



## Veolia MPPE Technology

## Shell Ormen Lange - Norway

### Shell Ormen Lange Natural Gas Project

Nyhamna Norway



- World's most challenging gas field development project
- Makes Norway world's largest exporter of natural gas
- Largest industrial project ever carried out in Norway
- 100 kilometer from the northwest coast of Norway
- January 2008 on stream



### Challenge

- Treatment of Gas Produced water and site waste water
- Bio- treatment downstream
- Veolia MBBR technology
- highest level of coastal discharge standards.



### Performance

#### MPPE unit removes >99% of:

- Dispersed oil (aliphatics)
- Dissolved and dispersed aromatics (BTEX)
- Poly Aromatics (PAHs)

#### MPPE unit capacity 70 m<sup>3</sup>/hr

- MPPE unit with steam boiler located in a separate skid
- Full run test before shipment
- Size MPPE skid 11 x 10 x 16 m (L x W x H)
- In operation since 2008 to full satisfaction of client

#### The MPPE process

MPPE stands for Macro Porous Polymer Extraction. Polymer beads contain a specific immobilized extraction liquid. Hydrocarbon contaminated water is passed through a column packed with MPPE particles. The hydrocarbons are extracted from the water at any designed efficiency up to 99.999%. The MPPE particles can simply be regenerated by heating with steam. The removed hydrocarbons are recovered as an almost 100% pure product. No other waste stream is created. No chemicals requires, no off gasses produced.

#### MPP & TiPSS Technologies

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