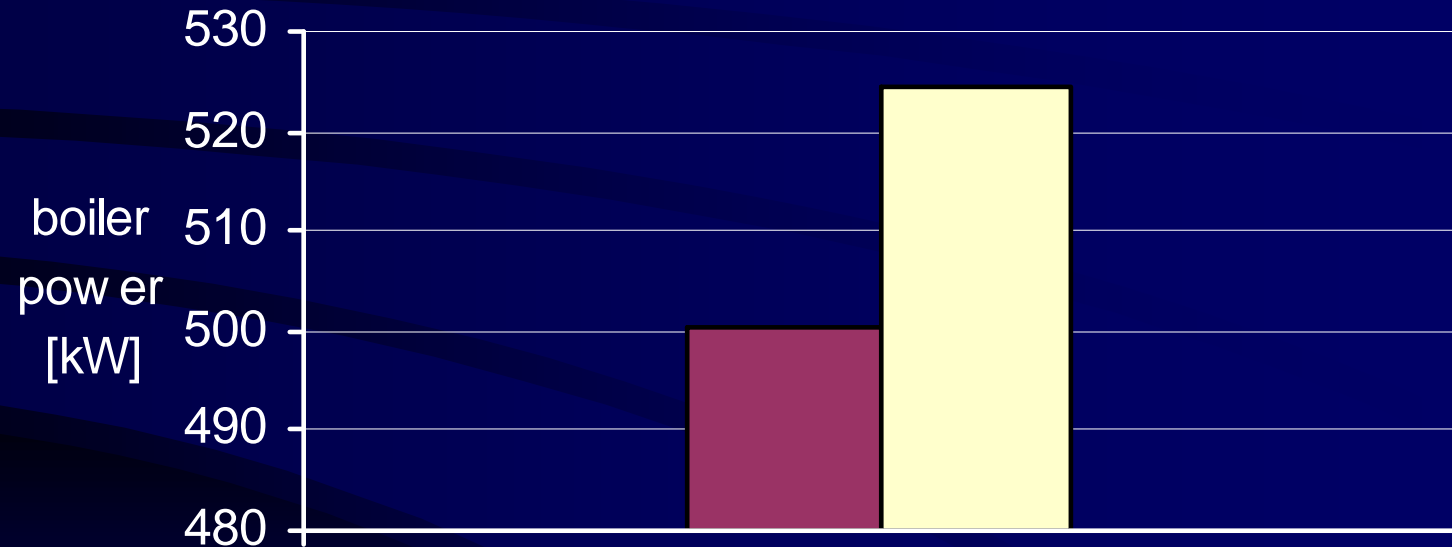
# RESEARCH MOTIV

By existing method calculated boiler  
**EFFICIENCY** lower than measured



# RESEARCH MOTIV

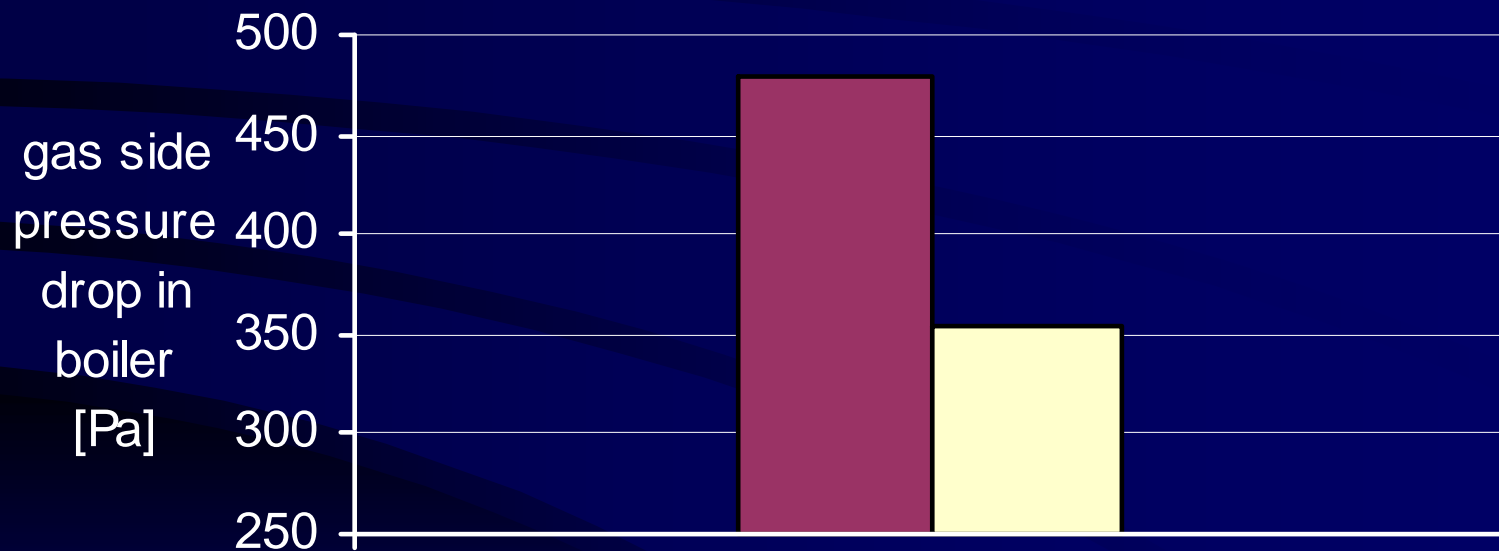
By existing method calculated boiler POWER lower than measured



■ conventional method ■ measured value

# RESEARCH MOTIV

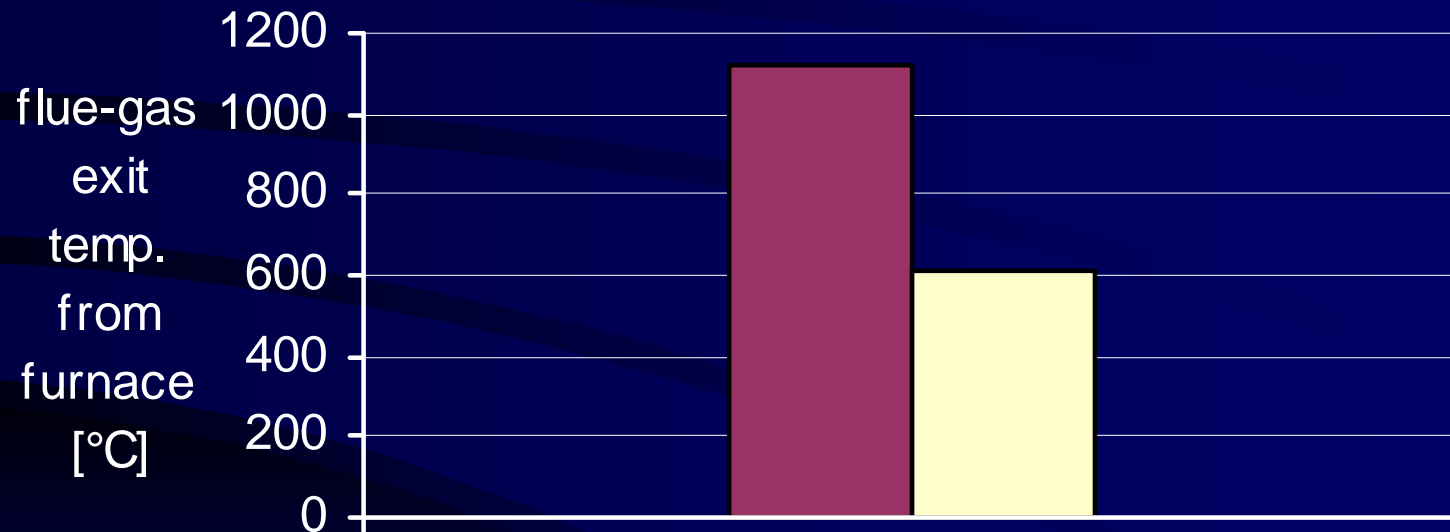
By existing method calculated gas side PRESSURE DROP in boiler higher than measured



■ conventional method ■ measured value

# RESEARCH MOTIV

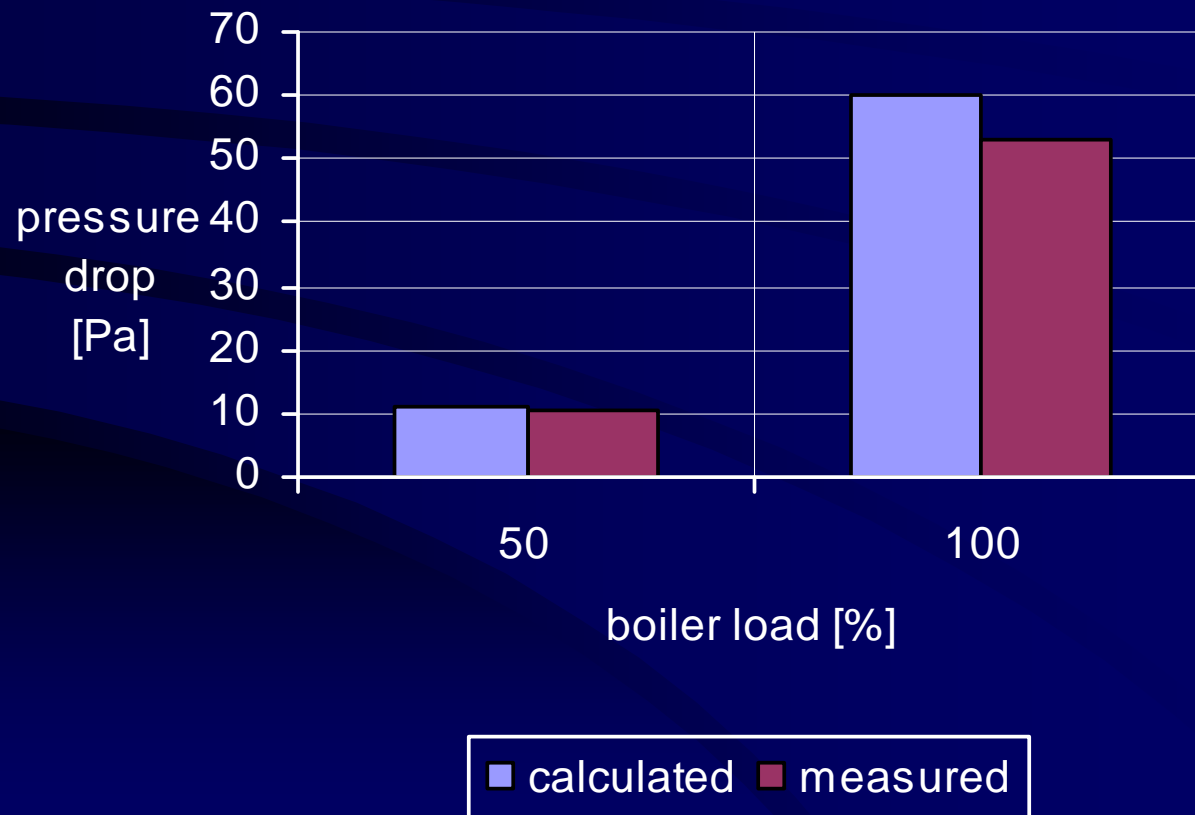
By existing method calculated flue gas EXIT TEMP. from boiler furnace higher than measured



■ conventional method ■ measured value

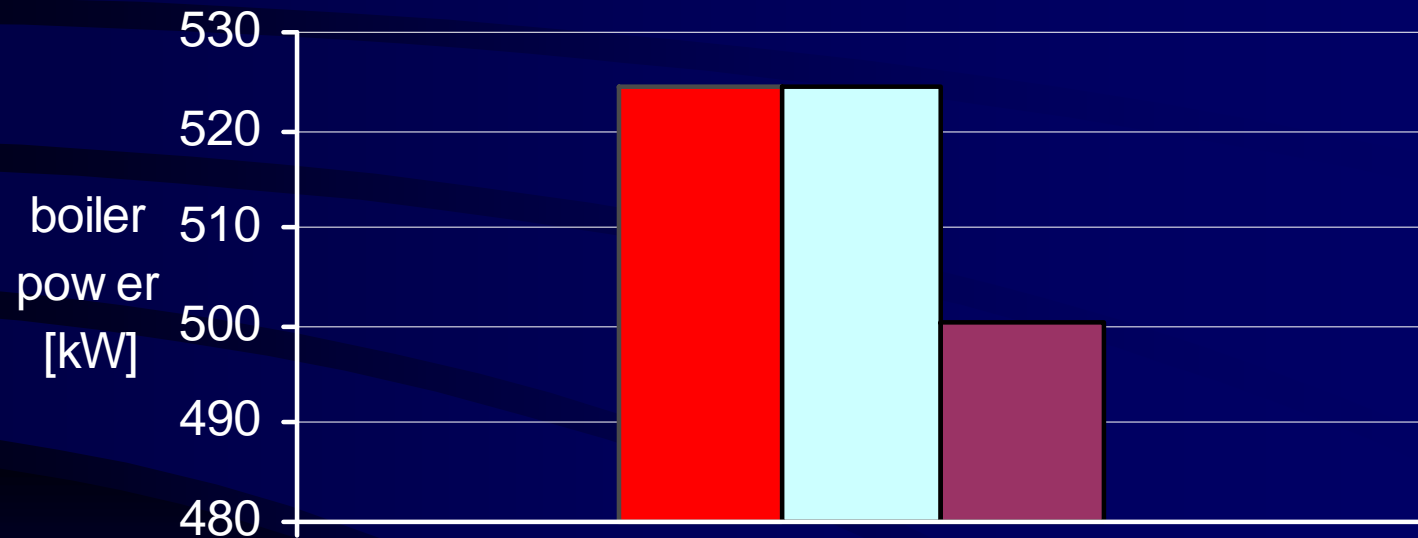
# IMPROVED CALCULATION METHOD

## RESULTS: PRESSURE DROP WITH COILED WIRE TURBULATORS



# IMPROVED CALCULATION METHOD

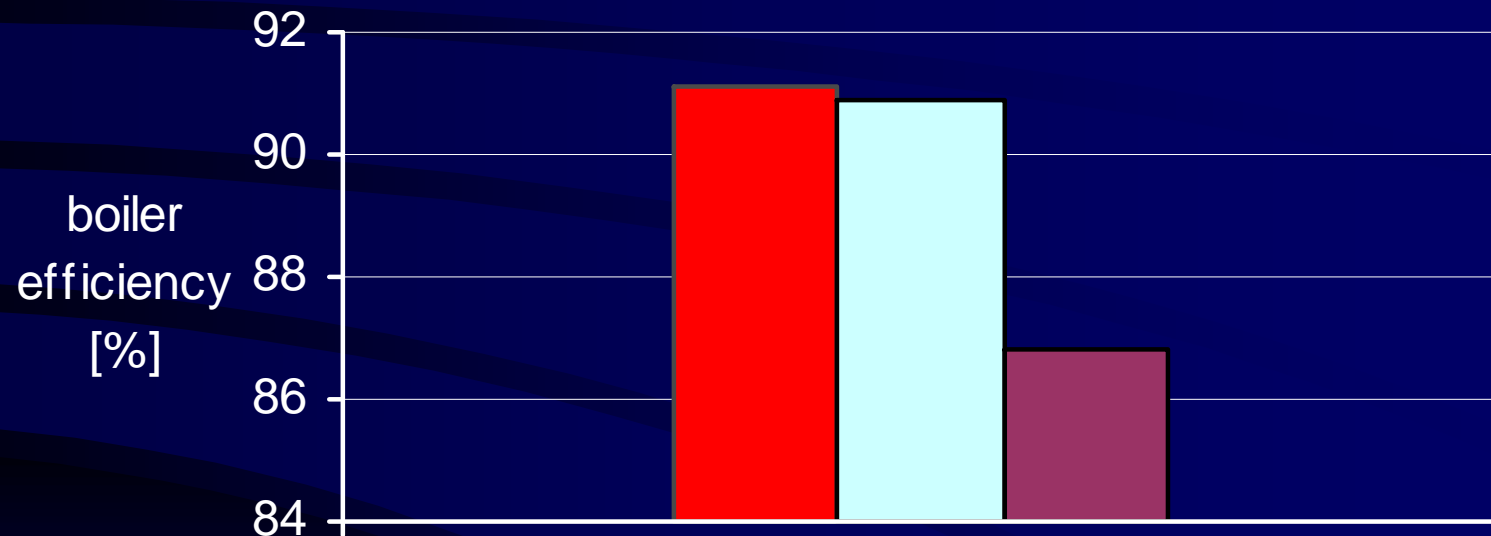
## RESULTS: BOILER POWER



■ introduced method ■ measured value ■ conventional method

# IMPROVED CALCULATION METHOD

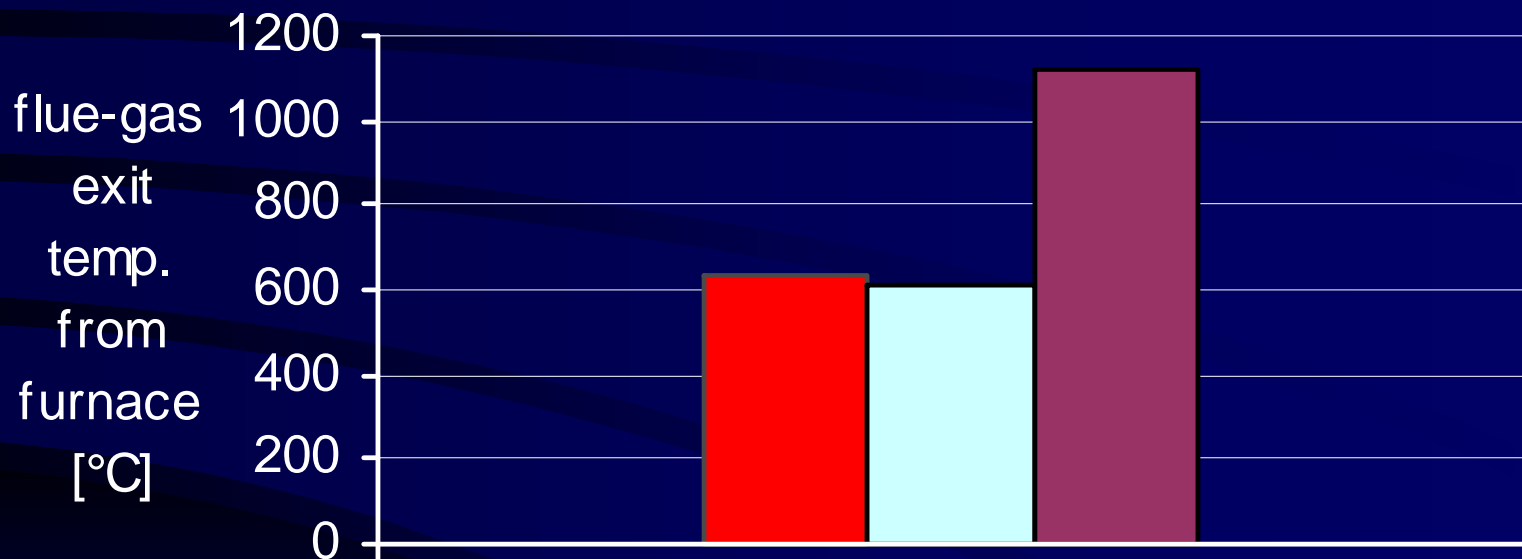
## RESULTS: BOILER EFFICIENCY



■ introduced method ■ measured value ■ conventional method

# IMPROVED CALCULATION METHOD

## RESULTS: FURNACE FLUE GAS EXIT TEMP.



■ introduced method ■ measured value ■ conventional method