



# High Voltage Electrode Boiler

For Offshore Installations



PARAT MEH

# High Voltage Electrode Boiler



- Zero Emission
- From 6 to 24 kV
- Up to 60MW per Boiler
- Fast Backup Boiler
- Small Footprint and Low Weight
- Steam or Hot Water
- Well proven technology by PARAT
- No Electrode Wear



# Steam and Heat Solutions

## Zero Emission Heat Generation

*Since more and more offshore fields get connected to electricity from shore, the possibility of installing the Electrical High Voltage Boiler (MEH) instead of the traditional gas- or oilfired boilers is increasing. Large amounts of heat in form of either steam or hot water is needed to keep an offshore installation in operation, and by making this replacement the emissions to the atmosphere will be significantly reduced.*

### **Some advantages of the MEH:**

- 99.9% efficiency
- Compact design – up to 60MW in one unit
- Fast regulation
  - From cold to full load in less than 5 minutes
  - From minimum load to full load in 30 seconds

The design of the electrode boiler is developed over decades with focus on reliability and safety. This has resulted in a boiler with almost zero earth current and no wear on the electrodes. This means that the need of maintenance is very low - only 3 days/year in average.

### **The MEH are available in different versions:**

- For fixed and floating installations
- For hot water and steam purposes
- Indoor and outdoor
- Safe and hazardous area

The first offshore delivery of a High voltage boiler was made in 2009 to Bergesen Offshore. The boiler, 8MW 190°C hot water, operates as a Peak Load heater in the FPSO's heating medium system, which has WHRUs as it's main heat source. The delivery was a turnkey package assembled on a skid suitable for outdoor rough environment and EX certified for zone II.

The Johan Sverdrup field is one of the largest developments on the Norwegian Continental Shelf, the heat for the heating medium system will be produced by two High Voltage Electrode Boilers supplied by PARAT. The delivery is a turnkey skid-assembly consisting of 2x12MW boilers including heat exchangers, pumps, water treatment and control system.

Equinor states that the total CO<sub>2</sub> reduction from this electrification will be 460.000 tonnes CO<sub>2</sub> per year, equivalent to the emissions of 230,000 private cars.



*Photo: Roar Lindefjord / Bo B. Randulff / Equinor*



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