

1. Introduction

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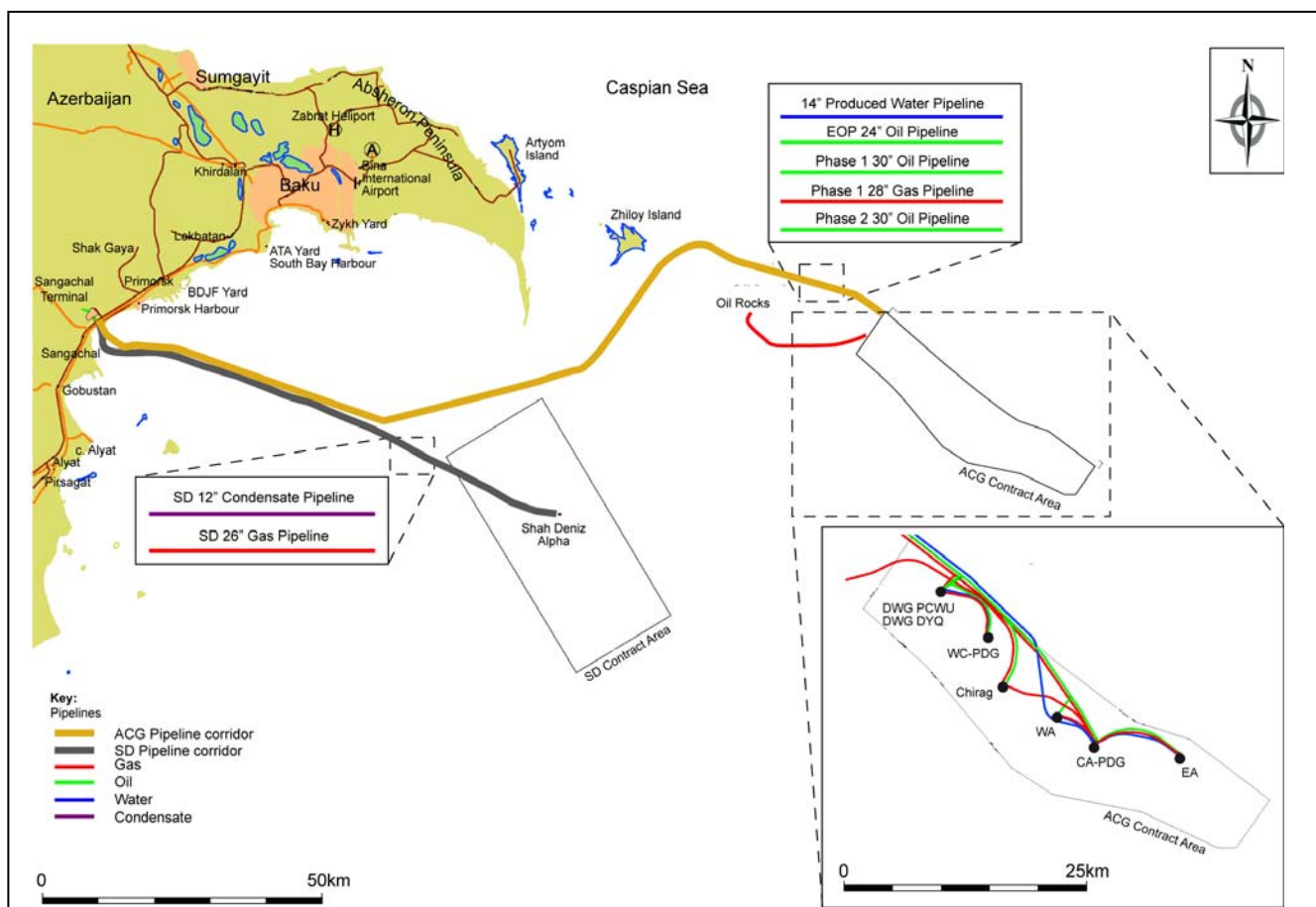
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1.1 Introduction

This Environmental and Socio-Economic Impact Assessment (ESIA) has been prepared for the proposed Shah Deniz 2 (SD2) Project. The project aims to deliver 16Bcma of gas sales, with peak condensate rates of 85Mbd through the installation of additional wells within the high pressure gas-condensate Shah Deniz (SD) Contract Area (see Figure 1.1).

Figure 1.1 Location of Shah Deniz (SD) Contract Area and Existing SD and ACG Oil and Gas Offshore Facilities



The ESIA has been conducted in accordance with the legal requirements of Azerbaijan as well as BP Azerbaijan's Health, Safety, Security and Environment (HSSE) Policy as described in Chapter 2: Policy, Regulatory and Administrative Framework. The scope and assessment methodologies used in this ESIA have been informed through a consultation process, as described in Chapter 8: Consultation and Disclosure. Stakeholders consulted have included, among others, the Azerbaijan Ministry of Ecology and Natural Resources (MENR), the State Oil Company of Azerbaijan Republic (SOCAR), National Academy of Sciences of Azerbaijan (AMEA), BP's Azerbaijan Georgia Turkey (AGT) Region representatives and the SD2 Project Design Team.

1.2 SD and ACG Development to Date

1.2.1 Shah Deniz Production Sharing Agreement

The SD Production Sharing Agreement (PSA) was signed on 4th June 1996 between the State Oil Company of Azerbaijan Republic (SOCAR) and a consortium of Foreign Oil Companies (FOC) to develop and manage the reserves of the SD gas-condensate field, herein after termed the "Contract Area". BP Exploration (Shah Deniz) Limited have been

appointed Operator of the PSA on behalf of the consortium partners. The consortium partners of SD are as follows:

- BP 25.5%
- Statoil 25.5%
- SOCAR 10.0%
- TOTAL 10.0%
- Lukoil 10.0%
- NICO 10.0%
- TPAO 9.0%

1.2.2 Shah Deniz 1 Gas Export Project

The SD Contract Area lies approximately 100km south east of Baku (refer to Figure 1.1). Full Field Development (FFD) of the SD Contract Area is being pursued in stages. The Shah Deniz Stage 1 development is located in the north eastern portion of the field and commenced production in 2006. The development included:

- A fixed platform (denoted SD Alpha) with drilling and processing facilities limited to primary separation of gas and liquids; and
- Two marine export pipelines to transport gas and condensate to onshore reception, gas-processing and condensate facilities located at Sangachal Terminal (ST), approximately 60km south west of Baku.

1.2.3 ACG Development

Development of the Azeri Chirag Guneshli (ACG) Contract Area has been pursued in phases in parallel with the SD Contract Area under a separate PSA (refer to Figure 1.1 for the location of the ACG Contract Area). To date the development phases have included:

- Early Oil Project (EOP);
- ACG Phase 1;
- ACG Phase 2;
- ACG Phase 3; and
- Chirag Oil Project (facilities under construction)

The Produced Water Disposal (PWD) project includes onshore facilities at ST to treat separated produced water to a standard suitable for transfer back offshore via a dedicated marine pipeline to the Central Azeri Compression & Water injection Platform (CA C&WP) for reinjection into the ACG reservoir for reservoir pressure maintenance. The PWD project commenced operation in the fourth quarter of 2008.

1.2.4 Existing Export Pipelines

Oil and gas are currently exported from ST following stabilisation and dehydration respectively via three main export pipelines:

- The Baku-Tblisi-Ceyhan (BTC) Pipeline transports oil from ST through Azerbaijan, Georgia and Turkey to the Ceyhan Terminal located on the Turkish coast of the Mediterranean Sea. From Ceyhan the oil is distributed to international markets. The pipeline covers a distance of 1,768km and has eight pump stations along the route with the head pump station installed at ST.
- The Western Route Export pipeline is 829km in length and transports oil from ST to the Supsa Terminal located on Georgia's Black Sea coast.
- The South Caucasus Pipeline (SCP) transports gas from ST to Azerbaijan, Georgia and Turkey. It became operational late 2006 and on 30 September, 2006 began transporting gas to Turkey from the Shah Deniz Stage 1 project. The SCP is 691km in length and runs parallel to the BTC Pipeline to the Turkish border where it is linked with the Turkish gas distribution network.

1.3 Shah Deniz 2 Project

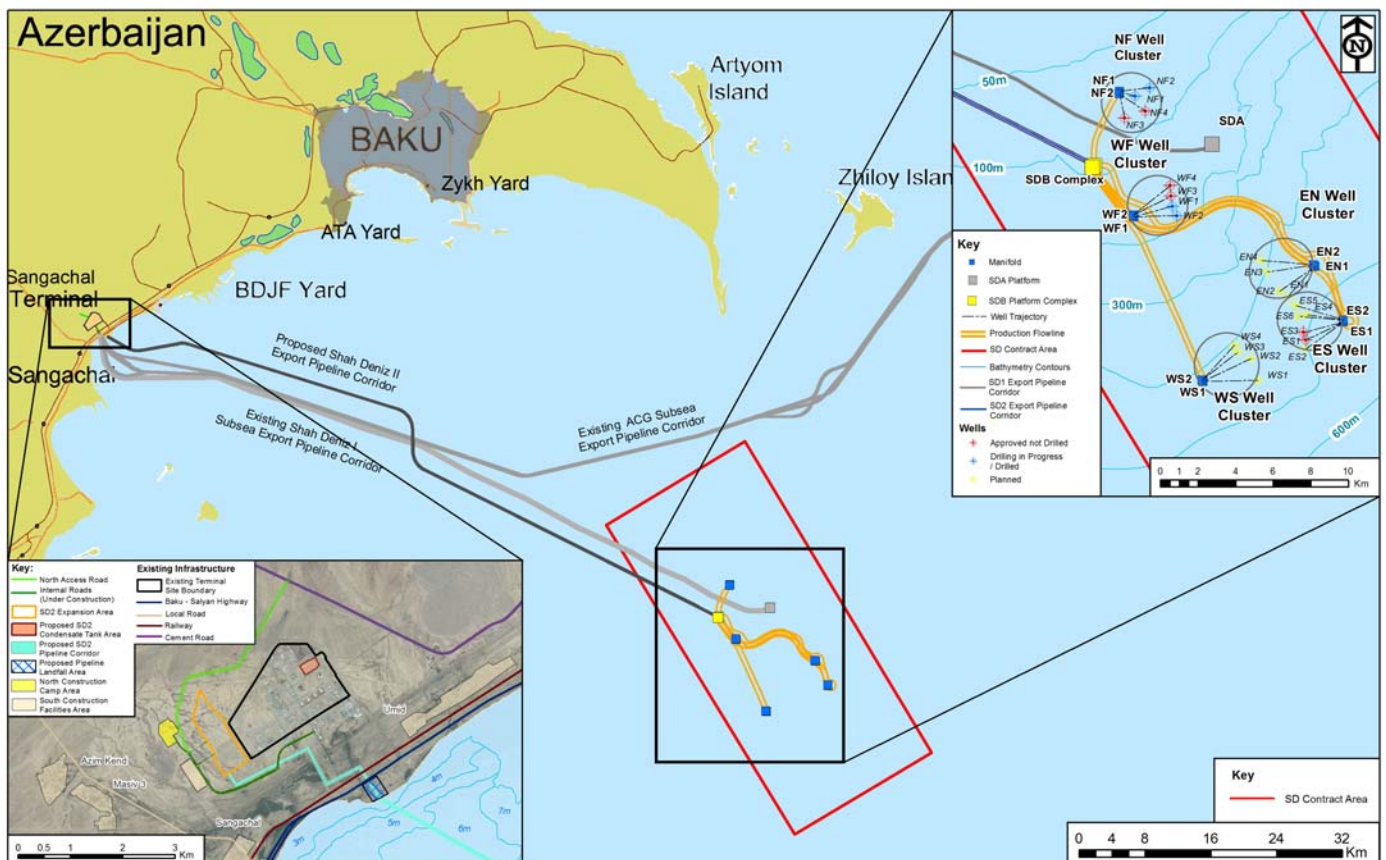
The SD2 Project represents the second stage of SD field development and is planned to comprise:

- A fixed SD Bravo (SDB) platform complex including a Production and Risers platform (SDB-PR) and a Quarters and Utilities (SDB-QU) platform, bridge linked to the SDB-PR;
- Subsea manifolds and associated well clusters, tied back to the fixed SD Bravo (SDB) platform complex by flowlines; and
- Subsea export pipelines from the SDB-PR platform to ST and a dedicated monoethylene glycol (MEG) import pipeline from ST to the SDB-PR platform.

In addition it is planned to expand ST to provide processing facilities for the SD2 Project. To accommodate the additional sales gas associated with the SD2 Project it is proposed to expand the existing SCP pipeline capacity. The SCP midstream facilities (downstream of ST) are not included in the SD Production Sharing Agreement (PSA) and will be developed and financed separately as the SCP Expansion (SCPx) Project. The SD2 Project includes the design and construction of the export compression, metering and associated utilities for SCPx Project at ST. All other SCPx facilities and activities are excluded from the SD2 Project scope.

Figure 1.2 shows the location of the offshore and onshore SD2 facilities, location of the BDJF and ATA construction yards, the approximate well locations, subsea infrastructure layout and the routing of the subsea SD2 pipelines between the SDB platform complex and ST.

Figure 1.2 Scope of the SD2 Project



To date four environmental permission documents have been submitted to and approved by the Ministry of Ecology and Natural Resources (MENR) to cover early activities:

- NF1 Environmental Technical Note (ETN) – scope included drilling of the NF1 well within the northern flank of SD Contract Area;

- WF1 ETN – scope included drilling of the WF1 well within the western flank of SD Contract Area;
- SD2 Predrilling Project ETN – scope included drilling eight wells (denoted as WF2, WF3, WF4, NF2, NF3, NF4, ES2, and ES3) in the western, northern and eastern flanks of the SD Contract Area;
- SD2 Infrastructure ESIA – scope included:
 - New access road from the Baku-Salyan highway to ST (and associated facilities);
 - Clearance and terracing of the SD2 Expansion Area, located immediately to the west of the existing ST;
 - Construction and fit out of the construction camp and construction facilities;
 - Installation of storm water drainage and surface water/flood protection berms;
 - Installation and operation of a sewage treatment plant; and
 - Levelling of the SD2 Pipeline Landfall Area¹.

Permission has therefore been obtained for drilling ten of the proposed 26 wells and for the preparation works at ST.

The aim of this ESIA is to assess the environmental and socio-economic impacts associated with all remaining onshore, subsea and offshore components of the SD2 Project that have not been assessed to date.

1.4 SD2 Project Environmental and Socio-Economic Impact Assessment

1.4.1 Objectives

The overall objective of the SD2 Project ESIA process is to identify, minimise and effectively manage any potential adverse environmental or socio-economic impacts arising from proposed works.

The purpose of the ESIA is to:

- Ensure that environmental and socio-economic considerations are integrated into project design and operation;
- Ensure that previous experience is acknowledged and where appropriate, integrated into the project design;
- Ensure that environmental and socio-economic impacts are identified, quantified and assessed and appropriate mitigation measures proposed;
- Ensure that a high standard of environmental and socio-economic performance is planned and achieved for the project;
- Ensure that applicable legal, operator and PSA requirements and expectations are addressed;
- Consult with relevant stakeholders throughout the project and address their concerns; and
- Demonstrate that the project will be implemented with due regard to environmental and socio-economic considerations.

Within the impact assessment, activities and potential receptor interactions are evaluated against existing environmental and socio-economic conditions and sensitivities, and the potential impacts are ranked. The assessment of potential impacts takes account of existing and planned controls and monitoring and mitigation measures developed as part of earlier ACG and SD Projects.

¹ The Early Infrastructure Works (EIW) contractor's scope of works has changed following the submission of the SD2 Infrastructure ESIA with a significant number of elements of the works associated with construction of buildings and facilities passed to the main SD2 Project contractor. The works anticipated to be completed by main SD2 Project contractor are described and assessed within this ESIA.

1.4.2 ESIA Team and Structure

The details of the SD2 Project ESIA Team are provided in Table 1.1.

Table 1.1 SD2 Project ESIA Team

Team Member	Role
URS	ESIA Project Manager and Lead Authors
Environmental and Social Advisory Services (ESAS)	Socio-Economic Specialists
The Social Consultancy	
Synergetics	Local Socio-Economic Specialists
ERM	Cultural Heritage
WRA	Hydrology Specialist
Genesis	Offshore Discharge and Oil Spill Modelling
Ilyas Babayev	Bird Specialist
Tariel Eybatov	Caspian Seal Specialist
Alun Lewis	Oil Spill Specialist
Mehman M. Akhundov	Fish Specialist
Peter Ward	Underwater Noise Specialist
KBR and JP Kenney	Project Engineering and Project Management Services Contractors
BP	SD Contract Area PSA Operator on behalf of SD PSA Partners

Table 1.2 provides a summary of the SD2 Project ESIA structure and content.

Table 1.2 Structure and Content of the ESIA

Section/Chapter	Content
Executive Summary	A summary of the ESIA
Units and Abbreviations	A list of the units and abbreviations used in the ESIA.
Glossary	A glossary of terms.
1 Introduction	An overview of SD2 Project, ESIA objectives, details of ESIA team members and ESIA Report structure.
2 Policy, Regulatory and Administrative Framework	A summary of applicable requirements from the SD PSA, ratified international conventions, International Petroleum Industry Standards and Practices, applicable national legislation and guidance, BP's Health Safety Security and Environment (HSSE) Policy and BP Group Define Practice (GDP) and Group Recommended Practice (GRP).
3 Impact Assessment Methodology	A description of the methodology used for the impact assessment.
4 Options Assessed	A description of the alternative concept options assessed for the SD2 Project. A summary of the initiatives and options assessed which aimed to avoid or reduce negative environmental and social impacts.
5 Project Description	A detailed description of the SD2 Project.
6 Environmental Description	A description of onshore, nearshore and offshore environmental conditions.
7 Socio-Economic Description	A description of onshore, nearshore and offshore socio-economic conditions.
8 Consultation and Disclosure	An overview of consultation activities undertaken during the ESIA programme and the issues and concerns raised.
9 Drilling and Completion Environmental Impact Assessment, Monitoring and Mitigation	An assessment of potential environmental impacts associated with drilling and completion SD2 Project activities.
10 Construction, Installation and HUC Environmental Impact Assessment, Monitoring and Mitigation	An assessment of potential environmental impacts associated with onshore, nearshore, subsea and offshore construction, installation and HUC SD2 Project activities.
11 Operations Environmental Impact Assessment, Monitoring and Mitigation	An assessment of potential environmental impacts associated with the operations phase of the SD2 Project.
12 Socio-Economic Impact Assessment, Monitoring and Mitigation	An assessment of potential socio-economic impacts associated with each phase of the SD2 Project activities.
13 Cumulative and Transboundary Impacts and Accidental Events	An assessment of potential cumulative and transboundary impacts and accidental events associated with the SD2 Project activities.
14 Environmental and Social Management	A summary of the environmental and social management system associated with the SD2 Project activities.
15 Residual Impacts and Conclusions	A summary of the residual impacts and conclusions arising from the ESIA process.
Appendices	