



02\_INDUSTRY

# Elkem Solar

## Industrial plan for silicon production



Elkem Solar, Fiskaa Kristiansand | Photo: Orkla

Elkem Solar has developed a new, energy economical, metallurgical process to produce solar grade silicon. A new facility has been constructed, consisting of 5 separate process stages, each in separate buildings.

Elkem Solar entered in 2006 into separate contracts with 2 EPCM contractors for realization of the new factory. The American company Fluor Daniel entered into a contract for 4 of the 5 process stages while BIS Production Partner entered into a contract for one stage.

Detail engineering, design and construction of the new factory have been carried out in extremely short time. The production capacity today is 6.000 tonnes per year.

### PROJECT

Industrial Plant for Solar Silicon Production

### PROJECT TYPE

Basic and detail engineering, multi-disciplinary, cite assistance

### LOCATION

Fiskaa, Kristiansand

### CLIENT

Elkem Solar

### TIME PERIOD

2006 - 2008

### KEY NUMBERS

4,2 billion NOK |  
6000 metric ton

## SCOPE OF WORK

Multiconsult participated in the basic engineering phase of the project development under a frame agreement with Elkem Solar.

In the detail engineering phase Multiconsult was given the role as responsible applicant according to The Planning and Building Act and carried out engineering and design work related to project management, layout, architecture, civil and structures, soil mechanics, electrical and mechanical engineering, piping, HVAC, water and sewage, acoustics, roads and landscaping as subconsultant to Fluor and in cooperation with BIS Production Partner. In addition, Multiconsult carried out quality surveillance for fire engineering.

Multiconsult assisted Fluor in the construction phase including follow on engineering, site engineering, construction management and coordination.

Approximately 200 Multiconsult engineers and draftsmen have participated in the project since 2006. The work has been carried out in Oslo, Fredrikstad and Kristiansand with a peak load of approx. 90 full time positions.

The engineering and design work was based on use of 3D modeling software. Handling of interface information between design engineers, vendors, contractors and the client in a schedule driven project with parallel design work between different parties lead to choice of robust solutions, challenging use of collision control in the 3D model and heavy coordination between the various disciplines.



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