The Bonga discovery lies some 120km south-west of Nigeria in water depths ranging from 900m to 1,150m. The project included a non-weather-vaning permanently spread-moored FPSO with a capacity of 2.5m bopd, with facilities for oil, gas and water treatment.

The production system, made up of Steel Catenary Risers (SCRs) and flowlines, was laid and installed by the Acergy Polaris.

This was the first time that SCRs were hung from the FPSO and the first time that corrosion resistant alloy clad pipes were used in a dynamic SCR application.
Shell Bonga Field Development

Overview
The production system includes eight production flowlines, 10-inch, 26km total length, with six Steel Catenary Risers (SCRs) each 2km in length, two production flowlines, 12-inch, 12km total length, with two SCRs each 2km in length. In addition, a total of 24km of 12-inch water injection flowlines with 2km long SCRs transport treated seawater from the FPSO to several subsea injection wells. The SCRs, which are clad in the Touch Down Zone with corrosion-resistant alloy, are hung directly from the FPSO. The production flowlines are of pipe-in-pipe design, whereas the production risers have an external insulation to control the formation of wax and hydrates. The internal insulation is GSPU.

The most critical aspects of the project lay in the water injection lines, which have a thermoplastic lining, the SCRs, which are clad in the Touch Down Zone with corrosion-resistant alloy and which also are hung directly from the FPSO. This is the first time that SCRs are hung off from an FPSO; the excursion is greater than from a SPAR or TLP. It is also the first time that corrosion resistant alloy clad pipes are used in a dynamic SCR application.

SCOPE OF WORK
EPIC contract with Stolt Offshore as the main contractor for the Engineering, Procurement, Fabrication, Installation, Pre-commissioning and conditioning of a subsea production complex comprising:

- a spread-moored FPSO (2.5M bbl capacity at 200k bbl/day)
- 10-inch and 12-inch production flowlines and associated SCRs
- 12-inch water injection lines and SCRs
- a 16-inch gas export line running over 88km from the FPSO to the RPA riser platform in 21m water depth, and on through the OGGS pipeline into the NNLG plant onshore.