



INTERNATIONAL

Utility to Utility

Energy Engineering • It's in our DNA



Utility to Utility • Power Generation • Transmission & Distribution • Strategic Advisory • Specialist Services



Welcome

ESB International works in close association with power industry clients around the world to deliver reliable, secure and efficient utility services.

ESB International, which is wholly owned by Electricity Supply Board (ESB), is a leading engineering consultancy firm to the global utility sector. We are headquartered in Dublin, Ireland, with a central hub in the Kingdom of Bahrain and have operations in Europe, the Middle East, Africa and South East Asia. We have a fully-integrated structure with a team of 7,500+ experts.

We work in partnership with asset owners to deliver large-scale capital intensive projects, using a proprietary project delivery methodology to minimise project risk and maximise investor returns.

In all our markets, we are faced with strategic challenges that affect millions of people – and our solutions help to transform economies, societies, and the lives of individuals and communities.

Our success is built solidly on our experience in delivering electricity to our own country, resulting in a social and economic revolution over many decades.

ESB has brought electricity to Ireland's major towns and cities; a Rural Electrification Scheme brought the transformative power of electricity to even the most remote corners of the country.

We have drawn on this experience in over 120 countries around the world, offering not just technical expertise but also the leadership and personal commitment to succeed in some of the most demanding economies and geographical regions around the globe.

We would be delighted to share our Utility expertise with you, and we assure you of our unstinting support throughout whatever journey you may now be embarking on.

Experience from our own national electricity network

ESB International's deep-rooted utility background gives us a unique and practical insight into the commercial, environmental and operational challenges facing power asset owners and investors.

Our utility expertise has been amassed through decades of work as the centre of engineering excellence for our parent company. ESB implemented rural electrification in Ireland from the 1940s to the 1970s. Since then, ESB has responded to the demands of the industry and society to develop into one of the world's leading power utilities.

Between 2000 and 2012, ESB invested €7 billion on its networks infrastructure – the largest expenditure of any electricity distribution company in Europe – and now has one of the most modern and robust electricity networks in the world. ESB is recognised by the International Energy Agency as being a “world leader in smart networks” and was awarded “Exemplar International Utility” by IBM in 2013.

ESB has also undergone very significant change in recent years in response to full market deregulation. ESB's journey for change was driven by the vision of our board and management in response to a changing environment and guided by European Directives and the necessity to deliver an efficient electricity sector. Between 1999 and 2012, ESB oversaw the unbundling of networks and the establishment of an independent TSO (transmission system operator), deregulation of pricing, new market structures and the introduction of full competition in generation and retail.





Utility to Utility services in greater detail

ESB International has a proven track record in international utility management projects. Our integrated solutions are underpinned by a comprehensive range of services that are delivered by a multi-disciplinary team of engineering, regulatory and commercial specialists, all with a power utility background.

Generation, transmission & distribution utilities

Institutional strengthening of generation, transmission and distribution utilities



Change management

Utility change management as part of utility reforms, unbundling and energy sector improvements



Business efficiency improvements

Utility planning and business efficiency improvements



Renewable energy

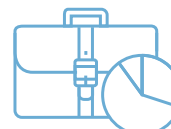


Detailed technical analysis for energy efficiency, renewable energy, loss reduction



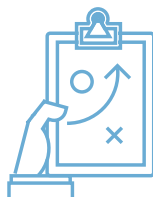
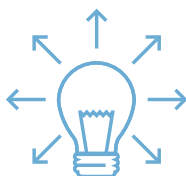
Business systems audits

Efficiency and business systems audits



Skills transfer

Skills transfer, training and capacity building



Re-organising

Re-organising and right sizing



Customer relationship management

Financial analysis

Techno-economic and financial analysis



International experience in utility management contracts

For over four decades, our company has worked in 120 countries around the globe – on behalf of utilities, private developers, regulators, governments, funding agencies and banks.

During those four decades, ESB International has established a well-deserved reputation for understanding the needs of developing countries, delivering cost-effective services and solutions, ensuring the successful transfer of technology and know-how, and for being a trusted partner for our clients. Proof of the relationships of trust that we build is the fact that many of our clients have been with us for several decades.

Over recent years, “turnaround” management contracts have been used in the transmission and distribution sectors, and to transform vertically integrated utilities. They are acknowledged as an effective way of improving the organisation and the operations of non-performing companies and developing local management teams to ensure improvements are sustained.

ESB International has undertaken ‘turnaround’ management contracts in a wide variety of locations, including Georgia, Kosovo, Sierra Leone, Liberia and Guyana.

Management contracts are also used in “start-up” situations where a restructured electricity industry requires new entities to take over new functions – or those previously carried out by others. Examples are system and market operations and transmission administration. ESB International’s experience in this arena includes projects in Canada and the USA.



Specialist utility consultancy services

ESB International provides specific consultancy services to the power utility business. This includes technical, engineering, financial, strategic and management consulting services across all areas of a utility's operation – from power generation to transmission & distribution and customer supply.

We undertake operational reviews of utility companies and provide strategic, technical, engineering and financial advice. We also recommend future actions and investments required to transform companies into modern and efficient utilities.

In the 1990s, ESB International advised several central and eastern European governments and utilities ahead of the privatisation of their electricity markets, including Bulgaria, Poland, Romania and Ukraine.

We have also been the resident consultant to the Electricity and Water Authority of Bahrain (EWA) since 1976 and recently advised the Kingdom of Bahrain on the corporatisation of EWA. In 2015, ESB International provided technical advice to the IFC on the corporatisation of YESB, the government-owned distribution company in Myanmar.

ESB International draws on expertise from our parent company, ESB, to provide consultancy services across the full spectrum of utility operations, as well as related training and capacity building. Some recent examples include engineering and management system audits, safety system reviews, and customer service improvement programmes for clients in Malaysia, Oman, Ghana, Solarwadi and Tanzania.

As part of our utility management services, ESB International also provides full Operation and Maintenance (O&M) services to power plants, operating them to best international practice. We have provided long-term O&M contracts in Ghana, Pakistan, Malaysia, Turkey and the United Kingdom, among others.

Our consultancy services



Technical



Engineering



Financial



Strategic



Management





— A case study to judge us on



Rebuilding a War-torn Utility

(Lighting up Liberia for Liberians by Liberians)

Liberia is a country that was devastated by over 20 years of civil war, which claimed the lives and limbs of thousands and robbed Liberia of vital infrastructure and human capacity. The destruction led to extreme poverty, with over half of Liberians living below the poverty line.

The national utility, the Liberia Electricity Corporation (LEC), started to rebuild its entire generating and network capacity but was heavily reliant on donor funding and was experiencing excessively high commercial losses. The state brought in ESB International to manage its transition into a functioning utility.

Client Name	Liberia Electricity Corporation
Start Date – End Date	2018 - 2022
Duration of Assignment	4.5 years

Background

In 2018 ESB International was appointed by the Board of LEC as Management Services Contractor, tasked with managing the utility and bridging the immediate capacity gap, developing local capacity to assume control, modernising management systems, improving transparency, accountability, governance, and oversight, growing both network and customer base, improving system/network and commercial performance and moving LEC towards commerciality.

What we achieved

Despite the obvious challenges facing LEC and the unforeseen impact of Covid 19, ESB International achieved remarkable results, including:

- Overhaul of LEC's organisation and management structure, making it fit for purpose.
- Implementing Modern IT systems and Integrated Management System
- Developing a Board approved and Donor / Government endorsed 5-year Business Plan
- Delivering a US\$220m major transmission and distribution grid expansion programme
- Enhancing customer service through Community outreach, 24/7 call centre, accessible website
- Improving system continuity by over 50%
- Reducing the cost of generation by 14%
- Reducing commercial losses by 11.5%
- Seamlessly transitioning from ESB International to Liberian management

This was achieved while fully involving local LEC staff, ensuring maximum knowledge transfer, and developing real ownership, ultimately providing a smooth transition to Liberian management (Liberia for Liberians).

Benefits to the Infrastructure & Economy

A capable, engaged Liberian management team is in place.

750,000 Liberian mothers, fathers, children, schools, hospitals, clinics, and businesses with access to grid electricity.

National grid expanded by ~300% and reinforced to cater for future accelerated growth and expansion.

Access to the regional energy markets through the CLSG.

A robust inclusive Business Plan with a clear vision is in place.



— A case study to judge us on



Solarwadi 200 MW PV Oman

ESB International is appointed as consultant to a project in development in Oman by the National Energy Center LLC (NEC) and their partners Solar Wadi LLC (Solarwadi). The project involves the development of a solar photovoltaic power (PV-power) of scale Project at Sohar Industrial Estate (SIE) and the development of a new utility to manage, own and operate all the assets, including both existing distribution assets and new Solar PV assets.

Client Name	LLC OMAN (NEC)
Start Date – End Date	2021 - Ongoing

Background

NEC, the National Energy Center, Oman, in cooperation with renewable energy company, Solarwadi, are developing a renewable energy project at Sohar Industrial estate in Oman.

The project involves the development of over 200 MW of solar power adjacent to the Sohar industrial estate, which will be used to supply tenants of the park. Along with the distribution of solar energy to Sohar Industrial Park, the project requires the formation of a new utility to own, operate and manage the existing electrical distribution assets in Sohar Industrial Estate.

ESB International was appointed consultant due to having a proven record of accomplishment as the national utility in Ireland and extensive experience managing and operating an independent utility at Kulim Hi-Tech Park for over 20 years.

Expertise being provided

Technical and commercial due diligence and valuation of the assets.

Connection points of the solar energy to the park infrastructure.

Connection points between the existing utility and the new utility.

The necessary metering arrangements.

The necessary operational protection arrangements.

Additional capital works required to facilitate integration of the solar energy to the network.

Utility structure in terms of expertise and personnel.

Tooling and equipment.

Personnel training / competency requirements.



— A case study to judge us on



Kulim Hi-Tech Park Operation, Maintenance & Management Project

Kulim Hi-Tech Park was the first independent utility in Malaysia. Located in the state of Kedah in Northern Malaysia, it provides quality high-quality electrical power and service to its demanding industrial customers, including some of the world's most advanced electronics and chip manufacturers.

Client Name	Northern Utility Resources (NUR)
Start Date – End Date	1998 - 2017
Duration of Assignment	19 Years

Background

Northern Utility Resources were awarded licences to generate and distribute electricity as a utility with the Kulim Hi-Tech Park. ESB International was appointed as consultant to operate, maintain and manage the utility. The assets and activities under ESB International supervision and control included:

- 220 MW CCGT on-site generation facility, including overhaul management
- Transmission and distribution asset operation and management
- Metering, billing, and collection
- Procurement
- Safety performance
- New connections
- Network development

What we achieved

ESB International mobilised to this project during the construction and commissioning phase, thus lending invaluable insights to the operability of the assets based on its experience as a utility. We provided a team of experienced utility professionals to recruit, lead and develop a team capable of operating the assets to the highest international standards. We developed a strong safety-first culture within the Kulim team, evidenced by a ten-year, non-lost time accident record.

During ESB Internationals management

Customer number grew from 50 to 4,500.

Unit electricity sales increased from 378 GWh to 1,448 GWh.

Excellent billing and cash collection performance was established.

Power reliability for customers 99.999-100% was the norm.

No lost time accidents in over a 10-year period.

We should be talking to each other

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

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