



# GE VERNOVA

## **Consultation on the ASTI ODI Penalty Exemption Period request for EGL 1**

**GE Vernova  
Grid Solutions  
Grid Systems Integration**

## Consultation on the ASTI ODI Penalty Exemption Period request for EGL 1 Response – GE Vernova – UK Grid Solutions Ltd

GE Vernova is of a mind to offer a response to OFGEM on the EGL1 delay event supporting the “unavailability of equipment or capacity in the supply chain”.

During 2022 and 2023 there was an increased global activity for HVDC products and services. This Global demand on the supply chain was heightened by the TenneT HVDC Frame agreement, by which TenneT secured the capacity for **15** HVDC 2GW 525kV systems with a targeted delivery of 2028 onwards.

Figure 1 indicates the Global market growth as seen from GE Vernova’s perspective. It should be noted that the step change in the market from 2022 and 2023 is due to commitments made in the market to secure in service dates before 2030.

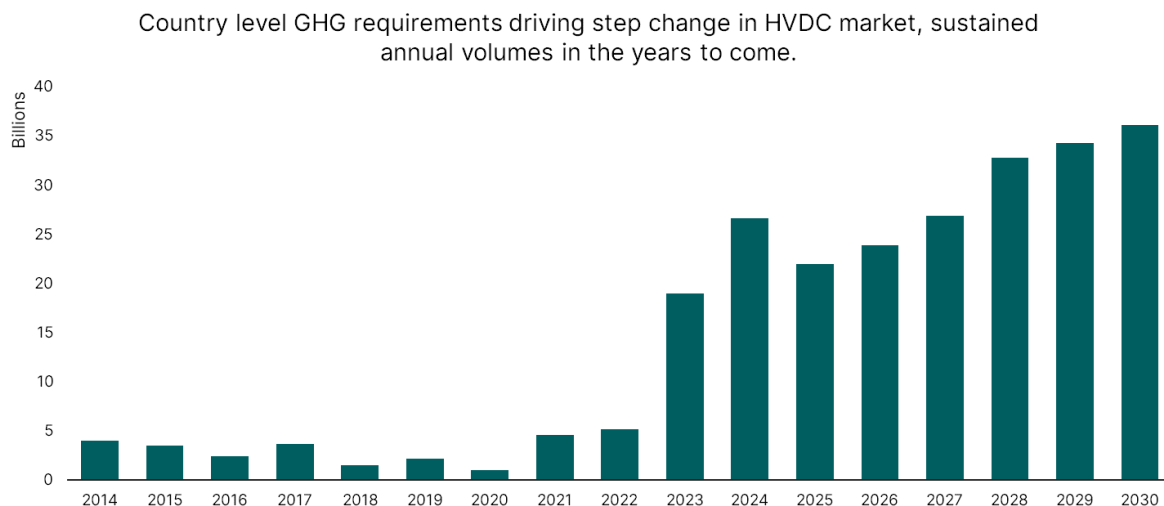


Figure 1 – GEV perspective on the market growth

GE Vernova secured 5 x 2GW 525kV systems with the first delivery in 2028, absorbing a significant proportion of our current capacity both in manufacturing, supply chain and resources. We are currently extending our capacity, but this additional capacity won't be available on time for the EGL1 project.

One of the critical components in HVDC is the converter transformer. These transformers are engineered and manufactured in our Stafford factory, the manufacturing slots for transformers are allocated against client commitments and in 2022/23 many units were allocated for deliveries in 2028 and 2029.

Power Electronics and the components within are in high demand globally, for example IGBT, PCB, Capacitors etc. These components are not only used in the Energy Transmission environment but also in the wider Energy market and industry, which is driving the high demand and extended lead times on global projects (up to 15-18 months)

Having experienced resources and having them available at the right time is also critical for HVDC projects' success. These key resources are generally needed at the beginning of the project to carry out the HVDC system studies that will permit defining the critical parameters

and equipment specifications. These resources are very specialized and fully dedicated to our industry. They require extensive training and experience and are as well in global demand.

At the time of the proposal submitted to the EGL1 JV we considered the following in our planning:

1. Manufacturing Capacity and slot availability based on our capacity at that time with our in-house factories and those of our supply chain.
2. Resource availability, not only in the UK but from our global centres
3. Key milestones in the schedule – site access, availability of data etc.

The proposed schedule submitted to EGL1 under the procurement event considers the above criteria and our ability to meet key milestones including the full energization of the link. Changes were made to the schedule during the procurement event as part of evolution of our final submission. Our final schedule submission fundamentally was built on our ability to deliver based on the criteria itemised above.

Therefore, based on all criteria above and the project, market and supply chain constraints prevailing at that time, we were confident that the date of 2029 was appropriate. Combined with GEV's other committed and active projects, it was unfortunately not realistic to offer to EGL1 a delivery date in 2028.

At the time of EGL1 there were several parallel procurement events and awards taking place globally (Figure 2) requiring the same allocation of resources and delivery commitments. As GEV we are very selective to which projects we support and follow and even though we didn't follow all opportunities we did support several in parallel to EGL1.

**Figure 2**

<b>2022</b>
Celtic Interconnector (Ireland-France)
EuroAsia Interconnector Phase 1 (Cyprus-Greece)
Germany-UK NeuConnect
Hornsea3 (Links 1 & 2) HVDC Tech
NOR-3-2 DolWin4 (Amprion) HVDC Tech
NOR-6-3 BorWin4 (Amprion) HVDC Tech
NOR-7-2 BorWin6 (TenneT) HVDC Tech
SudLink-DC4 (TenneT-Transnet) Wilster-Bergrheinfeld
<b>2023</b>
Biscay Gulf (INELFE 2) - (Gatica ES - Cubnezais FR) (2 X 1,000 MW links) EPC scope
Biscay Gulf (INELFE 2) - (Gatica ES - Cubnezais FR) (2 X 1,000 MW links) HVDC Tech
DC20 SudOst-Link+ (50Hz-TenneT)
Ijmuiden Alpha (TenneT) HVDC Tech
Ijmuiden Beta (TenneT) HVDC Tech
Ijmuiden Gamma (TenneT) HVDC Tech
Nerderwiek 1 (TenneT) HVDC Tech
NOR-10-1 BalWin 2 (Amprion) HVDC Tech (Awarded as LanWin3)
NOR-12-1 LanWin1 (TenneT) HVDC Tech
NOR-12-2 LanWin2 (TenneT) HVDC Tech HUB
NOR-9-1 BalWin 1 (Amprion) HVDC Tech (Awarded as LanWin1)
NOR-9-2 BalWin 3 (TenneT) HVDC Tech
NOR-9-3 BalWin 4 (TenneT) HVDC Tech
Scotland Pathway 1 (Spittal to Peterhead)
Scotland Pathway 2 (Arnish to Beaulay)
Tyrrhenian Link East (Terna) HVDC Tech
Tyrrhenian Link West (Terna) HVDC Tech

**Figure 2** The above represents the HVDC projects that were being procured in parallel to EGL 1.

In conclusion, at the time EGL1 was able to commit to GEV, the most optimized delivery date GEV was able to propose, taking into consideration all criteria and constraints identified in this document, was in 2029.