

# IRISH EYES SMILE ON ESS

HANWHA ENERGY, THE INTERNATIONAL ENERGY DEVELOPMENT ARM OF THE HANWHA GROUP FOR DEVELOPMENT OF ENERGY PROJECTS ACROSS THE WORLD, HAS ACHIEVED FINANCIAL CLOSE FOR A 2X100MW ENERGY STORAGE SYSTEM PROJECT AT SHANNONBRIGE AND LUMCLOON, IRELAND. BY **PRAVEEN UMREDKAR**, DIRECTOR, **HYOJUNG JUNG**, DIRECTOR, AND **SHIVAM AGARAWAL**, SENIOR ASSOCIATE, **SYNERGY CONSULTING**.

The Export-Import Bank of Korea (K-Exim) has acted as the lead arranger and provided the required debt financing for the project. Hanwha Energy was supported by Synergy Consulting as the financial adviser. Kim & Chang was Hanwha Energy's legal adviser for the project. Lenders were supported by WSP (LTA), Arthur Cox (LLA), AFRY, lenders market adviser, PwC, model auditor and AJ Gallagher (LIA).

## Ireland's DS3 Programme

Ireland is rapidly increasing its share of renewable energy, mainly, its wind power generation, which has increased from 16% in 2010 to 38% in June 2020. Ireland, under its Renewable Electricity Support Scheme (RESS), aims to increase its share of renewable energy capacity to 70% by 2030.

Increasing renewable power generation caused grid stability issues as these units irregularly alternate between ramping up and down the installed capacity. Grid stability has been maintained at the cost of events of wind farm curtailment. To maintain grid stability with numerous non-synchronous electricity generators more efficiently, EirGrid, the Irish Transmission

System Operator, seeks frequency response services using the Energy Storage System (ESS) under the DS3 Delivering a Secure, Sustainable Electricity System Programme. Similar ancillary service projects are successfully implemented in larger TSO systems such as PJM (USA) and National Grid (UK)

The DS3 Programme was launched in August 2011 by Ireland to meet the challenges of operating the electricity system in a secured manner with increasing levels of variable non-synchronous renewable generation. DS3 System Services refer to ancillary services of the Irish Single Electricity Market wherein two types of contracts are offered – volume uncapped (VU) regulated arrangements and a volume capped (VC) arrangement – and Hanwha Energy is pursuing VU-regulated arrangements for the project. Under this arrangement, the project will provide specific system services by responding to EirGrid's request on a real-time basis.

## Investment rationale

- *Irish renewables market growth* – Ireland is committed to achieving an ambitious renewables energy capacity target of 70% by 2030. Given



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that a large part of this target would be achieved with commissioning of solar PV and wind power plants, demand for frequency response services for grid stabilisation is expected to increase substantially. By being a part of this opportunity by providing system services under DS3 Regulated Arrangement, sponsors wish to continue their efforts related to environmentally sustainable business.

- *Creditworthy offtaker* – EirGrid would be responsible for remuneration to the project company for the system services. EirGrid is an Irish state-owned entity with majority shares being held by the Ministry for Public Expenditure and Reform. Considering the high investment-grade sovereign credit of Ireland (A2 by Moody's, AA- by S&P and A+ by Fitch), risk of non-payment of undisputed invoiced amounts is minimal.

- *Multiple areas to create value* – Sponsors are targeting only the Volume Uncapped Regulated Arrangement. Once the VU Regulated Arrangement ends, the projects can utilise other options for supplying their services to EirGrid. These markets are well structured and there is a mature auction market. Volume capped arrangements (also known as fixed contracts) are auction-based (prices fixed for the duration of the contract) and the service volume capped remuneration arrangement is for six years.

### Project description

The project comprises greenfield development of two battery energy storage system (BESS) assets, each being a 100MW BESS project, one at Lumcloon and one at Shannonbridge in County Offaly, Ireland. The project is being developed to provide frequency response services to EirGrid for ensuring grid stability with numerous non-synchronous electricity generators under the VU Regulated Arrangements within Ireland's DS3 Delivering a Secure, Sustainable Electricity System Programme. By addressing grid stability challenges due to the connection of multiple non-synchronous renewable energy power plants, this project plays a crucial role in enabling Ireland to achieve its renewable energy target.

HEC Europe, a subsidiary of Hanwha Energy Corporation, the international arm of Hanwha Group for development of energy projects across the world, owns a stake of 80% in the project companies while the remaining 20% is owned by local partner Javah Energy Holdings Ltd. Hanwha Energy is responsible for EPC, and operation and maintenance (O&M), with South Korean companies supplying key equipment for the project. Commercial operation is expected in 2021.

EirGrid would be the concession grantor for the project and remunerate the special purpose vehicles (SPVs) for the frequency response services. The DS3 concession agreements with EirGrid would be signed upon successful

completion of acceptance testing of the plants. The base DS3 concession agreement will be valid till April 2023. EirGrid retains the option for extending the contract twice for 18-month periods. Post the expiry of the concession agreement with DS3, the SPV would be earning revenues through operating in the free/merchant market.

The tariff structure for the project will be based on available capacity (MW) and timely response to dispatch order. Tariffs under the volume uncapped structure have two parts:

- *Base tariff* – Proceeds calculated per MW of capacity made available.
- *Other scalar tariffs* – Scalars for each system services in particular are designed to incentivise provision of system services when the need is at its peak. These system services tariffs are approved by regulatory agency.

### Financing concerns

Achieving financial close on this project was no mean feat given the contractual structure. It presented some unique financing challenges to the project, which is among the first set of BESS projects in Ireland under this regime. Some of the key challenges are as follows:

- *No concession agreement in place at financial close* – A concession agreement would be signed only after plant acceptance testing was completed successfully. This implied that there would be no concession agreement in place during the construction period. Thus, it was difficult for lenders to derive comfort from a concession agreement with the offtaker that was already in place prior to debt disbursement.
- *Short-term concession period* – The concession tenure was very short, with a fixed date of expiry of April 2023. EirGrid retained the sole right to extend the contract, for a maximum two times. The SPVs would have to rely on the merchant market once the concession period with EirGrid expired. Thus, the project revenues were subject to significant market risk starting from just two years after COD.
- *Market risk during concession period* – Even during the initial concession period, EirGrid has the right to review and revise the tariff in case their internal metrics warrant such a revision. Lenders viewed this as an uncertainty on project revenues even during the concession period and thus a risk to the debt servicing capability of the project.
- *Termination right with offtaker* – EirGrid had the contractual right to terminate the contract for convenience (albeit with notice) with no protection being given to lenders for the outstanding debt amount.

The above-listed challenges severely limited lenders interest in the transaction which resulted in a restricted debt liquidity pool available to fund the transaction.

Construction was initiated by HEC while the financing was being arranged simultaneously. Sponsors funded the construction cost via

equity infusion until the financing was arranged. The nature of the project (BESS) warranted a relatively shorter construction period and thus there was limited time to arrange debt financing.

Any delay in arranging debt financing could potentially result in construction delays as equity infusion was to be limited at certain level. Further, as per the procurement structure, concessions were only offered two times a year. Thus, missing the deadline for commercial operations date (COD) would result in a six-month revenue loss that could prove detrimental to both HEC and lenders.

Given the potential impact on construction timelines, arranging financing was the critical path workstream. The timeframe available to HEC and Synergy for the same was very limited given the financing challenges posed by the contractual structure.

### Successful financing

HEC and Synergy conducted detailed focus sessions with potential lenders for structuring a credit support package that would be acceptable to lenders while limiting equity exposure to HEC. The negotiation meetings with the lenders were constrained heavily by the travel restrictions imposed due to Covid-19. Key focus areas that helped in achieving the milestone amid the constraints and challenges imposed by lockdown were:

- *Swift and agile management* – Processes and protocols were quickly put in place to overcome any issues due to travel restrictions and lockdowns. Management decisions were taken in a proactive manner with a well thought-out plan, action items and strategy for next steps put in place and communicated to all stakeholders.
- *Diligence* – Round the clock availability of team members helped in the timely resolution

of any outstanding issues, and decisions on critical path items were arrived at without any delays, which in-turn helped in avoiding any bottle-neck and provided further impetus to the process.

- *Technology* – Technology and remote working tools such as conference calls were extensively used. All commercial negotiations with lenders, documentation and finally signing were successfully undertaken in a timely manner.

### End note

This project is a landmark transaction as it is one of the few BESS projects worldwide that have been financed on a limited recourse basis. Further, the team achieved the primary target of arranging financing within stringent timelines as financing documentation was finalised in a commendable time of seven months from start of engagement.

K-Exim acted as the lead arranger and provided the required debt financing for the project. Financial close was achieved at the end of October 2020. With this project K-Exim has expanded its financial support for green energy businesses and continues cooperating with private energy businesses, and the project will be the first ESS project with K-Exim financing.

The project is currently in advanced stages of construction and commercial operation is expected to commence in 2021. Once operational, the project will provide essential ancillary services to EirGrid, thus helping Ireland in achieving its renewable energy targets. This deal set a standard of coordination among various stakeholders in these challenging times and provides a glimpse of future PPP projects' development, whereby all the approvals, discussions, negotiations, execution and closing may happen remotely as well with parties residing in different parts of the world. ■



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