

---

# OMAN EXPERIENCE

---



INTERNATIONAL

# OUR CUSTOMERS IN OMAN

ESB International's success is intrinsically linked to the success of our clients – we can only flourish when they do.

Our clients always come first and we build and develop relationships by listening intently to them and developing a genuine understanding of their needs, their ambitions and the markets within which they operate.



الشركة العمانية لنقل الكهرباء ش.م.ع.م  
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C



الشركة العمانية لشراء الطاقة والمياه ش.م.ع.م  
OMAN POWER AND WATER PROCUREMENT CO. (OPWP)

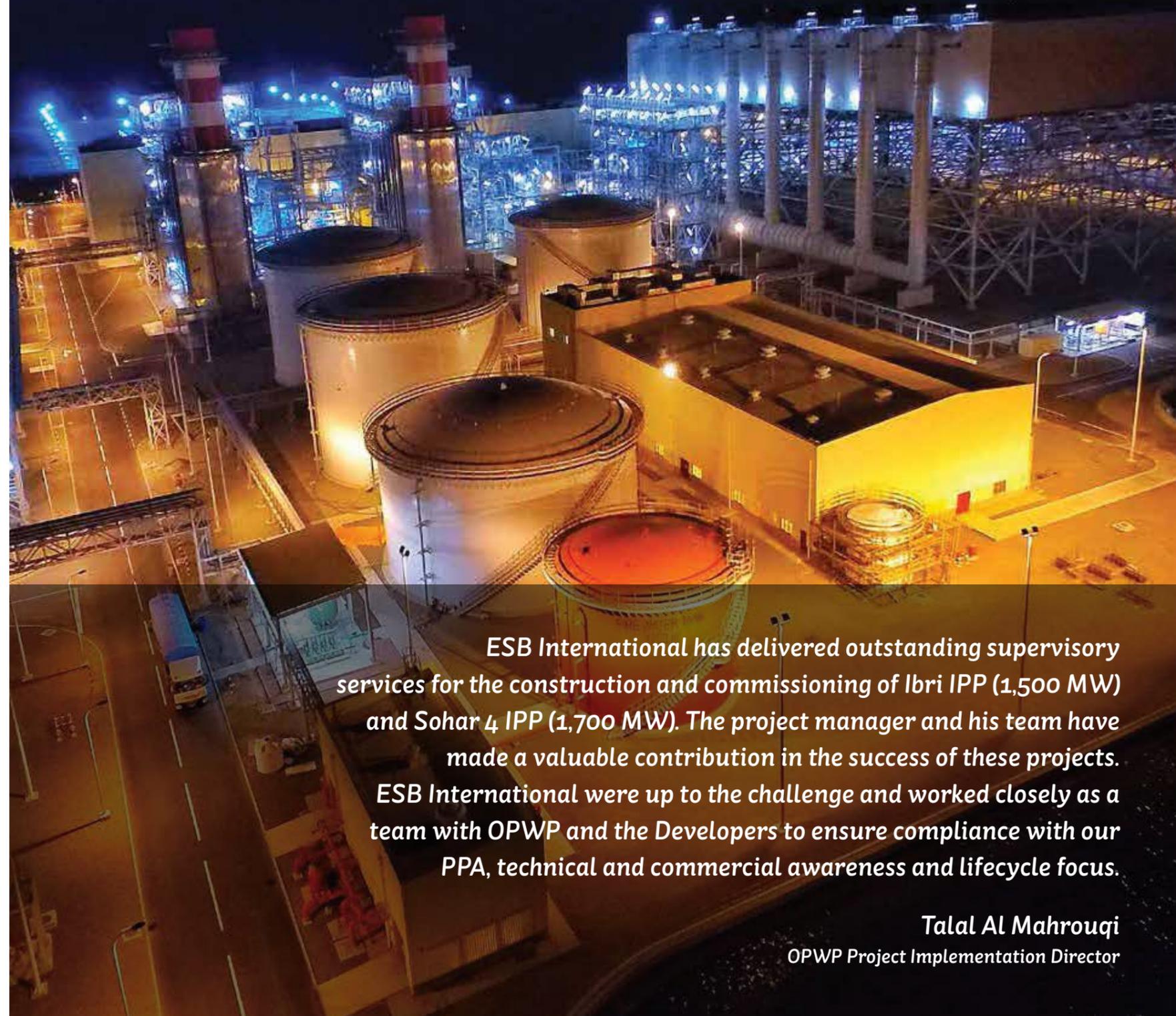


شركة ظفار للطاقة ش.م.ع.م  
Dhofar Power Company S.A.O.C



Overview of some of our clients.

*Proof of our commitment to maintaining exceptional client relationships is that globally some of the clients we partner with today have been with us for over four decades*



*ESB International has delivered outstanding supervisory services for the construction and commissioning of Ibri IPP (1,500 MW) and Sohar 4 IPP (1,700 MW). The project manager and his team have made a valuable contribution in the success of these projects. ESB International were up to the challenge and worked closely as a team with OPWP and the Developers to ensure compliance with our PPA, technical and commercial awareness and lifecycle focus.*

**Talal Al Mahrouqi**  
OPWP Project Implementation Director



# OMAN ENGAGEMENT

ESB International provide consultancy services as a trusted partner to a number of Government Subsidiaries and other clients in the power industry that have complex, challenging and demanding needs in the area of generation, transmission, distribution, supply, regulation and utility strategy.



ESB Internationals unique position as a utility engineering consultancy ensures that we bring knowledge of the full energy value chain and project lifecycle to all of our clients; which is supported and reinforced by our own utilities lessons learned and continuing challenges to meet *Brighter Future* and sustainability goals.



Client: **NAMA**

**Scope 1:** Advisory Services for Privatisation of five Power Sector Subsidiaries

**Scope 2:** Blueprint for Customer Service Improvement across the five Distribution and Supply companies

**Scope 3:** Unbundling of Distribution and Supply in Dhofar Power Company.



Client: **SOHAR**

**Scope:** Long Term Service Agreement Renewal Technical and Commercial Support Services



الشركة العمانية لشراء الطاقة والمياه س.م.ع.م.  
OMAN POWER AND WATER PROCUREMENT CO. (SPOC)

Client: **OPWP**

**Scope:** Supervisory Consultant Execution Phase Ibri and Sohar IPP's approx. 3.2 GW CCGT Generation



Client: **RAECO / TANWEER**

**Scope:** SCADA Systems strategic review and future proofing Master Plan



الشركة العمانية لنقل الكهرباء س.م.ع.م.  
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C

Client: **OETC**

**Scope 1:** Consultancy Services for Meeting OETC Obligations after Introduction of Spot Market and Renewable Energy Sources

**Scope 2:** Review of System Safety Rules

CASE STUDIES TO JUDGE US ON



# OPWP SUPERVISORY CONSULTANT IBRI & SOHAR IPPS

ESB International Contracted with OPWP to supervise the execution phase of Oman's largest Independent Power Plants; Ibri IPP and Sohar IPP



## THE SCOPE:

- Supervision of Developers compliance with the Power Purchase Agreement and Minimum Functional Specifications
- Oversight in line with Omani Standards, International Standards and Best Practice
- Project Progress Reporting and Delay Risk analysis (Safety, Environmental, Quality, Functionality, Project Schedule, PPA Compliance)
- Assist in facilitating coordination with LTSO/Gas Company
- Identification and pro-active management of potential Buyer's Risk Events
- Agree and witness plant acceptance tests in cold and hot commissioning phases; sign off on acceptance of these tests
- Verification that the Developer is commissioning and testing the Plant in a safe manner in accordance with Good Practice and the Law
- Provide on the job training for Clients Personnel where required

## IBRI IPP:

Guaranteed Capacity Fuel Gas:	1,509 MW
Guaranteed Capacity Fuel Oil:	1,419 MW
Gas Turbine x 4	GE / Ansaldo GT26; 280 MW 35degC, Air Cooled
Gas Turbine Generator x 4	GE / Ansaldo 50WY23Z-124, 400 MVA, Air Cooled
Steam Turbine x 2	GE / Ansaldo STF30C; 283 MW, Direct Air Cooled Condenser
Steam Turbine Generator x 2	GE / Ansaldo 50WT21H-120, 440 MVA, H2 Cooled
HRSG x 4	Nooter Eriksen; Horizontal; 3-stage Drum
Control Systems	Alstom Controgas / Controsteam, Emerson DCS

## SOHAR IPP:

Guaranteed Capacity Fuel Gas:	1,710 MW
Guaranteed Capacity Fuel Oil:	1,499 MW
Gas Turbine x 4	GE / Ansaldo GT26; 290 MW 35degC, Water Cooled
Gas Turbine Generator x 4	GE / Ansaldo 50WY23Z-124, 380 MVA, Air Cooled
Steam Turbine x 2	GE / Ansaldo STF30C; 326 MW, Sea Water Cooled; Induced Draught Cooling Towers
Steam Turbine Generator x 2	GE / Ansaldo 50WT21H-120, 440 MVA, H2 Cooled
HRSG x 4	Nooter Eriksen; Horizontal; 3-stage Drum
Control Systems	Alstom Controgas / Controsteam, Emerson DCS

CASE STUDIES TO JUDGE US ON



# PRIVATISATION OF SUBSIDIARIES ELECTRIC HOLDING COMPANY

Client: SAOC  
 Dates: February 2018 - Ongoing  
 Project Type: Advisory Services



ESB International were subcontracted by London Economics to conduct extensive Vendor Due Diligence of five subsidiary utilities of Nama Holding SAOC in Oman in view of partial privatisations. In relation to Distribution, Supply, Human Resources and Environment status and performance in the subsidiaries.

Omani state company Nama Holding (formerly Electricity Holding Company SAOC), owns ten subsidiary companies (subcos) involved in the generation, transmission, supply and distribution of electricity. In 2017 the Government of Oman decided to pursue partial privatisations of up to five of the subcos: grid company OETC and four of the five Distribution & Supply companies (discos).

ESB International joined with London Economics as subcontractors (along with others) to respond to Nama's tender for the required Privatisation support. The main consortium is London Economics and Lazard frères (bankers), who signed directly with Nama. All subcontractors, including ESB International, are directly with London Economics.

Since 2018, our core input is strategic (undertake vendor's due diligence of Transmission/ Distribution, Supply, Human Resources and Environment functions). Further subcontractors involved in due diligence and sale preparations are Ernst & Young, Herbert Smith Freehills international lawyers, and local law specialists Al Busaidy, Mansoor Jamal & Co.

## SERVICES WE PROVIDED

- > Participation with the rest of Consultant team in the detailed Inception phase, in Oman, culminating in 'Options' Report to Nama Holding on the options for the proposed sales.
- > Due diligence of review reporting - Transmission/ Distribution, Supply, Human Resources and Environmental area, in the five subsidiaries.
- > Assessments on site with each subsidiary.
- > Separate ESB International team for each area of due diligence reporting.
- > Obtain and review enormous data on current status, recent history, plans and programmes in relation to operations, people, projects, expenditure and performance.
- > For example, for the gridco (OETC) the technical due diligence examined:
  - > Power sector context
  - > System operation and network performance
  - > Grid planning, access & connection
  - > Asset management and projects/ project management
- > Assist with population of virtual Data Room for bidders'.
- > Assist development of technical and strategic evaluation criteria for bidders' submissions.
- > Provide technical and strategic critique of bidders' submissions at Expression of Interest, Non-Binding Offer, and Binding Offer stages.

CASE STUDIES TO JUDGE US ON



# INTRODUCTION TO SPOT MARKET & RENEWABLE ENERGY

Client: OTEC Oman Electricity Transmission Company

Dates: February 2018 - 2021

Project Type: Consultancy Services



OETC commissioned ESB International to address the fundamental question of how its systems Scheduling and Dispatch Process, procedures and operational practices should evolve specifically to meet its obligations following the commencement of Spot Market and Renewable Energy Sources.

Oman Electricity Transmission Company (OETC), established by Royal Decree 78/2004 and amended by Royal Decrees 59/2009 and 47/2013 was granted responsibility for the safe, secure and reliable transmission of electricity from the producers to the distribution networks and directly (transmission) connected customers.

As the development of the energy Spot Market moves ahead at pace in Oman the combination of technologies, fuel sources and networks are developing into an ever more complex arrangement. All systems, procedures and operational practices need to evolve to ensure they continue accommodating Oman Spot Market and other developments in a secure and economically efficient manner.

ESB International were able to utilise their knowledge and experience gained from similar projects around the world to help OETC transition from operating in a market of PPA (Power Purchase agreements) to a SPOT Market, including the trading of Ancillary Services and the introduction of Renewable Energy Sources.

## SERVICES WE PROVIDED

- > Assess Oman Spot Market rules, existing and planned OETC S&D process. Procedures and tools, data obligations and congestion management.
- > Assess the existing agreements in place among OETC, OPWP, AER, IPPs and other market players with regards to OETC core role as TSO.
- > Review of the Grid Code (GC) and advise of the potential changes required in OETC S&D process as well as GC due to Spot Market.
- > Identify the anticipated data exchanges e.g. availability declaration, bid and offer, instructions between OETC and stakeholders. Draw strategy on the optimum mechanism to exchange the data.
- > Review existing OETC Ancillary Services handling setup. Draw optimum strategy for handling the Ancillary Services and operating practices in the light of the Spot Market (including MVAR, Reserves, Black Start, primary & secondary response, outage management and congestion management).
- > Identify the requirements for new IT, SCADA modifications, Security constrained unit commitment, Electronic Dispatch Loggers. Complete design, tendering, testing and commissioning of the new IT infrastructure.
- > Full project management.

CASE STUDIES TO JUDGE US ON



# TANWEER/RAECO 10 YEAR STRATEGIC SCADA MASTERPLAN

Client: Tanweer / RAECO

Dates: April - October 2018

Project Type: Consultancy Services



Tanweer selected ESB International to modernise their control operations and create a ten year Masterplan to develop their SCADA systems. This included examining options to merge their four separate control centres located in various regions throughout Oman

ESB International were contracted by Tanweer to provide consultancy services to design how to develop their SCADA and EMS systems.

Since 2019, ESB International have been conducting site surveys, performing gap analysis and identifying various short, medium and long term initiatives for Tanweer to grow over ten years.

On the back of the initiatives identified, ESB International produced a cost benefit analysis/ feasibility study where Tanweer could secure funding from the Regulator to implement the initiatives. ESB International designed and proposed the HR structure for the SCADA and control centre for the next decade.

Key to Tanweer developing as a utility was to identify possible options to merge several of Tanweer's existing control centres and make a recommendations.

## SERVICES WE PROVIDED

- > Overall Project Management, Health & Safety Compliance Enforcement.
- > Strategic master plan.
- > Proposal for new organisation chart.
- > Preparing and Issuing Reports as per clients requirements.
- > 24 Business initiatives & updating and creating Standard Operating Procedures.
- > Control Centre organisation along with SCADA and EMS requirements.



---

# WE SHOULD BE TALKING TO EACH OTHER

To discuss your needs, please get in touch with  
ESB International at the contact points below.

**ESB INTERNATIONAL**  
One Dublin Airport Central  
Dublin Airport  
Cloghran  
County Dublin  
Ireland  
K67 XF72

Tel +353 (0) 1 703 8000  
Fax +353 (0) 1 703 8088  
Email [marketing@esbi.ie](mailto:marketing@esbi.ie)  
Web [www.esbinternational.ie](http://www.esbinternational.ie)