

PROJECT PROFILE: Seawater FGD, Norway

# Kjøpsvik

## Seawater flue gas desulphurisation



In 2017, Doosan Lentjes was awarded the contract by NORCEM AS to deliver a seawater flue gas desulphurisation (FGD) facility on a full turnkey basis for the Kjøpsvik cement plant, located in Kjøpsvik, Norway.

### DELIVERABLES

- Turnkey seawater FGD plant

### CHALLENGES

- Retrofit of seawater FGD plant in limited space conditions
- Cement plant still in operation
- Minimised shut-off periods for tie-in

### BENEFITS

- Compliance with all emissions requirements
- Solution delivered from one single source
- Flexible adaption to changing load conditions and sulphur content
- Minimum footprint of the plant
- Flexible through pass of the flue gas in non-operation mode of the FGD plant
- Minimum investment, operation and maintenance costs

# FGD system secures compliance with emissions standards

NORCEM AS, part of the HeidelbergCement Group, owns and operates a cement plant, located in Kjølpsvik, northern Norway. Given the background of high emissions requirements, the plant needs to be equipped with an environmental system capturing sulphur dioxide (SO<sub>2</sub>) emissions from the exhaust gas.

As a reliable partner for these types of projects, Doosan Lentjes was selected in 2017 by NORCEM AS to retrofit a seawater flue gas desulphurisation (FGD) system on a full turnkey basis. Applying the proven seawater process will allow the customer to benefit from an economic solution while

still delivering on environmental targets: Built on a small footprint with minimum investment and operation costs, the plant will achieve desulphurisation efficiencies of up to 95%. This will reliably secure full compliance with local emissions requirements.

With Doosan Lentjes as the sole EPC provider, the customer will receive an integrated solution meeting the challenge of ongoing operation with minimal downtime during the retrofit.



## Key Project Data

<b>Customer</b>	NORCEM AS (part of the HeidelbergCement Group)
<b>Location of power station</b>	Kjølpsvik, Norway
<b>Award date</b>	2017
<b>DeSO<sub>x</sub> technology</b>	Seawater FGD
<b>Number of DeSO<sub>x</sub> lines</b>	1
<b>Flue gas flow rate</b>	280,000 m <sup>3</sup> / h (STP, wet)
<b>SO<sub>2</sub> inlet concentration</b>	370 - 1000 mg / m <sup>3</sup> (STP, dry @ 10% O <sub>2</sub> )
<b>Guaranteed emissions data (acc. to 10% O<sub>2</sub>)</b>	
SO <sub>2</sub> removal efficiency	up to 95%
Max. SO <sub>2</sub> concentration at stack outlet	< 50 mg / m <sup>3</sup> (STP, dry)



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Doosan Lentjes is a global provider of processes and technologies for energy production from renewable and fossil fuels. Our specific areas of expertise include circulating fluidised bed boilers, key technology for the generation of energy from waste, and flue gas cleaning systems. We have been pioneering energy solutions for 90 years and convert millions of tonnes of waste into valuable energy each year.

Doosan Lentjes is part of a powerful combination of companies united under the Doosan Group to deliver complementary technologies, skills and value to customers the world over.



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