

Title: Google response to the Consultation on updated guidelines for the exercise of system responsibility and NVF revision

Date: Aug 14, 2026

Addressed to: Statnett

Google welcomes the opportunity to submit its response to Statnett's consultation on the proposed updates to the Guidelines for the Exercise of System Responsibility (Forslag til oppdaterte retningslinjer for utøvelsen av systemansvaret) and the associated National Guide for Functional Requirements (Høringsdokument for oppdatering av NVF). We fully acknowledge and support Statnett's objective to mitigate operational risks and maintain grid security and stability in an increasingly electrified synchronous system

Having reviewed both the proposed technical requirements in the NVF for consumption facilities with a maximum import capacity (P_{max-C}) equal to or greater than 30 MW, and the proposed planning of power regulation under FOS § 8b for large end-users with an output over 15 MW or an annual consumption exceeding 100 GWh (specifically regarding mandatory consumption plans and the gradual change in consumption), we wish to provide constructive, technical feedback. Our proposed adjustments aim to address the physical realities of the grid while ensuring that these new connection and operational standards remain technically and practically feasible for critical digital infrastructure.

Furthermore, we highlight that in February 2025, ACER initiated a formal process to update the harmonized European Demand Connection Code (DCC 2.0). This updated European connection code is expected to introduce specific, standardized technical requirements for data center connections. To maintain network security, regulatory predictability, and a competitive investment environment across European electricity networks, Google strongly encourages Statnett to ensure that any updates to the NVF are fully harmonized with the upcoming DCC 2.0 framework.

Feedback on Additional Technical Requirements proposed in NVF

Application of NVF

To ensure these updated technical requirements are practically achievable, we request Statnett align the implementation timelines of the revised National Guide for Functional Requirements (NVF) with the commercial realities of the global supply chain. The highly specialized electrical infrastructure utilized in modern digital infrastructure requires lead times that can span up to 3 years. We request that Statnett include an exemption for any projects that have signed a connection agreement and placed binding orders for critical electrical equipment prior to the formal entry into force of these updated guidelines. This is to prevent stranded investments and protect regulatory predictability for projects where equipment has been designed and ordered but commissioning is planned following the application of the NVF.

1. 10.4 Reactive Power

Google are aligned with the principle that consumption facilities compensate for their reactive power production and consumption at the point of interconnection to maintain a stable grid.

2. 10.3.2 Fault Ride Through

Google is developing technology that will allow our IT capacity to ride through faults to meet the proposed U/T curve. As mechanical systems are typically not protected by an uninterruptible power supply (UPS), providing the same level of fault ride through (FRT) capability to cooling loads is not possible.

Google's data centers are among the industry's most efficient, operating with a 2025 fleet-wide average power usage effectiveness (PUE) of 1.09¹; however the instantaneous mechanical demand depends on ambient conditions and can not be controlled. Google proposes that the FRT requirement is applied to IT loads only within a datacenter or alternatively the Post-Fault-Active Power-Recovery (PFAPR) range of +-5% be extended to +5% -20% to allow for the seasonal variation in mechanical load.

3. 10.5 Stability in consumer facilities

We agree that Oscillations can have a negative impact on grid stability through various interactions across the electricity network if not managed appropriately. The Oscillation requirements proposed are extremely restrictive and may inhibit the deployment of AI/ML Data Center capacity. We propose a working group be set up with the system operator and Data Center industry partners operating in the AI/ML space to model oscillations, their impact on the grid and to define appropriate limits & mitigation measures.

An example of a requirement we are supporting is the Fingrid KJV2026 oscillation stability requirements published in June 2026. The Fingrid proposal specifies oscillation frequency ranges and magnitude limits for consumption facilities based on a detailed system analysis. This form of evidence based analysis defining oscillation limits ensures a stable system can be maintained while providing consumption facilities achievable oscillation targets.

¹ <https://datacenters.google/efficiency/>

4. 10.6 Active power regulation and ramping in consumer systems

We welcome the addition of an active power ramp rate requirement to the NVF. Statnett references the impact of AI data center rapid load changes on the increased use of Frequency Containment Reserves, we are aware of the impacts and have developed mitigations. AI/ML data centers can be managed to specific ramp rate limits; however, these limits must be known early in the design phase and are not readily adjustable throughout the duration of the useful economic life of the facility. We request Statnett propose specific limits in the NVF to provide clarity to grid users and enable designs to be completed..

These ramp limits may be in the form of $X\%$ Pmax/min or X MW/Min. The NVF should specify how the ramp rate is measured, over how many minutes/seconds the rate will be average and the maximum permissible instantaneous step within the measurement period.

5. 10.7 Additional requirements for consumer facilities

We would welcome the opportunity to discuss the technical specifications proposed for RoCoF (Rate of Change of Frequency), LFSM (Limited Frequency Sensitive Mode), voltage surges and the provision of simulation models. The NVF draft does not include any detail of these proposed requirements. As details of the proposed technical requirements are not available we cannot support their inclusion in the NVF as we cannot estimate the impact of the requirements.

Feedback on Guidelines for the Exercise of System Responsibility

1. Mandatory Consumption Plans and Gradual Change in Consumption

Statnett proposes to introduce a requirement for submission of binding, 15-minute resolution daily consumption plans for consumption units $>15\text{MW}$ and/or 100GWh/year mirroring the production plans delivered by generators. These plans will be monitored weekly, and "unacceptable" deviations will be reported directly to the Norwegian Regulatory Authority for Energy (RME) for compliance auditing

Cloud data centers demand is not predictable to the required resolution and cannot be scheduled like generation or storage. A cloud data center's demand is driven dynamically in real-time by the processing of critical IT workloads, automated scaling, and distributed user activities (such as AI processing, cloud computing, communications, and public digital services). These depend entirely on user behavior and cannot be predicted in rigid 15-minute block intervals 24 hours in advance.

Requiring data centers to provide binding baselines creates commercial and compliance risks. Furthermore, other TSOs operating in the integrated Nordic balancing market do not require such binding information, Statnett's proposed rigidity risks distorting that integrated balancing market.

We request Statnett replace the binding, penalty-backed consumption plan with a non-binding, indicative forecasting framework for grid planning purposes. This framework can be jointly developed with industry to ensure the highest possible level of accuracy to ensure smooth operation of the balancing market.

2. Gradual Change in Consumption

Statnett proposes large end-users (>15MW and/or 100GWh/year) must plan for a gradual, smooth transition of their consumption from 5 minutes before to 5 minutes after each quarter-hour change.

This linear, pre-scheduled ramping requirement is technically and practically impossible for a cloud data center. Unlike heavy manufacturing or dispatchable generation, a cloud data center's demand is driven dynamically in real-time by the processing of critical IT workloads, automated scaling, and distributed user activities (such as AI processing, cloud computing, communications, and public digital services). These depend entirely on user behavior and cannot be artificially smoothed or controlled.

We request that Statnett grant cloud data centers a class-wide exemption from this gradual change requirement. This is supported by the draft's built-in exceptions, which allow exemptions if "the technical conditions of the facility or the facility's operating situation" or "practical conditions in the operation" do not allow stepwise or gradual adjustments.

Google remains committed to being a constructive partner to Statnett and is available to engage in further bilateral dialogue to discuss these matters in detail.