Hydropower Sustainability Standard

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Assessment Report

Project Name: Hvalárvirkjun

Installed Capacity: 55 MW

Country: Iceland

VesturVerk HREIN ORKA

Project Sponsor: VesturVerk

Report Author: Dr Bernt Rydgren, Mr Pelle Bågesund and Ms Jonida Hafizi

Report Date: Updated report 7 June 2025

Preparation

Cover page photo: Planned dam site at Neðra-Hvalárvatn. Looking towards SSW. Photo Bernt Rydgren

Published by:

Hydropower Sustainability Alliance
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Reporting template first published in September 2021.
This edition published October 2023.

The findings in this report are based on an independent assessment conducted in compliance with the processes set out in the Hydropower Sustainability Assurance System.

Hydropower Sustainability Standard

About the HSS	The Hydropower Sustainability (HS) Standard is the normative document that sets out the performance requirements of the Hydropower Sustainability Certification System, a global labelling and certification scheme outlining the expectations for hydropower projects around the world. The HS Standard recognises hydropower projects for their environmental, social and governance (ESG) performance by setting minimum and advanced performance requirements for the sector and acknowledging projects for meeting these requirements. The HSS is aligned with the safeguards of key lenders (e.g. IFC and World Bank) and can be used to attract climate-aligned finance through green bonds certified by the Climate Bonds Initiative and support electricity sales to RE100 companies. The HS Standard is managed by the Hydropower Sustainability Alliance. The HS Alliance was established in October 2023 to act as the independent and multistakeholder standard-setting body that oversees the Hydropower Sustainability Certification System.
Intended users and uses	The HS Standard includes three separate stages: Preparation, Implementation and Operation. These reflect the different stages of hydropower development and have been designed to be used as standalone documents. Each reporting template provides an action plan to help project teams address any gaps against minimum (good practice) and advanced requirements (best practice). Official HS Standard assessments are carried out by Accredited Assessors, who take an evidence-based approach based on data triangulation. All findings are supported by objective evidence, which is factual, reproducible, objective and verifiable. The HS Standard is most effective when operators and developers commit to implement the recommendations provided and resolve identified significant gaps. Hydropower development and operation may involve public entities, private companies or combined partnerships, and responsibilities may change as the project progresses through its life cycle. It is intended that the organisation with the primary responsibility for a project at its particular life-cycle stage will have a central role in any HS Standard assessment.
Structure of the reporting template	The HS Standard comprises 12 sections that cover the environmental, social, governance and climate change impacts, both negative and positive, that arise from hydropower development and operation. Summary sections at the beginning of the report include: (A) Assessment Overview, (B) Project Details, (C) Performance against Minimum Requirements, (D) Performance against Advanced Requirements, (E) Environmental and Social Action Plan and (F) Abbreviations and Acronyms. The summary sections are followed by the 12 ESG sections where requirements for good and best practices are presented and project findings are provided. The report finishes with three appendixes that list the types of evidence used in the assessment.
Supporting resources	Additional guidance on the structure, content and history of the HS Standard can be found online at: www.hs-alliance.org
Version date	October 2023

A. Assessment Overview

Assessor(s)	Dr Bernt Rydgren (Lead Assessor); Mr Pelle Bågesund (Accredited Assessor) and Ms Jonida Hafizi (Provisionally Accredited Assessor)
Assessment objective	• To have the project assessed by independent experts and measured against international best practices – using the Hydropower Sustainability Standard, the leading global standard for assessing the sustainability of hydropower projects; • Having undergone an assessment at this level will be valuable when it comes to presenting the project and financing on the international market; • The assessment, and the in-house work that accompanies it, is expected to provide insights about the preparation work that has already been done, as well as pinpoint opportunities for further developing the sustainability profile of the project.
Assessment dates	2 September – 11 September 2024 (assessors' travel dates included)
Assessment report date	Original Preliminary Assessment report 16 October 2024. This updated report 7 June 2025.
Summary of key findings	**Section 1, Environmental and Social Assessment and Management:** Any new electricity-generating project concept in Iceland has to deal with the debate around whether or not the country really needs more power supply to service domestic customers and the "green revolution". The questions are based on the fact the Iceland has twice the generation/capita of the 2nd-placed country worldwide and that almost 4/5 of the electricity is used by energy-intensive industry (mainly aluminium smelters). There is, however, a clear need to expand electricity generation in the Vestfjords region where the un-serviced demand is presently provided by diesel generators at great economic and environmental cost, and grid extension alone would prove significantly more expensive than the Hvalávirkjun project. The project has been placed in the utilisation category of the Master Plan, a clear indication that it is a priority project based on a thorough multi-criteria analysis, not just regionally but also nationally. The EIA, conducted in 2017, showed some gaps, e.g. a lack of a comprehensive cumulative assessment and detailed studies of birds and aquatic ecology, gaps that have been or are on track to be filled. Since the project is still at a fairly early stage of development (access-road construction is planned to start in 2026, commissioning in 2030-31), the Framework Environmental and Social Management Plan (ESMP) is only now being developed. This is standard operating procedure and once Contractor(s) are selected, they will be responsible for developing detailed management plans based on the Framework ESMP. This results in several requirements of the Hydropower Sustainability Standard being met only because all processes are on track, and there is still ample time to finalise the plans.This is far from unique for Hvalávirkjun, but needs to be noted for the information of the reader. It is also important to note that there is not an infinite amount of time available for this work. Given that it is reasonable to demand a good Framework ESMP to be in place at least 3-4 months before the start of construction (to give contractors time to develop their detailed plans), and that construction is planned to start in mid-2026, this schedule is quite strict.

Section 2, Labour and Working Conditions:

HS Orka, the majority owner of Vesturverk, the special-purpose vehicle for the development of the Hvalávirkjun hydropower project, has very comprehensive labour-management policies, plans and processes to anticipate and respond to emerging risks and opportunities for its general operations on similar projects (which the recent ISO 45001 audit has shown), and since there is a board decision within both HS Orka and VesturVerk that these policies and plans will be transferred to the Hvalávirkjun project, the labour-related requirements of the Standard are all met, as long as detailed management plans are developed according to the schedule expressed above.

Section 3, Water Quality and Sediments:

The EIA did not investigate water quality and sediment loads in great detail, probably because the rivers are largely un-affected by human activity (in a natural state) and not affected by glacial meltwater to any significant extent. Ongoing work on the Water Framework Directive alignment is changing this and a very comprehensive monitoring has started, run by external expert companies/agencies. There is no scope for Hvalávirkjun causing any significant negative water-quality or sediment-load-related impacts.

Section 4, Community Impacts and Infrastructure Safety:

The project has conducted a satisfactory assessment of the community impacts and infrastructure safety issues to meet the minimum requirements of the standard. There are strongly-divided opinions on the project in the community, something that poses and will continue to pose significant challenges to the development team. The focus of the opposition is on the impacts on undisturbed nature (something Icelanders put a very high value on) and, to a certain extent, the unavoidable construction-related disturbances that the project will cause to the normally peaceful existence in the community. The updated Communication and Consultation Plan and the work described therein will play a crucial role in the possible success of the project going forward.

Section 5, Resettlement:

This section is assessed as “Not Relevant” to the assessment as the project will not cause any physical displacement to people.

Section 6, Biodiversity and Invasive Species:

Biodiversity in the area is determined by the harsh arctic environment. It is species-poor (except for birds), none threated, and also with few individuals. Most of the project’s direct-impact area is almost vegetation-free rocks and gravel. Invasive species is not presently a major concern in the area, but a construction project of this size would undoubtably bring the risk of e.g. Lupin infestation – the Àrneshreppur Municipality being one of few areas in Iceland not already affected by this strong invasive. Opinions on the merits or demerits of this plant vary considerably in the country. One of two significant predicted impacts on biodiversity is avoidable. It is caused by the strong emphasis in the old design on keeping the dams as low as possible for them to “better disappear into the

environment", an approach advocated by Government stakeholders. This would result in the near emptying of the project's three reservoirs in the spring every year. This would threaten the biota in what were previously (smaller) natural lakes with a significantly reduced habitat. It is the distinct opinion of the assessors that this is a misdirected focus, as the extremely few people who ever venture that high on Ófeigsfjarðarheiði are unlikely to react differently to the dam bodies because they are a number of metres higher or lower. Higher dams would allow a residual volume to remain in the reservoirs in the late-spring period, to serve as refugium for the aquatic biota. The design review presently ongoing will address this and hopefully arrive at slightly higher dams with a significantly greater residual volume in the reservoirs in spring. The other significant biodiversity impact is unavoidable as it concerns the impact to the Ófeigsfjarðarheiði wilderness area. Approximately 400 km^2 (40 km in length and 5 km on each side) along the transmission-line route would be removed from wilderness classification, and the highland area could potentially be made accessible to cars in the summer period as roads in Iceland are generally required to be open to the public.

Section 7, Indigenous Peoples:

This section is assessed as "Not Relevant" to the assessment as Iceland does not have any indigenous peoples.

Section 8, Cultural Heritage

Documentations of physical cultural resources with survey map and photo documentation have been done for the project's core impact area and the access road's planned alignment. No critical heritage has been identified as threatened by the project. The main concern is associated with possible redesign / realignment of the project and access roads, which would necessitate renewed surveys and mitigation planning. A well-designed chance-find procedure will be required by the Framework ESMP.

Section 9, Governance and Procurement:

As the development work on the project has only recently been restarted after a period of dormancy, the governance system for VesturVerk specifically has not been finalised. In order to address this issue comprehensively, the boards of directors of majority-owner HS Orka as well as VesturVerk have both made the decision to use the Governance systems of HS Orka fully, also for VesturVerk and the Hvalávirkjun project. This results in a well-developed good-practice interactive and web-based system which is audited and certified in accordance with ISO standards 9001, 14001 and 45001. The risk-management system is based on ISO 31000, but not yet certified against it. Procurement practices are being improved and are on track to be fully internalised into the management system, and HS Orka addresses sustainability and anti-corruption criteria in its procurement procedures through a pre-screening list of 22 of its major suppliers, a screening conducted by an external expert company. The only important corporate-governance concern the existing opposition to the project in the Àrneshreppur Municipality, something that is also relevant for sections 4 and 10.

Section 10, Communications and Consultation:

Engagement has been sufficiently inclusive of all stakeholder groups during the preparation phase so far. In addition, VesturVerk/HS Orka makes significant project reports publicly available and publicly reports on areas of high interest to its stakeholders.

	VesturVerk/HS Orka has improved its general communication and consultation processes with updated strategy and plans, as well as significant outreach activities. Support for the project is strong at the regional level but there is significant opposition from some members of the Àrneshreppur community, which is a serious concern. Some of this appears to be caused by misunderstandings, but there are also very real concerns about the impact on a remote peaceful community with large areas of nature almost unaffected by human activities. The divided opinions at the local level is a concern which will require considerable efforts during the continued development work, see also Section 4 above. **Section 11, Hydrological Resource:** The hydrology of the project rivers is very well studied and evaluated. Project design and optimisation is still ongoing with e.g. investigations into whether or not an additional unit would make financial and power-market sense (a higher installed capacity would realise a greater ability to provide balancing power to support the variable generation of other renewables). Climate-change predictions are being internalised into the hydrological model during 2025-26. The downstream-flow regime of the project will depend on the result of the ongoing optimisation work and will focus on providing an acceptable flow in the three project-affected waterfalls in the area with minimum production loss. **Section 12, Climate Change Mitigation and Resilience:** Climate modelling for Iceland shows unusually low predicted changes in both temperature and rainfall over this century. Multiple RCPs are tested, and results are spread around today's averages (both colder and warmer, wetter and drier) but base cases – which best fit the changes measured so far – predict some minor increases in precipitation but mainly a redistribution with lower inter-season variability – a positive change for a hydropower project's climate resilience. Climate modelling by the Icelandic Met Office does, however, predict an increase in extreme climate events (a well-known and scientifically indisputable global concern). The project would contribute to reduced systems emissions through several pathways. **Conclusion:** The assessment identified no significant gaps at the minimum-requirement level and the project meets all except 10 advanced-level requirements. However, some minimum-level and several of the advanced-level requirements depend on the ongoing preparation of a Framework Environmental and Social Management Plan and its implementation into detailed management plans by the chosen contractor(s) well before construction starts. The most important concern is the strong opposition against the project among some local residents. However, the project is the prime candidate to address the lack of a satisfactory electricity supply in the whole Vestfjords region, so more information and consultations can hopefully alleviate this problem.
Limitations of the assessment	The assessment was conducted at an early stage during project preparation. The repercussions of this are listed in the summary above.

	Due to the extremely inaccessible nature of the project area, the assessment team was only able to visit the core area around Neðra-Hvalárvatn and the planned dam and intake as well as the area below that site. All other “site inspections” have been conducted with the aid of photographic material supplied by the developer VesturVerk/HS Orka. VesturVerk/HS Orka was very helpful in trying to secure interviews with a representative sample of local residents in Àrneshreppur. However, unfortunately two potential interviewees turned down our request for a discussion about the project. In spite of this, the assessors believe that most of the opinions of the municipality’s residents, and the diversity of these, have been captured.

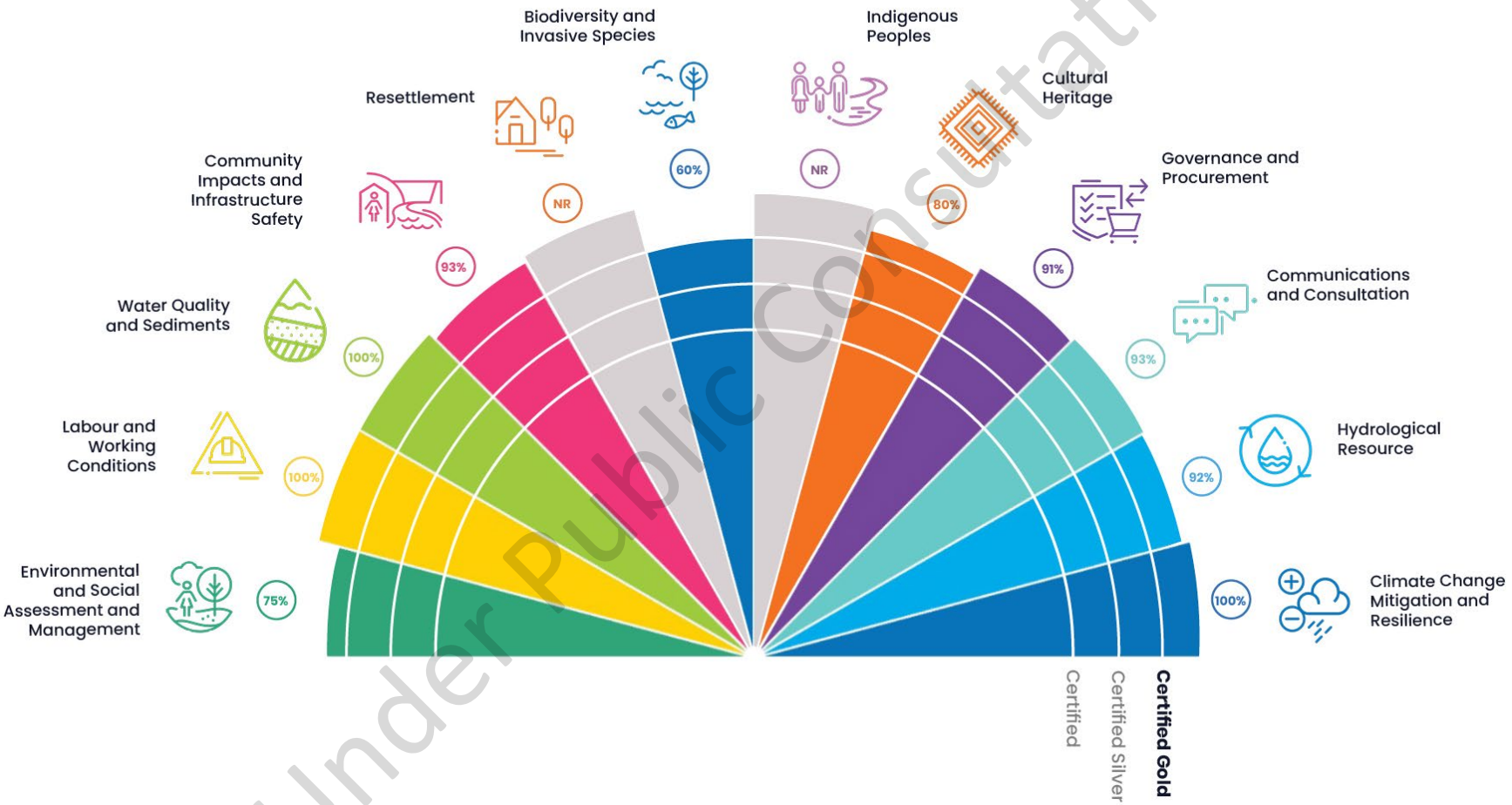
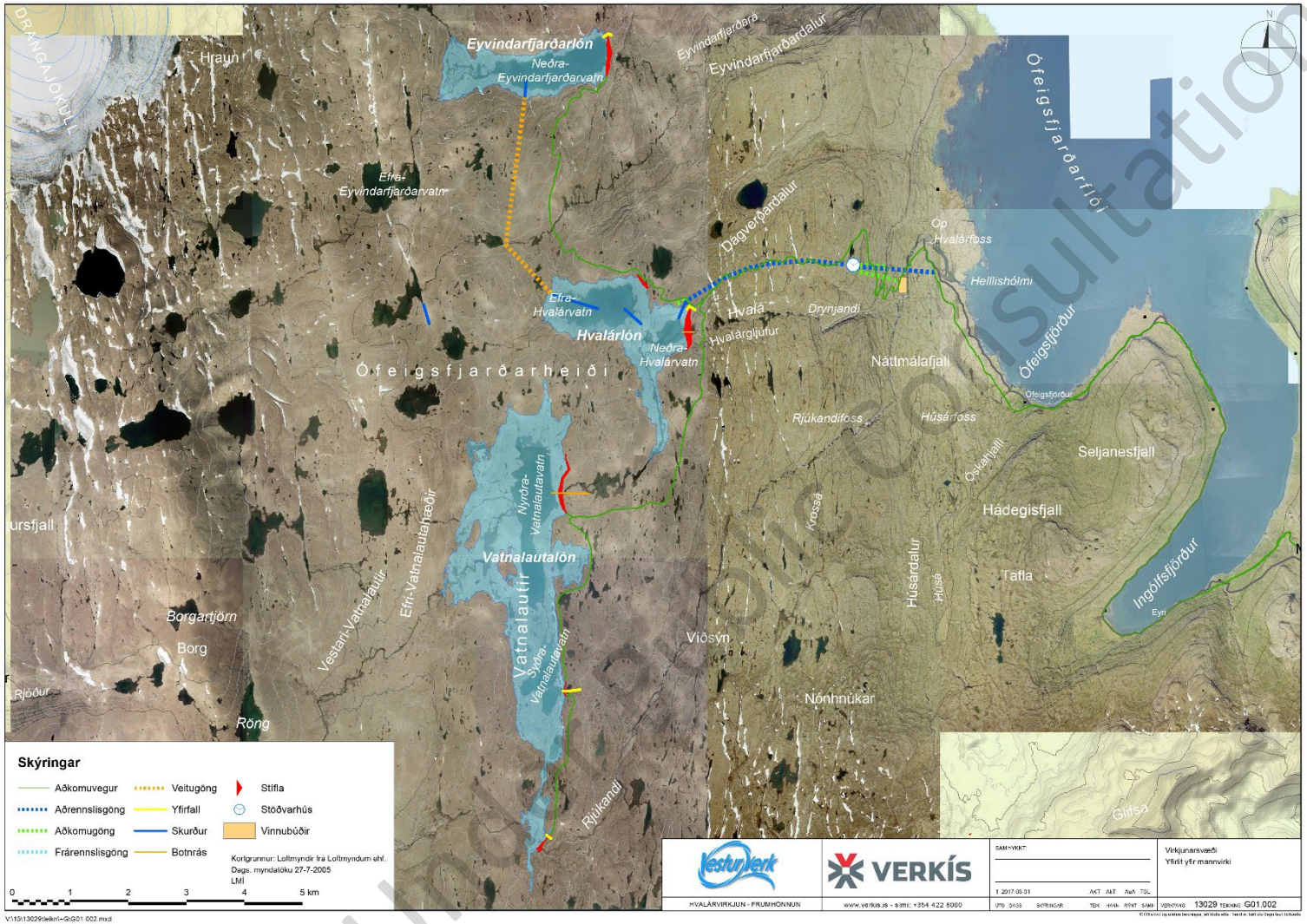


Figure 1 – Hydropower Sustainability Standard (HSS) Results Diagram

B. Project Details

Project name	Hvalávirkjun
Country	Iceland
Location	At approximately 66°04' N; 21°45' W, in the Árneshreppur Municipality in the Vestfjords area
Purpose	Hydropower generation
Developer / Owner	VesturVerk
Financer(s)	Financing is not finalised at the time of the assessment – financial close expected in 2026
Installed capacity (MW)	55
Construction start date (planned or actual)	2026 (planned)
Commercial operations date (planned or actual)	2030-31 (planned)
Annual average generation (GWh / year)	320
Associated infrastructure: road(s) (length)	36.3 km of roads using 33 ha of land. 11.4 km are new and/or improved access roads as far as Hvalárfoss, 24.9 km are roads within the project area (to dam sites etc.). Four bridges and/or culverts have to be constructed over/past four rivers: Eyrará, Sýruá, Húsá and Hvalá. The transmission component (the responsibility of Landsnet) will add about 40 km of construction/maintenance road which may become a road open to the public in the summertime (subject to the landowner's consent).
Transmission lines and sub-stations (names, lengths and capacities)	Still in preparation, planning and EIA process. The immediate connection point will most likely be located near the Ísafjörður fjord, with an extension to Kollafjörður on the south side of Vestfjords.
Total cost (USD m)	Approximately 275 MUSD
Annual operating costs (USD m)	Estimated at 1% of CAPEX
Specific investment cost (USD m / MW)	5.0 MUSD/MW
Levelised energy cost (USD / kWh)	Approximately 9 USc/kWh (85-95 USD/MWh)
Dam type	Rockfill
Dam height (m)	22 (Rjúkandastífla), 20 (Vatnalautastífla), 27 (Hvalárstífla), 8 (Dagverðardalsstífla), and 14 (Eyvindarfjarðarstífla) metres
Dam length at crest (m)	150, 1 000, 750, 320, and 800, respectively
Units (number, type, MW)	2 x 27.5 MW Francis

Reservoir area at Full Supply Level (FSL) (km^2)	The three reservoirs will cover 12.0 (4.3 km^2, or 36%, of that is natural pre-project lake area)
Average net head at FSL (m)	304
Average flow (m^3 / s)	15.9 m^3/s
Design flow (m^3 / s)	20 m^3/s
Load factor	66%
Number of physically displaced households	0
Power density (W / m^2)	Net added reservoir area is 7.7 km^2. 55 000 000/7 700 000 = 7.1
Emissions intensity (gCO_2e / kWh)	Not calculated for the Hvalá project at this stage. As the Power Density is > 5 W/m^2, it is not necessary data for this assessment.
Contacts / website	https://www.vesturverk.is/ (only in Icelandic). The majority owner of VesturVerk, HS Orka has an English-language web site at https://www.hsorka.is/en/



Preliminary Project layout (From Feasibility Study by VesturVerk and Verkis, 2017). The design is subject to ongoing optimisation work.

C. Performance against Minimum Requirements

There are no significant gaps at the minimum-requirement level.

D. Performance against Advanced Requirements

	Sections											
	1. Environmental and Social Assessment and Management	2. Labour and Working Conditions	3. Water Quality and Sediments	4. Community Impacts and Infrastructure Safety	5. Resettlement	6. Biodiversity and Invasive Species	7. Indigenous Peoples	8. Cultural Heritage	9. Governance and Procurement	10. Communications and Consultation	11. Hydrological Resource	12. Climate Change Mitigation and Resilience
TOTAL NUMBER OF REQUIREMENTS	12	3	7	14	3	5	5	5	11	14	13	10
NUMBER OF REQUIREMENTS MET	9	3	7	13	Not Relevant	3	Not Relevant	4	10	13[1]	12	10
PERCENTAGE OF REQUIREMENTS MET	75	100	100	93	Not Relevant	60	Not Relevant	80	91	93	92	100

Note:

- A project must meet all Minimum Requirements on all relevant sections to achieve HS Certified label.
- To receive the HS Silver label, a project must meet all Minimum Requirements on all relevant sections AND meet at least 30% of the Advanced Requirements on each relevant section.
- To receive the HS Gold label, a project must meet all Minimum Requirements on all relevant sections AND meet at least 60% of the Advanced Requirements on each relevant section.

1 - Two advanced-level requirements are Not Relevant (referring to issues in the Not Relevant Section 5).

E. Environmental and Social Action Plan (ESAP)

There are no significant gaps at the minimum-requirement level.

Advanced Requirements							
Section	Requirement sought	Action(s)	Responsibility	Indicator of achievement	Timeframe		
					<12 months	12-24 months	>24 months
1	Broad considerations … risks and opportunities	Continued communication and consultation with local stakeholders and actions addressed according to potential issues raised. This in order to mitigate the effects of the project on the local stakeholders (and consequently the opposition to the project).	VesturVerk / HS Orka	Reduced level of opposition in the local community, resulting in continued support for the project by the Municipal Board.	X		
1	The assessment is based on dialogue with ….. and key stakeholder groups				X		
1	Project siting and design is optimal….				X		
4	Broad considerations … communities and benefits…				X		
6	Broad considerations … risks and opportunities	Redesign of the project to include somewhat higher dams, allowing a significant aquatic habitat to “survive” also at the end of the low-flow season in spring.	VesturVerk/HS Orka and design consultants	A design change to include higher dams with a significant maintained reservoir volume at maximum drawdown (dead storage), allowing a “survival volume” of water for aquatic biota to remain until spring melting replenishes the reservoirs.		X	
6	Enhancement to pre-project conditions	Effectively unsolvable without entering into agreements on off-site enhancements such as biodiversity offsets.			Not relevant		
8	Enhancement to pre-project conditions	Evaluate how environmental factors may affect cultural heritage and vice versa. Hold forums or workshops to	VesturVerk/HS Orka	Number of stakeholder engagement activities (e.g., workshops, public forums) for heritage. Evidence of the			X

Advanced Requirements							
Section	Requirement sought	Action(s)	Responsibility	Indicator of achievement	Timeframe		
					<12 months	12-24 months	>24 months
		inform stakeholders about the project and gather their feedback. Develop plans for the preservation and maintenance of the site during and after the project. Implement monitoring systems to assess impacts throughout the project lifecycle, allowing for adaptive management. Organize events that celebrate and promote local culture and heritage. Systematically document feedback received from stakeholders and how it informs project planning		management and conservation strategies developed and implemented for the construction period. Frequency of baseline and ongoing monitoring reports generated. Participant engagement levels and feedback on awareness and appreciation of local heritage. Amount of stakeholder feedback documented and reviewed. Visitor information centre developed at the main camp site with cultural-heritage-based content.			
9	No unresolved external governance issues identified	Continued communication and information to the community to resolve at least the misunderstandings regarding public spending, “subsidies” to private companies etc.	Communication Officer, VesturVerk / HS Orka with support from senior management	The local opponents have focussed their objections on valid impacts such as wilderness aspects and construction-period disturbances. There is documentary proof to this effect.	X		
10	Communication and consultation …. processes ….. various stakeholder groups	Support at the community-level doesn’t mean that all community members agree, but the developer should seek broad consensus, and be alert to opposition from groups within the community. Continued identification and categorisation of stakeholder based on their interests, influence and	Communication Officer, VesturVerk / HS Orka with support from senior management and the Municipal	Development if tailored communication plans for each stakeholder group. Implementation of feedback sessions where stakeholders can voice concerns. Consistent implementation of communications events, based on stakeholder, collated and reported.	X		

Advanced Requirements							
Section	Requirement sought	Action(s)	Responsibility	Indicator of achievement	Timeframe		
					<12 months	12-24 months	>24 months
		communication preference is of the utmost importance. Customised communication strategies, with a specific strategy for each stakeholder group responding to their concerns, preferred channels of exchange all the while ensuring frequent and two-way communication with clear feed-back channels. Regular follow-up and analyses of past communication efforts.	Board in Àrneshreppur	Establishment of multiple feedback channels (e.g., surveys, suggestion boxes). Regular review meetings to assess communications effectiveness.			
11	Downstream flow regimes represent an optimal fit….	Effectively unsolvable			Not relevant		

F. Abbreviations and Acronyms

CHA	Cultural Heritage Agency
CIA	Cumulative Impact Assessment
CP	Construction Permit
CPI	Corruption Perception Index (Index annually updated by Transparency International (transparency.org)
e	equivalent – used when denoting emissions intensity for power projects to reduce all emissions to a comparable number according to accepted standards
EEA	European Economic Area
EFLA	Given name to the consulting company, following a four-way merger
EIA	Environmental Impact Assessment
ESG	Environmental, Social and Governance
ESMP	Environmental and Social Management Plan
EU	European Union
FIDIC	International Federation of Consulting Engineers (which issues a series of contract templates for use in procurement of goods and services of various kinds)
g	gram
GDP	Gross Domestic Product
GHG	Green-House Gas
GIIP	Good International Industry Practice
GRI	Global Reporting Initiative (a sustainability-reporting standard)
GRM	Grievance Redress Mechanism
HPP	HydroPower Project
IHF	Icelandic Heritage Foundation
ILO	International Labour Organization
IPCC	Inter-governmental Panel on Climate Change
ISO	International Organization for Standardization
km	1 000 metres
kWh	kiloWatthours – 1 kWh is the energy generated by e.g. an HPP turbine of 1 kW installed capacity in 1 hour.

m	metre
m.a.s.l.	metres above sea level (altitude)
MW	MegaWatt – 1 million Watts of (in this case) installed power-generating capacity of an HPP
N/A	Not Applicable
NEA	National Energy Authority
NGO	Non-Governmental Organisation
NPA	National Planning Agency
NVE	Norwegian Water Resources and Energy Directorate
OHS (or OH&S)	Occupational Health and Safety
RCP	Representative Concentration Pathway (a kind of model scenario for use in climate-change modelling)
SDG	Sustainable Development Goals (UN initiative)
SIA	Social Impact Assessment
TCFD	Task Force on Climate-Related Financial Disclosures
UN	United Nations
W	Watt, SI unit for power
WFD	Water Framework Directive (EU Directive)

1 Environmental and Social Assessment and Management

Scope and principle
This section addresses the assessment and planning processes for environmental and social impacts associated with project implementation and operation throughout the area of impact of the project, the contribution of the project in meeting demonstrated needs for water and energy services, and the evaluation and determination of project siting and design options. The principle is that environmental and social impacts are identified and assessed, and that avoidance, minimisation and mitigation measures are designed and implemented.

Background	
Identify the main environmental and social issues during implementation	• Material mining, road construction, utility tunnels and canals will cause substantial impacts during construction – visible geological formations that are considered unique or of high conservation value will not be disturbed, but several waterfalls in the three project-affected rivers will be negatively affected (water will be diverted into tunnels), and a number of lakes will be submerged in the reservoirs that will be created. • The main impacts on vegetation will be in the areas where the reservoirs will be created, roads and canals built, and where material will be taken or piled. None of the wetlands are close to the size where special protection is mandated. The habitat of birds will be reduced, but to a negligible extent. • Somewhat-to-considerable negative effects are expected on the aquatic life of the lakes and rivers that will be affected by the power plant's operations. • The main archaeological effects are a number of cairns that will be put under water in the reservoirs and also along the new and improved (widened) roads, where a number of old settlement remains have been identified. • Traffic-related disturbances such as noise and dust during construction. • The landscape will be affected, the planned project will be implemented largely on undisturbed land on the Ófeigsfjarðarheiði which is largely uninhabited wilderness. • The impact on the Vestfjords region is expected to be positive as the additional power generation will help alleviate the present unsatisfactory situation. • Economic activity will increase in the project-affected community, leading to higher income for the local authorities, and access to the Àrneshreppur Municipality will be improved.

	• However, not all community members and other stakeholders (such as NGOs advocating for the protection of all relatively undeveloped areas) support the project, mainly quoting the loss of wilderness and the increased disturbance during construction as their main arguments against the project. • The substantial temporary increase in population in the area due to the inflow of construction workers will put more strain on the community's infrastructure and services during the construction phase.
Identify the main environmental and social issues during operation	• The negative impacts to undisturbed nature. • The improved/widened roads will improve access to the municipality, for the community as well as for tourists, which will have a positive effect. • The increased income for the municipality from the property tax will have a positive effect.
Identify the environmental regulator	Umhverfisstofnun (The Environmental Agency) in the Ministry of Environment, Energy and Climate is the regulatory agency. Other expert agencies (e.g. Skipulagsstofnun – the Planning Agency – and other line agencies) are asked to review and comment on the environmental impact assessment and development plans. The Regional Environmental and Public Health Office grants operating permits related to food safety, environmental quality and general hygiene issues.
Identify other regulators (e.g. on land, water use, Indigenous Peoples)	Orkustofnun (The National Energy Authority) issues the power plant permit
Summarise the ESIA regulatory requirements	Item 3.02 in Annex 1 of Act no. 111/2021 on Act on Environmental Impact Assessment of Projects and Plans states: "…other (includes hydropower) with an installed electric power of 10 MW or more" are always subject to an Environmental Impact Assessment according to Article 5 of the law.
List the key license conditions/voluntary commitments	• The National Energy Authority has the function to receive applications petitioning the Master Plan Committee to take power plant options up for consideration. • A power plant permit is needed according to the Electricity Act no 65/2003. • Árneshreppur Municipality needs to grant a Construction Permit according to article 13 Planning and Building Act no. 123/2010 and a Building Permit according to Article 9. Act no. 160/2010 (the Construction Act) on structures. This needs to be preceded by a permission from Minjastofnun (The Archaeological Agency) in accordance with The Act on Cultural Heritage No. 80/2012. • A Work Permit needs to be issues by The Vestfjords Health Authority for power plants larger than 2 MW according to article 6 Act no. 7/1998 on Hygiene and Pollution Prevention.

	• A Work Permit from the Health Inspectorate also needs to be issues for temporary business operations in connection to construction. • A permit for the construction of buildings and laying down roads leading to fishing areas must be obtained from the Directorate of Fisheries in accordance with Act no. 61/2006 on Salmon and Trout Fishing
Total environmental and social costs in project development, including resettlement costs	No costs estimated in the Environmental Impact Assessment (EIA).
Description of the non-physical cultural heritage in the project area	The project-affected communities are all located within the Àrneshreppur municipality. This is a very sparsely populated area with a total of 54 inhabitants in the whole municipality. The Icelandic society at large is changing rapidly in response to immigration from a largely homogenous one to more mixed, but this is not yet true in the project municipality of Àrneshreppur. Christianity is the main religion (however, the population is to a large extent secular). Much of the municipality's area is almost entirely undisturbed nature. "Wilderness" is a very important concept to Icelanders in general, clearly qualifying as a (non-physical) cultural-heritage aspect.
Other relevant information	The Icelandic state's energy needs are comprehensively planned by a multi-stakeholder forum called Rammaáætlun (The Master Plan for Nature Protection and Energy Utilisation). The Master Plan work is governed by the law on Rammaáætlun, which describes the holistic approach of the work. The work is governed by a steering committee with 2 people from the environmental sector, 2 from the industry sector and 1 from local government. Their role is as advisors to the Minister of Environment, Energy and Climate Change. The present committee is the 5th in order. Expert groups are established for environmental, social and economic aspects, and one for conflicts between user groups. In total there are about 35 experts involved. There are some sources of funding for research to add background knowledge to support their prioritisation process. The law on Rammaáætlun does not require regionalised cumulative assessments. Wind Power development, which is picking up speed in Iceland, is included in the Mater Plan's work for any projects >10 MW. Two projects have already been approved and 8 more are in the process. Many more are submitted to them for consideration. However, offshore wind power is excluded by law from the Master Planning committee.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Assessments of project environmental and social impacts	✓	The Environmental Impact Assessment (EIA) has been approved by the National Planning Agency. The assessment report in general met the requirements of the law and regulation on EIA both in implementation and operation stages. However, their review required some additions that VesturVerk/HS Orka have now conducted and submitted to the Agency, which has approved these as well.	The assessment takes broad considerations into account, and both risks and opportunities	×	VesturVerk/HS Orka has taken steps to address broad considerations (as evident from the redesigns that have been conducted to meet environmental considerations). The recent reinitiating of the community engagement and consultation has shown substantial improvement in comparison to the situation before the project was stopped in 2020. However, evidence from interviews with representatives of the local community shows that the work initially did not cover all the aspects of why some community members are opposed to the project, such as disturbance due to construction-period traffic and the loss of wilderness areas on Ófeigsfjarðar-heiði. There is evidence that the issue will be addressed in design reviews during 2025 but this is still too vague to meet this requirement at the time of this assessment.
Assessments address:					
• project implementation	✓	See above			
• project operation	✓	See above			
• associated facilities	✓	See above	The social impact assessment incorporates assessment of human rights	✓	Two comprehensive social impact assessments have been conducted by the University of Akureyri, covering impacts both on a regional and a municipal level, the assessments show a clear rights-based approach.
• cumulative impacts	✓	The main cumulative impacts of this project (a thing that was a concern of the Environmental Agency during the review of the EIA) mainly concern the loss of wilderness area due to the			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		transmission lines that needs to be built from Hvalávirkjun to the nearest possible connection point to the existing grid (close to Kinnarstaðir on the southern coast of Vestfjords) and the reservoirs, dams and diversions for the project itself. The Environmental Agency is worried that a quarter of the undisturbed land in the Vestfjords region will suffer cumulative impacts mainly from the transmission line which according to Landsnet (the national transmission company), can only be laid as an underground cable part of the distance, due to higher transmission losses in cables. There was no Cumulative Impact Assessment (CIA) conducted in the past impact assessments of the project. Vesturverk have commissioned a draft CIA to be conducted, while a final one will have to wait until the design and ESIA for Landsnet's transmission line is finalised. The preliminary CIA reviews cumulative impacts on: • terrestrial ecosystems; • landscape and wilderness; • cultural heritage; • water bodies and geological formations;			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		• climate; • tourism and outdoor recreation; • energy supply; and • economic development, basic services and infrastructure. The study is comprehensive and its main conclusions are that the cumulative impacts of the two projects will be both positive and negative. Negative impacts are mainly from disturbance of natural landscape and reduction of wilderness areas, with potentially permanent effects on the area's appearance and the experience of tourists seeking nature and tranquillity. The projects will also negatively affect water bodies due to changes in flow. Positive impacts are primarily from improved energy security and grid connection, increasing opportunities for economic development and jobs. The energy production supports the energy transition, and increased municipal revenue and economic benefits are expected.			
• role and capacity of third parties	✓	HS Orka has clear demands on contractors and sub-contractors (stipulated in contracts) to follow similar environmental and social			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		policies as themselves, and there is a board decision that these policies and procedures will be transferred to both VesturVerk, and the project site, once implementation starts. The government agencies and consulting firms in Iceland are generally well-functioning and has a high capacity to deliver on their assigned responsibilities and tasks. The municipal boards in smaller communities (such as in Árneshreppur) can be a bit strained when it comes to delivering on its municipal responsibilities due small populations and consequently lack of people that wish to serve on the board. This is an issue that also affects project development in these municipalities since projects need to be integrated into the municipal plans, however, this has not been an issue in Árneshreppur.			
• impacts associated with primary suppliers	✓	The same procedures described above are also applied to procurement and similar processes. See also Section 9.			
Assessments have been prepared using appropriate expertise	✓	The assessment has been conducted by a local Icelandic consultancy firm with long experience in conducting EIAs for hydropower projects, the			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		specific environmental and archaeological studies have been conducted by specific experts in each of the applicable fields.			
A baseline has been established and well-documented for the pre-project condition against which post-project changes can be compared	✓	This requirement has been met by the approval of the EIA and the submission of the additional assessments required by The Planning Agency.			
Assessment of needs for water and energy services	✓	There are differences of opinion among Icelanders regarding whether or not there really is a need to develop additional power supply (according to the available statistics from 2021 from the National Energy Agency, more than 77% of the power supply goes to large electricity-intensive industries). Iceland has the by far highest electricity generation per capita in the world at 54 000 kWh/person (2023, https://ourworldindata.org/), almost twice that of second-placed Norway. On the other hand, there is a clearly defined need to expand electricity production in Vestfjords to supply reliable and clean energy (electricity is provided by diesel generators when there is a shortfall from the national grid).	The assessment shows a strong emphasis on social and environmental needs, policies and plans, including the need for sustainable development of the river basin and integrated water resource management	✓	See findings and observations for "The assessment takes broad considerations into account, and both risks and opportunities" above. However, the attention paid by the developers in trying to address the concerns of some of the local stakeholders and the ongoing development of a Framework ESMP does prove the developer's strong emphasis on resolving the situation, meaning that this requirement is considered to be met.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		Based on the Master Plan (Hvalávirkjun is placed in the utilisation category) and Landsnet's assessment and priorities for Vestfjords (Landsnet's Draft System Plan for 2025-2034 is under public consultation at the time of this assessment), it is concluded that the requirement for an assessment of the needs for the energy services is met, with the project ranking very high.			
Assessment of options to meet water and energy needs	✓	Options to meet the energy needs in Vestfjords has been assessed (such as only strengthening the power grid – this has been considered too costly by Landsnet). Today's option of using diesel generators during periods of insufficient supply is deemed environmentally unsatisfactory (see also Section 12). Other hydropower and/or wind projects have also been considered but would potentially also have similar negative impacts on the region as Hvalávirkjun (such as Glámuvirkjun and Skúfnavatnavirkjun that are both put in the hold category of the Master Plan). Hvalávirkjun is, therefore, a national priority (in accordance with the Master Plan) and the main regional priority to address the power shortage.			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
Assessment of national and regional policies and plans relevant to those needs	✓	The project is put as a priority in the Government's Master Plan (put in the utilisation category – meaning a go ahead for the project). The Vestfjords Development Organisation has this project as a main priority to address the power shortage in the region, which would also serve to improve the business environment (an assessment from Landsnet has shown that the region is lagging behind the rest of Iceland, in terms of both development and salary levels, due to the power shortage).	The assessment is based on dialogue with government planners, policy makers and key stakeholder groups	✘	The project is a clear priority of the government (since it is put into the utilisation category of the Master Plan). This evaluation has involved several experts from different fields. In 2024 VesturVerk/HS Orka restarted the dialogue with both governmental stakeholders and community stakeholders to address issues that these stakeholders might have. However, the unresolved issues with parts of the local community (a key stakeholder group, see description above) still remain. There is evidence that the issue will be addressed during 2025-26, but this is still too vague to meet this requirement at the time of this assessment.
Social and environmental considerations, including regulatory considerations, have been analysed at an early stage in preliminary project designs and options	✓	There have been ongoing discussions around how to handle issues such as reduced environmental impacts of the hydropower plant and community considerations for a long time, many of these have led to changes to the priorities and even the design of the project. Options assessments are still ongoing at the time of assessment, seeking to further optimise the design for the best possible combination of power generation and reduced negative impacts.	Options take into consideration sustainable river basin design and integrated water resources management	✓	The optimisation process and considerations of environmental aspects (as part of the licencing review) shows that these aspects have been taken into consideration. For further details, see Section 11.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
MANAGEMENT					
Environmental and social management plans and processes have been developed	✓	There was some framework documentation available in the 2017 EIA about necessary mitigation, but a comprehensive Framework Environmental and Social Management Plan (ESMP) was not developed. Such a plan is being developed at the time of this assessment and, therefore, the lack of finalised plans and processes is assessed as **a non-significant gap,** as the plan is on track to be developed	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	Even though the Framework ESMP is not in place yet (being developed at the time of this assessment), HS Orka has shown evidence that they have a comprehensive management system in place to anticipate and respond to emerging risks and opportunities on their existing projects. It has been verified (by decision of the two boards) that these policies and procedures will be transferred to both VesturVerk and the project site once implementation starts.
Plans address project implementation	✓	See above			
Plans address project operation	✓	See above			
Plans have been prepared using appropriate expertise (internal and external)	✓	see above	Plans are embedded within an internationally recognised environmental management system which is third party verified, such as ISO 14001	✓	The plans are not in place yet and could therefore not be verified by any third party, the lack of plans is a gap but considered **a non-significant gap** since there is still time for these plans to be developed (and eventually third-party verified as a part of the ISO certifications in place for the company).
Plans address all key social and environmental issues	✓	see above			
Plans address construction-related waste, noise, air quality, land disturbance and rehabilitation	✓	See above	Independent review mechanisms are utilised	✓	Evidence is showing that HS Orka is regularly auditing its finances and management systems. It has been verified (by decisions of both boards)

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
Environmental and social impact assessment and key associated management plans are publicly disclosed	✓	See above			that these procedures will be transferred to both VesturVerk and the project site once implementation starts.
An optimisation process has been undertaken to assess the project siting and design options	✓	The project design has been revised based on both environmental and social considerations (such as visual and downstream-flow impacts) that have been raised during consultations with various stakeholders. Furthermore, there is also ongoing investigations for further optimisation of the project's capacity to 82 MW by adding another turbine (without adding any more negative visual impacts to the landscape, however, the variability of the downstream flows would be affected negatively).			

OUTCOMES					
Environmental and social plans avoid, minimise and mitigate negative impacts	✓	These plans have not been developed in detail (see above). The lack of finalised plans is seen as **a non-significant gap** at the time of the assessment as the plans are on track to be developed.	Environmental and social plans avoid, minimise, mitigate and compensate negative project impacts	✓	The Framework ESMP is under preparation at the time of this assessment. There is every indication from the drafts made available to the assessors that these plans will be comprehensive and compliant with good international industry practice (GIIP).
The strategic fit of the project with needs for water and energy services, and relevant policies and plans can be demonstrated	✓	It has been demonstrated that there is a need for the energy services of this project (it has been put in the utilisation category in the Master Plan and it has not been ordered by the Icelandic Parliament (Alþingi) to be reassessed, even though this has been requested by stakeholders). It can also be demonstrated that the project fits with the regional plans of stabilising the energy grid of north-western Iceland and the priorities of the Vestfjords Development Organisation. For further description see "Assessment of needs for water and energy services"	Plans provide for enhancements to pre-project environmental or social conditions or contribute to addressing issues beyond those impacts caused by the project	✓	See above
The final project siting and design has responded to environmental and social considerations	✓	The project design has been revised based on both environmental and social considerations (such as visual and downstream-flow impacts) that have been raised during consultations with various stakeholders. The project design can therefore be considered to have responded to these considerations even if there are still	The project is one of the priority options to address demonstrated needs	✓	The project is in the utilisation category of the government's Master Plan and has remained as such even if there has been requests to reassess the project's status. It is also a priority project of the Vestfjords Development Organisation

		pending issues (see advanced requirements).			
The project can pay for social and environmental plans and commitments	✓	The plans are not established yet, but the developer has already shown capacity to pay for early community-related commitments in the Arneshreppur Municipality, and obligations in the agreement with Landsnet for the development of the transmission connection.	The final project siting and design is optimal with respect to sustainability considerations for siting and design	✕	The project design has been revised based on issues that have been raised during consultations with various stakeholders and appears near optimal from a technical point of view (with the exception of the dam height issue – see Section 6). The socio-environmental considerations are under preparation at the time of this assessment, with Landsnet's permitting process for the transmission line ongoing the preparation of the project's Framework ESMP as well as the work on pre-construction work permits (which need to contain consideration of e.g. access-road alignment, noise, dust etc.). However, the design cannot be considered to be optimal with respect to all sustainability considerations at the time of this assessment, meaning that this requirement is not met.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	9 out of 12 (75%)

Summary of findings and other notable issues
There is a debate in Iceland regarding whether there is really a need to expand the power supply even farther (according to the available statistics from 2021 from the national energy agency, more than 77% of the power supply goes to energy-intensive industries). There is, however, a clear need to expand electricity generation in Vestfjords to supply reliable and renewable energy (the un-serviced demand is presently provided by diesel generators) in support of both domestic needs but also the existing and potential industrial demand.

Summary of findings and other notable issues
Based on the priorities in the Master Plan and Landsnet's assessment and priorities for Vestfjords, it is clear that this project is a priority. Based on this, the project generally meets the minimum requirements of the standard (regulatory requirements are met and the necessary plans for the management system of the project are being developed). The Environmental Agency is worried that a quarter of the undisturbed land in Vestfjords will be affected by the cumulative impacts of the project (transmission lines, other hydropower projects etc.) and the project's past assessment work did not include a well-developed CIA. The developers have commissioned a CIA and a draft report (which will be updated when Landsnet's permitting process for the transmission line is finalised) was made available to the assessors. This meets the minimum-level requirement. There are some advanced-level requirements which relate to the ongoing opposition against the project in the community, where VesturVerk/HS Orka have shown that there are ongoing communication processes to assess and address these issues, but there is no conclusive evidence as to how and when these issues will be resolved. Examples of such community concerns are disturbance caused by increased traffic volumes during construction and the loss of wilderness areas. These issues mean that 3 of the 12 advanced-level requirements are not met.

Relevant evidence	
Interview	1-8, 10, 12, 14, 15, 19, 21-25, 27-38
Document	1-17, 19-49, 53-61, 63, 69, 70, 82-86, 91, 92, 96-100, 102-108, 117, 118, 124-135, 138, 139, 141, 144-150, 152, 158, 160-162, 177, 180, 186-188, 194-196, 199, 201, 203, 204 and 215-226
Photo	1-28

2 Labour and Working Conditions

Scope and Principle
This section addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The principle is that workers are treated fairly and protected.

Background	
Labour requirements during implementation (full-time equivalent)	350 over the estimated construction time of 2.5-3 years
Labour requirements during operation (full-time equivalent)	At least one full-time employee and potentially some secondary jobs in the district in connection to maintenance projects
Applicable key human resources regulations	The Labour Code, The Act on Working Terms and Pension Rights Insurance, No 55/1980
Applicable key occupational health and safety (OH&S) regulations	Act on the Working Environment, Health and Safety in Workplaces, No. 46/1980 Regulation No. 785/1999 on work camps; No. 798/1999 on sewers and sewage; Rules on Working Conditions, Health and Safety Measures at Construction Sites and Other Temporary Construction No. 547/1996; Regulation No. 920/2006 on the organisation and implementation of occupational health and safety activities in workplaces. Law no. 7/1998 on hygiene and pollution prevention.
Identify the regulator for labour law and OH&S	The Labour Code is under the auspices of the Ministry of Social Affairs, which is ultimately responsible for this function of the government. This responsibility is mainly executed by two agencies, Vinnumálastofnun (The Directorate of Labour) whose principal role is to assist persons seeking employment as well as organising positive labour market actions, and Vinnueftirlitid (The Administration of Occupational Safety and Health) is the primary regulatory agency responsible for enforcing safety and health laws in Iceland. There are regional offices that handle the local monitoring and inspections (in Ísafjörður for the Vestfjords Region) to ensure compliance with the regulations.
Other relevant information	N/A

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Assessment of human resource and labour management requirements	✓	The Environmental Impact Assessment (EIA) covers these issues and meets the requirements of the legislation for licensing.	The assessment takes broad considerations into account, and both risks and opportunities	✓	The EIA itself does not take broad considerations into account but procedures in place at HS Orka shows that these considerations are taken into account for their projects. These assessments are mainly done by the contractor(s) hired by HS Orka. Since there is ample time available to address these aspects before the start of construction, this requirement is considered as on track to be met.
The assessment includes project occupational health and safety issues, risks, and management measures	✓	See above			
MANAGEMENT					
Human resource and labour management policies, plans and processes have been developed for project implementation	✓	No project specific plans are in place (except the framework from the EIA). The Framework ESMP is being developed at the time of this assessment, and there is a firm commitment from the developers that these plans will, at a minimum, be equal to those of HS Orka, which fully meet this requirement.	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	The project's management plans are being developed (see left and above). Evidence shows that HS Orka has very comprehensive policies and processes in place to anticipate and respond to emerging risks and opportunities for its general operations and similar projects, it is expected that similar policies, plans and procedures will be implemented for this project as well.
Human resource and labour management policies, plans and processes have been developed for project operation	✓	See above			
These plans cover all labour management planning components, including those of contractors, subcontractors and intermediaries	✓	See above			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
OUTCOMES					
There are no identified inconsistencies of labour management policies, plans and practices with internationally recognised labour rights	✓	Iceland has ratified all 10 of the International Labour Organization's (ILO) fundamental conventions and all 4 of the priority governance conventions and HS Orka's policies, plans and practices are fully aligned with Icelandic regulations. The project-specific plans are not in place yet. Given the evidence from previous project developments, this lack of finalised plans is seen as **a non-significant gap** at the time of the assessment as the plans are on track to be developed.	Labour management policies, plans and practices are demonstrated to be consistent with internationally recognised labour rights	✓	HS Orka has recently been audited according to ISO 45001 and was recertified which, together with their best-practice HR management systems, demonstrate that their labour management policies, plans and practices are consistent with internationally-recognised labour rights. As the two boards (HS Orka and VesturVerk) have decided to apply HS Orka's management system to the project, this requirement is assessed as met.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	3 out of 3 (100%)

Summary of findings and other notable issues
Since the project is still at a fairly early stage of development, project-specific management plans and associated documents have not been finalised yet. The EIA assesses the conditions that are required according to the Icelandic law but is quite limited in its scope, by international standards. However, since there is still time to develop the necessary plans (will only be done by the contractor, supervised and approved by VesturVerk/HS Orka and in response to the Framework ESMP now being developed), the minimum requirements of the standard are met. When it comes to the advanced requirements, evidence has shown that HS Orka has very comprehensive policies, plans and processes to anticipate and respond to emerging risks and opportunities for its general operations on similar projects (which the recent ISO 45001 audit has shown), and since there is a board decision within both HS Orka and VesturVerk that these policies and plans will be transferred to the project, the advanced requirements are on track..

Relevant evidence	
Interview	1, 7, 12, 13, 16, 18, 36, 38

Document	2, 3, 4, 58, 64-72, 81-90, 102, 109-115, 126, 127, 144-146, 152, 159-162, 215 and 216
Photo	none

3 Water Quality and Sediments

Scope and Principle
This section addresses the management of water quality, erosion and sedimentation issues associated with the project. The principle is that water quality in the vicinity of the project is not adversely impacted by project activities, and that erosion and sedimentation caused by the project are managed responsibly and do not present problems with respect to other social, environmental and economic objectives.

Background	
Water Quality	
Description of water quality	The Hvalá and Eyvindarfjarðará rivers are described (Icelandic Met Office, https://vatnavefsja.vedur.is/) as having *high ecological status* for all identified subsections, river segments and lakes alike, and with no pressures active upon them. The chemical status is listed as *Unknown*, but the water samples taken as part of Hvalávirkjun's project preparations indicate Class I status, the highest status, according to the Icelandic standards. The EU Water Framework Directive classification (ongoing process) will in most likelihood classify the Rjúkandi, Hvalá and Eyvindarfjarðará rivers as having high ecological status (as they are presently in a natural state down to only a few hundred metres before their outflow into the Arctic Ocean), and as having good physical and chemical status (again, almost entirely undisturbed by human activities). Note that the impacts to the ecological status is covered under Section 6.
Key water-quality issues	None
Main influences on water quality	None at the moment
Sedimentology	
Key sediment issues	None. There is very low influence from glacial runoff. <8% of the catchment area of the Eyvindarfjarðará sub-unit are covered by glaciers, even if the Drangajökull glacier is located immediately to the west and north-west of the project-affected area. Hvalá and Rjúkandi have no glacial influence at all.
Sediment load (tonnes/year)	Not known, but very low with numerous small lakes in the catchment which, in spite of their significant size in comparison to the throughflow, show no apparent sedimentation issues.
Catchment area at the dam	There are several dams. The project's total catchment area at the intake is 191 km^2.

Other relevant information	The project is located in a nearly pristine, remote area of north-western Iceland. This means no pre-project environmental loads on the rivers and lakes except very little from local landowners and the few tourists passing through in the summer months, and all that in the last 200-400 metres up from the outflow into the Arctic Ocean. Law 36/2011 on water management protects water and aquatic ecosystems and Law 796/1999, with later changes, regulates pollution of water sources.

Minimum Requirements			**Advanced Requirements**		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Water quality issues assessment	✓	The EIA was surprisingly weak on water quality, presumably based on the (reasonable) assumption that Icelandic rivers in the project's location will have no pollution at all. However, this still requires a baseline against which to monitor. Given the ongoing work to address both the EU Taxonomy and Water Framework Directive requirements, the project has started thorough baseline data collection in April 2024 which will continue over the following years.	The assessment takes broad considerations into account, and both risks and opportunities	✓	The EU-related work on monitoring conducted during the spring of 2024 (at approximate minimum flow in the rivers) at 4 sampling locations and for no less than 42 water-quality parameters lays a solid foundation for future monitoring and corrective measures (if augmented with high-flow data) , if negative impacts were to develop. The express need for the project to abide by both Taxonomy and Water Framework Directive (WFD) requirements is a guarantor for broad considerations as well as a risk-based approach with appropriate indicators monitored.
Erosion and sedimentation issues assessment	✓	Given the very scarce overburden in the catchment, erosion and sediment entrainment will always be extremely low. Suspended sediment concentrations are now measured as part of the water-quality monitoring and are, as expected, very low.			
Identification of erosion and sedimentation impacts that may be caused by the project	✓	The only foreseeable erosion-inducing activities by the project will be related to the construction phase and the			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		unavoidable disturbances of the riverbed and movement of construction materials. Given the small volumes involved, sedimentation issues at problematic levels are highly unlikely to occur.			
Identification of erosion and sedimentation issues that may impact on the project	✓	Assessed but no such issues identified.			
An understanding of the sediment load and dynamics for the affected river system	✓	This issue is almost irrelevant in the Rjúkandi, Hvalá and Eyvindarfjarðará as the sediment load is so low as to be negligible. There is no or very little glacial runoff feeding the rivers (and only into Eyvindarfjarðará) as only a minute section of Drangajökull is located in the project's overall catchment.			
MANAGEMENT					
Plans and processes to address identified water quality issues have been developed for project implementation	✓	Project implementation is planned for no sooner than 2026. Appropriate plans (mainly dealing with construction management of sediment entrainment) will be developed during the later parts of the project-preparation period, based to a large extent on the additional data being collected and consideration of the final design of, most importantly, the road alignments. To develop such plans at this stage would be inappropriate.	Processes are in place to anticipate and respond to emerging risks and opportunities for water quality	✓	There is ample time to address the finalisation of these processes between a potential investment decision and the start of construction. The critical period for potential emerging risks is the construction period. The potential for opportunities in this aspect are close to zero, given the very high status of the baseline water quality. Plans are being developed and will be finalised before the planned start of

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		The lack of finalised plans is, therefore, seen as **a non-significant gap** at the time of the assessment, as the plans are on track to be developed.			construction in 2026, meaning this requirement is on track to be met.
Plans and processes to address identified water quality issues have been developed for project operation	✓	Project operation is planned for 2030-31. Operation-phase plans will be developed during the construction period, based to a large extent on the additional data being collected and experiences gained. To develop such plans at this stage would be inappropriate and likely miss most issues which will prove relevant nearer to the project's commissioning.			
Plans and processes to address identified erosion and sedimentation issues have been developed for project implementation	✓	See above for water quality.	Processes are in place to anticipate and respond to emerging risks and opportunities for erosion and sedimentation	✓	See above. Sedimentation during normal operations would not affect the project's operational capacity for many hundreds of years, possibly thousands. As such this requirement is not relevant.
Plans and processes to address identified erosion and sedimentation issues have been developed for project operation	✓	See above for water quality.			
OUTCOMES					
Plans avoid, minimise and mitigate negative water quality impacts arising from project activities	✓	The fact that the project will have to comply with the requirements of the EU Taxonomy and the WFD will guarantee that this requirement is	Plans avoid, minimise, mitigate and compensate	✓	Detailed water-quality management plans are being developed as described above. This requirement is, therefore, considered to be on track to be met.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		met. See also Section 6 for the ecological aspects of this.	negative water quality impacts		
			Plans provide for enhancements to pre-project water quality conditions or contribute to addressing water quality issues beyond those impacts caused by the project	✓	This requirement is irrelevant at Hvalávirkjun as the pre-project water quality is so high as to be impossible to improve, and the project is highly unlikely to cause any significant negative water-quality impacts.
Plans avoid, minimise and mitigate erosion and sedimentation issues arising from project activities	✓	These plans are not yet finalised. The construction phase is the only critical one in this respect, and plans will be developed as an integral part of the contractor's ESMP, based on the developer's Framework ESMP (under development at the time of this assessment). The lack of a finalised plans is, therefore, seen as **a non-significant gap**, as the plans are on track to be developed. before the start of construction.	Plans avoid, minimise, mitigate and compensate erosion and sedimentation issues arising from project activities	✓	See to the left.
Plans avoid, minimise and mitigate erosion and sedimentation issues that may impact on the project	✓	This issue is almost irrelevant in the Rjúkandi, Hvalá and Eyvindarfjarðará as the sediment load is so low as to be negligible. There is no or very little glacial runoff feeding the rivers (and only Eyvindarfjarðará) as only a minute section of Drangajökull is located in the project's overall catchment.	Plans provide for enhancements to pre-project erosion and sedimentation conditions or contribute to addressing erosion and sedimentation issues beyond those impacts caused by the project	✓	This requirement is irrelevant at Hvalávirkjun as the pre-project conditions are so good and the project is highly unlikely to cause any significant erosion/sedimentation impacts at all. Given that the project is implemented in a near pristine environment in terms of water quality and sediment transport, any additional measures directed at

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
					erosion and/or sediment transport could disturb the natural state of the high-altitude tributaries and lakes feeding the project's reservoirs.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	7 out of 7 (100%)

Summary of findings and other notable issues
Some water-quality assessments were carried out as part of the EIA but, likely as a result of the rivers' pristine state, it appears as if little attention was paid to the issue. There is comprehensive assessment work going on at the time of this assessment, mainly in order to comply with the EU directives on Taxonomy and Water Framework. These will provide a very comprehensive baseline against which future monitoring can be implemented. Since construction is not planned to begin until at least the summer of 2026, and operations not before 2030-31, most of the plans and processes to be developed before the end of the Preparation Stage are obviously still not finalised as they will be parts of the Lead Contractor's Environmental and Social Management Plan (ESMP), based on the Owner's Framework ESMP, in accordance with international best practice. With good plans and processes followed diligently by the contractor under the Owner's supervision, physical and chemical water-quality aspects are highly unlikely to cause any problems to the project or result in significant impacts from the project.

Relevant evidence	
Interview	1, 2, 7, 14, 21, 23, 25, 36, 38
Document	2-4, 16, 17, 20-23, 32, 36, 46, 58, 91, 92, 96-101, 124, 152, 192 and 215-219
Photo	1, 4, 8, 9, 12, 13, 14, 15, 18

4 Community Impacts and Infrastructure Safety

Scope and Principle
This section addresses impacts of the project on project-affected communities, including economic displacement, impacts on livelihoods and living standards, public health impacts, and impacts to rights, risks and opportunities of those affected by the project. This section also addresses project benefits and infrastructure safety during project preparation, implementation and operation. The principle is that livelihoods and living standards impacted by the project are improved relative to pre-project conditions for project-affected communities, and that life, property and community assets and resources are protected from the consequences of dam failure and other infrastructure safety risks. This section does not address requirements that relate to physical displacement or to Indigenous Peoples, which are addressed in Section 5 and 7. Other interested parties and groups are addressed in Section 10.

Background	
Community Impacts and Benefits	
Description of project-affected communities and how they are affected (distinguish between physically displaced (addressed in Section 5), economically displaced and other project-affected communities and include estimated number of people and households)	The affected community is the Árneshreppur municipality in the Vestfjords region. The municipality has only around 50 registered inhabitants and is Iceland's smallest. The Icelandic Government's policy is to join municipalities such that none has less than 1 000 people, not an easy task in sparsely populated rural regions of the country where this would mean the merger of many present municipalities. There are no people living directly downstream of the dams and consequently no risk to lives due to dam failure. The main impacts are instead related to disturbance during implementation (noises, pollution and dust from construction traffic that will pass nearby houses in the municipality) and the loss of undisturbed wilderness (loss of wilderness areas are covered under topic 1 and 6).
Agencies relevant to land acquisition	Ministry of Infrastructure and Skipulagsstofnun (The National Planning Agency), Ministry of Food, Agriculture and Fisheries (Land Reclamation) through Land og Skógur (The Land and Forest Institution).
Agencies relevant to livelihood restoration and project benefits	Land og Skógur, VesturVerk/HS Orka, The Icelandic Road Authority, Landsnet, Vestfjarðastofa (The Vestfjords Regional Development Office), Orkubú Vestfjarða (the electricity distribution company in Vestfjords)
Infrastructure Safety and Public Health	
Type of dam	Earth-fill dams
Dam height (m)	22, 20, 27, 8 and 14
Probable maximum flood (m^3/s)	Not relevant in this project

Design flood (expressed as estimated flood with return period)	307 m^3/s in Vatnalautalón, 105 m^3/s in Eyvindarfjarðarlón and 125 m^3/s in Hvalárlón, 1000-year return period (consequence class 1 according to the Norwegian dam safety guidelines that have been used).
Spillway capacity (m^3/s)	307 m^3/s in Vatnalautalón (split into two equally sized spillways in two different locations that both diverts the flow into Rjúkandi (another creek to the south)), 105 m^3/s in Eyvindarfjarðarlón and 125 m^3/s in Hvalárlón.
Spillway crest elevation (m.a.s.l.)	348 m.a.s.l. (Vatnalautalón), 315 m.a.s.l. (Eyvindarfjarðarlón), 315.3 (Hvalárlón)
Headrace length (m)	3 000 m headrace tunnel (100 m steel pipe)
Headrace width (m)	4.5*4.5 m
Headrace capacity (m^3/s)	20 m^3/s
Seismicity	Volcanic activity is high in Iceland with considerations always having to be taken for projects, however, this project is located in a part of the country with very low seismic activity.
Geology	Continuous homogeneous stratigraphic rock from Tertiary Age with noticeable faults and cracks in the landscape at Hvalá. Frost-weathered rock on mountain slopes is abundant, but it is rather poor in material. As a result, the basalt layers become a clear and prominent feature in the landscape and the same can be said about the faults and cracks. Sediments are found only in existing rivers and in their estuaries. There is almost no soil above 200 m.a.s.l., and below that level it is thin.
Dam safety regulatory authorities	There is no dam safety regulator in Iceland
Local presence/capacity of emergency services	There is a local emergency unit in Árneshreppur with the capacity to respond to immediate needs in the case of incidents. In the case of more severe incidents, help can be received from well-functioning emergency services at regional and national levels.
Potential safety risks in this context	Dam break, the dams are categorised in consequence class 1 (low impact, no people at direct risk) according to the Norwegian Water Resources and Energy Directorate's (NVE) safety regulations
Degree of risk of dam failure and in what way	Low according to the EFLA review (the dam safety assessment that is ongoing by Verkis will describe this further). Iceland has a lot of seismic activity, but the north-western part of the country is one of the more stable parts.
Population at risk of dam break (locations, numbers)	None
Dam safety standards followed	There are no Icelandic dam safety standards, Norwegian Dam Safety Standards (developed by NVE) are used
Agencies relevant to dam safety	The Civil Protection Agency, The Public Health Authority Vestfjords
Other infrastructure safety issues	None
Description of key public health issues	The only identified public-health issue related to the project would be the noise and dust associated with construction traffic. Furthermore, the limited access to public-health services in the municipality could potentially be an issue during construction when the increased workforce would put a strain on the municipal services.

Agencies relevant to public health	• Department of Health or Department of Public Health and Science (Ministry of Health) – Health Care • Vinnueftirlitid (The Administration of Occupational Safety and Health) – responsible for the occupational health and safety in general in Iceland • The Public Health Authority in Vestfjords – responsible for monitoring and licensing of permits in the region.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✓) or no (✗)		**Findings and Observations**	**Requirement is met: yes (✓) or no (✗)**		**Findings and Observations**
ASSESSMENT					
Community Impacts and Benefits					
An assessment of issues relating to project-affected communities	✓	The Environmental Impact Assessment (EIA) and the following assessments (such as the Social Impact Assessment on both municipal and regional level by the University of Akureyri) that have been conducted since the finalisation of the EIA have assessed issues relating to project-effected communities.	The assessment takes broad considerations into account, and both risks and opportunities relating to project-affected communities and project benefits	✗	HS Orka has initiated a comprehensive work to assess the project-affected communities' situation and how the project can benefit them, however, evidence from interviews with representatives of the local community shows that the work has not covered all the aspects of why some community members are opposed to the project (see above under Section 1). The loss of wilderness areas is covered under Sections 1 and 6. While significant efforts are under way to address the key project community-related risks (including a comprehensive Communication and Consultation Plan), the lack of conclusive evidence that all risks are addressed to the extent possible means that this requirement is not (yet) met.
This assessment utilised local knowledge	✓	All the project-related assessments have been conducted by Icelandic experts and local community members have been consulted on various topics throughout the process.			
An assessment of opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing strategies	✓	VesturVerk/HS Orka has done an assessment of opportunities to increase the development contribution of the project where potential projects are listed, these have been communicated and consulted with the local community.			
The pre-project baseline against which delivery of benefits can be evaluated	✓	The pre-project baseline was established as part of the EIA and SIAs.			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
post-project is well-documented					
Infrastructure Safety and Public Health					
An assessment of dam and other infrastructure safety risks during project preparation, construction, and operation	✓	This has not been assessed at the time of the assessment and, therefore, constitutes a gap, however, this is considered **a non-significant gap** since there is evidence that there is an ongoing process to address this (VesturVerk/HS Orka has assigned Verkis to assess the dam safety risks as a part of the ongoing design review).	The assessment takes broad considerations into account, and both risks and opportunities relating to infrastructure safety	✓	The assessment has not been done at the time of compiling the report, but this requirement is assessed as on track to be met, since there is an ongoing process to address it.
This assessment was conducted using appropriate expertise	✓	The local consultancy firm Verkis (one of the largest in Iceland) has received the assignment by VesturVerk/HS Orka, and the work is under way.			
Public health issues assessment	✓	This was conducted as part of the EIA.	The assessment takes broad considerations into account, and both risks and opportunities relating to public health	✓	The ongoing communication and consultation process that aims to address the concerns and wishes of the community has assessed and started to address some of the community's concerns but not all. Noise and dust caused by construction-related traffic is the key one in terms of public health. Work is ongoing in conjunction with applications for pre-construction work permits, which will address these concerns and alleviate the risks. The requirement is, hence, considered as on track to be met.
This assessment includes public health system capacities and access to health services	✓	The EIA concludes that the access to health services in Árneshreppur is very limited. A doctor visits on a monthly basis and the closest health facility is in Hólmavik, 1-2 hours away, depending on location in Árneshreppur. This would, therefore, be something that needs to be addressed during implementation of the project (with an estimated 350 full-time employees present in the area – a 700% increase of the summer-period population).			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		The added complication that the road to the municipality is not cleared of snow during the winter months makes the airport and harbours important entry point for healthcare and emergency staff.			
This assessment has considered health needs, issues and risks for different community groups	✓	See above			
MANAGEMENT					
Community Impacts and Benefits					
Management plans and processes for issues that affect project-affected communities have been developed	✓	The Framework ESMP is being developed at the time of this assessment. The lack of finalised plans is considered **a non-significant gap** as the start of construction is at least one year away, and the plans are on track to be developed.	Processes are in place to anticipate and respond to emerging risks and opportunities relating to project-affected communities and project benefits	✓	VesturVerk/HS Orka has initiated a comprehensive communication and consultation programme in the local community to anticipate and respond to emerging risks and opportunities relating to project-affected communities and project benefits. This aspect, along with the overall attention to risks and opportunities, is described under Section 1 above and the conclusion is the same here, the requirement is met through the overall management processes in place at VesturVerk/HS Orka.
These plans and processes include monitoring procedures, utilising local expertise when available	✓	See above			
If there are formal agreements with project-affected communities, these are publicly disclosed	✓	See above			
Project benefit plans and processes have been developed for project implementation that	✓	See above			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
incorporate additional benefit or benefit sharing commitments					
Project benefit plans and processes have been developed for project operation that incorporate additional benefit or benefit sharing commitments	✓	See above			
Commitments to project benefits are publicly disclosed	✓	See above			
Infrastructure Safety and Public Health					
Dam and other infrastructure safety management plans and processes have been developed for project implementation	✓	As stated for many requirements above, the preparation of a Framework ESMP is ongoing at the time of the assessment, making the lack of finalised plans **a non-significant gap.** In addition, the updated, clear and concise, Communication and Consultation Plan in combination with the Framework ESMP means this requirement is on track to be met	Processes are in place to anticipate and respond to emerging infrastructure safety risks and opportunities	✓	VesturVerk/HS Orka has shown evidence that they have a rigorous management system in place to anticipate and respond to emerging infrastructure risks and opportunities on their existing projects. It has been verified (by decision of the board) that these policies and procedures will be transferred to both VesturVerk and the project site once implementation starts.
Dam and other infrastructure safety management plans and processes have been developed for project operation	✓	See above			
These plans have been developed in conjunction	✓	See above	Plans provide for public safety measures to be widely	✓	As stated for many requirements above, the preparation of a

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
with relevant regulatory and local authorities			communicated in a timely and accessible manner		Framework ESMP is ongoing at the time of the assessment. The updated Communication and Consultation Plan will combine with the Framework ESMP to meet this requirement.
Plans provide for communication of public safety measures	✓	See above			
Emergency response plans include awareness and training programmes and emergency response simulations	✓	See above	Emergency response plans are independently reviewed	✓	See above
Dam safety is independently reviewed	✓	See above			
Plans and processes to address identified public health issues have been developed for project implementation	✓	See above	Processes are in place to anticipate and respond to emerging public health risks and opportunities	✓	See above
Plans and processes to address identified public health issues have been developed for project operation	✓	See above			
OUTCOMES					
Community Impacts and Benefits					
Plans provide for livelihoods and living standards impacted by the project to be improved	✓	No project-specific plans are in place (except the framework from the EIA) but a Framework ESMP is being developed at the time of the assessment. The lack of finalised plans is considered **a non-significant gap** at	Plans provide for livelihoods and living standards that are impacted by the project to be improved with the aim of self-sufficiency in the long-term	✓	As stated for many requirements above, the preparation of a Framework ESMP is ongoing at the time of the assessment. The aim of self-sufficiency will undoubtedly be helped by the

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		the time of the assessment, as the plans are on track to be developed.			increased tax revenue for the municipality.
Plans provide for economic displacement to be fairly compensated, preferably through provision of comparable goods, property or services	✓	See above	The project contributes to addressing issues for project-affected communities beyond impacts caused by the project itself	✓	VesturVerk/HS Orka is, through its communication and consultation programme in the community, working on assessing the community's priorities when it comes to finding projects that can contribute to the community's benefit (beyond the project-related benefits).
Plans deliver benefits for communities affected by the project	✓	See above	Plans deliver significant and sustained benefits for communities affected by the project	✓	See above, plans are under development, meaning the requirement is on track to be met.
Infrastructure Safety and Public Health					
Plans avoid, minimise and mitigate safety risks	✓	No project specific plans are in place (except the framework from the EIA). This is considered **a non-significant gap** since there is still time to establish these before implementation, and a dam-safety assessment with relevant plans and processes for safe operation is under way.	Plans contribute to addressing safety issues beyond those risks caused by the project itself	✓	VesturVerk/HS Orka has shown evidence that they have a rigorous management system in place to anticipate and respond to emerging risks and opportunities on their existing projects when it comes to safety issues. It has been verified (by decisions of both boards) that these policies and procedures will be transferred to both VesturVerk and the project site once implementation starts.
Plans avoid, minimise and mitigate negative public health impacts arising from project activities	✓	As stated for many requirements above, the preparation of a Framework ESMP is ongoing at the time of the assessment, hence the	Plans avoid, minimise, mitigate and compensate negative public health impacts	✓	See above

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		lack of a finalised plan is assessed as **a non-significant gap**, as the plans are on track to be developed.	Plans provide for enhancements to pre-project public health conditions or contribute to addressing public health issues beyond those impacts caused by the project	✓	See above

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	13 out of 14 (93 %).

Summary of findings and other notable issues
The project has conducted a satisfactory assessment of the community impacts and infrastructure safety issues to meet the minimum requirements of the standard (regulatory requirements are met, assessments not in place have been shown to be ongoing, and there is still plenty of time to develop the necessary plans for the management system of the project). While significant efforts are under way to address the key project community-related risks (including the recent development of a new comprehensive Communication and Consultation Plan), the lack of conclusive evidence that all risks are addressed to the extent possible means that one advanced-level requirement is not (yet) met. It should be noted, however, that a considerable amount of work on management plans which can satisfy a clear majority if the community members remains to be addressed in the time between a definitive decision to take the project forward, and a possible start of construction.

Relevant evidence	
Interview	1-4, 6, 7, 14, 15, 17, 19, 21, 22, 26-38
Document	2-6, 8, 14, 16-18, 20-22, 24, 30, 32-34, 42-45, 58, 61, 91, 93-96, 98, 105-108, 113, 115, 117, 118, 126, 127, 152, 177, 178, 180-182, 187, 188, 201, 207, 208, 215 – 218, 220 – 223 and 225
Photo	11

5 Resettlement

Scope and Principle
This section addresses physical displacement arising from the hydropower project development. The principle is that the dignity and human rights of those physically displaced are respected; that these matters are dealt with in a fair and equitable manner; and that livelihoods and standards of living for resettles and host communities are improved. This section does not address those that are only economically displaced, who are addressed in Section 4.

Background	
Does the project require or result in any physical displacement of people? Please state the evidence on which this determination is made.	
Yes, this section is relevant	N/A
No, this section is not relevant	There are only a handful of residents in the area, and all of these live only seasonally in the area. Nobody will be physically displaced.

6 Biodiversity and Invasive Species

Scope and Principle
This section addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the project. The principle is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the project-affected area that are sustainable over the long-term, and that biodiversity impacts arising from project activities are managed responsibly.

Background	
Short description of the ecological region in the project area	Alpine Tundra. The area above the immediate coastal zone of a few hundred metres' width is a wilderness area and almost entirely untouched by human activity, including tourism. The areas closest to the coast are covered by two farms, sheep are grazing in that zone.
Protected areas (national parks and reserves etc) and their distance from the project	There are 9 protected areas in the Vestfjords region. Most of these are located in the southern and western parts of Vestfjords, but there are two areas to the north of the project area. Drangar is a designated Wilderness Area and Hornstrandir is a Nature Reserve. Many Icelanders regard Hornstrandir as a top candidate for elevation to national-parks status. Icelandic regulations for the "Wilderness" concept states that areas defined as wilderness are those effectively without impacts from human activities, interpreted as being at least 5 km from any human-originated installation such as houses, fences, roads, transmission lines etc., etc.
Critical habitats in the project area, including important bird areas, hotspots of endemism etc.	No critical habitats have been identified
# threatened species in the directly affected area: terrestrial	There are no identified threatened terrestrial species in the area
# threatened species: aquatic	There are no identified threatened aquatic species in the area. The wild Atlantic Salmon in the Arctic Ocean is in a state of rapid decline, but the salmon do not utilise the project-affected river stretches and the threats to the salmon population come mainly from environmental degradation caused by salmon farming, as well as by climate change with resulting warming waters.

Any other species of conservation importance	Arctic Foxes are threatened in many other parts of the Arctic, but not in Iceland, where they are, instead, viewed almost as pests and regularly hunted (without apparent impacts to the population).
Migratory pathways	Waterfalls quite close to the outflows into the Arctic Ocean preclude long-distance up-migration into the Eyvindarfjarðará and Hvalá rivers (Rjúkandi is a tributary to Hvalá). Salmon and Sea Trout spawn in the immediate ocean-near stretches of both rivers and are fished from the sea, not from land. Trout and Arctic Char live in localised populations in the rivers and lakes respectively. The fish are generally dwarfed, but healthy.
Invasive species: terrestrial	There are two, one mammal and one plant. The American Mink (*Neovison vison*) is a well-established invasive pest species (as it is across all of northern Europe). It lives mainly along the coast and on the islands where it avoids the competition of the Arctic Foxes. The project will not have any interaction with the mink beyond a possible (and welcome) increased hunting pressure of construction workers were allowed to hunt them. The plant is the Alaskan Lupine (*Lupinus Nootkatensis*) and divides Icelanders, as experts view it as the strong invasive it is regarded in many parts of Europe, while others tend to look at the extensive carpet blooms occurring in summer as a welcome splash of colour. This, of course, makes it even more difficult to eradicate or even control.
Invasive species: aquatic	None identified.
Key threats to biodiversity	Climate change, cruise-ship tourism with the associated pollution to the marine environment.
Agencies involved in biodiversity conservation	The Environment Agency (Umhverfisstofnun) of the Ministry of Environment, Energy and Climate has the main responsibility. The Planning Agency (Skipulagsstofnun) is the main reviewer of EIAs, recommending further necessary studies and mitigation before approval.
Other relevant information	The area has a very harsh climate and has low species diversity and abundance.

Minimum Requirements			**Advanced Requirements**		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Assessment of terrestrial biodiversity	✓	The 2017 Environmental Impact Assessment (EIA) studied the terrestrial flora and fauna to a satisfactory level of detail. The terrestrial biodiversity is very species poor, and there are also very few individuals of any present species. The	The assessment takes broad considerations into account, and both risks and opportunities	✘	The assessments already carried out and additional ones planned in order to address requirements from EU Taxonomy and Water Framework Directive (WFD) demands as well as the EIA procedures for the transmission line are and will be

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		fauna is mainly birds, and the vegetation is dominated by mosses and grasses up to approximately 200 m.a.s.l., above which there is almost no soil, and the vegetation cover is dominated by lichen, mosses and very few flowering plants which find crevices with sufficient soil in which to grow. The Planning Agency requested a more detailed bird study when reviewing the 2017 EIA. This was added and approved.			comprehensive and address both risks and opportunities. The project, under its earlier design would have caused at least one significant residual impact in that reservoirs would have been near totally drained towards the end of the low-flow season, effectively limiting the available habitat of fish and much of the rest of the aquatic life from the reservoirs. The need to operate like that was the direct result of the requirement to make the dams as low as possible in order to "fit into the environment" as well as possible – creating the lowest-possible visual impact. This opinion is highly questionable in the project environment, where very few people will ever venture as high as the waterfalls, which are all located well below the dam locations, and probably nobody as high as the lowest dam (except for access via the new road necessitated by the transmission line). The project is undergoing a design review at the time of the assessment, a review that will hopefully address this concern by raising the dams somewhat to increase the dead storage of the reservoirs to a point that makes them
Assessment of aquatic biodiversity including passage of aquatic species and loss of connectivity to significant habitat	✓	The 2017 EIA and the additional ecological study conducted later in 2017 (requested and later approved by the Planning Agency) studied aquatic biodiversity in lakes, ponds and rivers in the project area. The fauna and flora are very species-poor with resident populations of some Sticklebacks and stunted Arctic Char in highland lakes, and few trout in the rivers. No significant connectivity issues will emerge as the river-resident fish do not migrate and salmon and sea trout cannot pass natural migration obstacles located below project infrastructure. Additional assessment of aquatic ecology will be carried out (benthos, chlorophyll etc.) as part of the WFD requirements and supported and supervised by Hafrannsóknastofnun			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		(Haf og Vatn – The Marine and Freshwater Institute), a newly created merger of Government agencies for the marine a fresh-water environments.			viable as ecological refugia, also at the end of the low-flow season in spring. However, the fact that a revised more sustainable design has yet to be identified means that this requirement is not (yet) met.
Assessment of risks of invasive species	✓	There are two main invasives of relevance to the project. The mink is not regarded as a risk to or from the project but the lupin, which is present in other parts of the Vestfjords region but not in the project municipality of Àrneshreppur, is assessed as a priority issue.			
MANAGEMENT					
Plans and processes to address identified biodiversity issues have been developed for project implementation	✓	Detailed biodiversity management plans are not yet developed as an investment decision is not yet made. There is ample time to address this between a potential investment decision and the start of construction and the Framework ESMP is being prepared at the time of this assessment. This is, therefore, seen as **a non-significant gap** at the time of the assessment, as the plans are on track to be developed.	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	Click here to enter text. See to the left, the Framework ESMP under development is on track to put sufficient process in place, in line with HS Orka's existing management processes.
Plans and processes to address identified biodiversity issues have been developed for project operation	✓	See above for project implementation.	Commitments in plans are public, formal and legally enforceable	✓	All socio-environmental management plans are publicly available by law. The legally required and enforceable Framework ESMP is on track to be developed in time for the start of project construction.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
OUTCOMES					
Plans avoid, minimise, mitigate and compensate negative biodiversity impacts arising from project activities with no significant gaps	✓	Together with the aquatic-ecology issue discussed above, the most significant biodiversity-related issue identified is that of impact on wilderness. Icelandic Law prescribes that any road built should (under normal circumstances) be open to the public. This means that there will be a driveable (in summer) road across Ófeigsfjarðarheiði, an area that is today effectively unvisited by humans. This will remove approximately 400 km^2 (a 40 km-long transmission-corridor impact with 2 x 5 km width) from the total area of wilderness in the Vestfjords region. The loss of wilderness is important but is not considered a significant gap against this requirement as the positive impacts of the project are assessed as outweighing the negative. The assessments conducted and planned will provide a more than satisfactory baseline for the production of plans which should avoid, minimise or mitigate negative biodiversity impacts.	Plans avoid, minimise, mitigate and compensate negative biodiversity impacts arising from project activities with no identified gaps	✓	See to the left.
			Plans provide for enhancements to pre-project biodiversity conditions or contribute to addressing biodiversity issues beyond those impacts caused by the project	✘	The negative wilderness impacts, and potentially unaddressed impacts to the reservoir, should the design not be altered, means that this requirement is not met. Only the provision of well-considered offset(s) could potentially meet this requirement for the project, as the pre-project environment is almost all classified as wilderness area.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	3 out of 5 (60%)

Summary of findings and other notable issues
The biodiversity in the area is a reflection of the harsh arctic environment of the project area. Terrestrial and fresh-water diversity is low, as are species numbers, except for birds. There are no threatened species and no formally protected area is directly-affected by the project, but Icelanders put a high conservation value on any "wilderness area", a designation which applies to much of the project's directly-affected area (mainly the dam sites, reservoirs and transmission-line corridor) above approximately 300 m.a.s.l. Assessment of all aspects is satisfactory following some critical additions to the 2017 EIA as directed by the Planning Agency. One of two significant predicted impacts on biodiversity is avoidable. It is caused by the strong emphasis in the old design on keeping the dams as low as possible which would result in the near emptying of the project's three reservoirs in the spring every year. This would threaten the biota in what were previously (smaller) natural lakes with a significantly reduced habitat. Higher dams would allow a residual volume to remain in the reservoirs in the late-spring period, to serve as refugium for the aquatic biota. The design review presently ongoing will address this and hopefully arrive at slightly higher dams with a significantly greater residual volume in the reservoirs in spring. The other impact is unavoidable as it concerns the impact to the Ófeigsfjarðarheiði wilderness area. Approximately 400 km^2 (40 km in length and 5 km on each side) along the transmission-line route would be removed from wilderness classification, and the highland area could potentially be made accessible to cars in the summer period as roads in Iceland are generally required to be open to the public. Two invasive species are identified as either present or threatening. The American Mink is present in considerable numbers but populates mainly the immediate coastal areas and offshore islands to avoid competition with the top predator, the Arctic Fox. The Mink is likely impossible to eradicate (as experience from other northern European areas also shows), but the threat of Lupin infestation will necessitate a comprehensive management plan to avoid bringing it into the project area, one of the few in Iceland where it hasn't yet established itself.

Relevant evidence	
Interview	1-4, 7, 14, 15, 21, 23, 25, 36, 38
Document	2-4, 9-12, 16, 17, 20, 23, 32, 36, 47, 58, 61, 62, 91, 92, 96, 97, 119, 124, 125, 131, 132, 134, 135, 152 and 215-219
Photo	3, 4, 7, 8, 9, 10, 12, 14, 15, 18, 19, 22, 23, 24, 25, 26

7 Indigenous Peoples

Scope and Principle
This section addresses the rights at risk and opportunities of Indigenous Peoples with respect to the project, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalised and vulnerable segments of the population. The principle is that the project respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of Indigenous Peoples in an ongoing manner throughout the project life.

Background	
Are any of the affected people Indigenous Peoples? Please state the evidence on which this determination is made.	
Yes, this section is relevant	N/A
No, this section is not relevant	This section is not relevant as Iceland has no populations distinct from a dominant segment of society. With the exception of comparatively recent immigration to Iceland from all over the world, all Icelanders are descendants of the Vikings who settled the country, beginning in the late 800s.

8 Cultural Heritage

Scope and Principle
This section addresses cultural heritage, with specific reference to physical cultural resources, at risk of damage or loss by the hydropower project and associated infrastructure impacts (e.g. new roads, transmission lines). The principle is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance. This section does not address non-physical cultural resources, which are addressed in Section 1 and/or in Sections 5 and 7 when relevant.

Background	
Does the project affect any physical cultural resources? Please state the evidence on which this determination is made.	
Yes, this section is relevant	The Vestfjords region of Iceland, particularly the municipality of Árneshreppur, is rich in cultural heritage and natural beauty. Árneshreppur is one of Iceland's most remote and sparsely populated municipalities, located in the northern part of the Vestfjords. The cultural heritage of the region is deeply tied to its history, traditional ways of life, and unique landscape. Fishing: Fishing has been the lifeblood of the Vestfjords for centuries. Many of the settlements in Árneshreppur were built around fishing, and the preservation of old fishing techniques and small-scale coastal fishing remains a significant cultural element. Farming: Sheep farming is also an essential part of the area's heritage. Farmers traditionally use summer grazing areas in the highlands, and sheep herding practices have been passed down through generations. Based om the Survey report of December 2017 for archaeological remains, 47 physical archaeological remains have been identified in the area. In the report, all the characteristics are described and the level of risk for each is also determined.
No, this section is not relevant	N/A

Sites of physical cultural heritage affected by or in proximity to the project-affected areas	How they are affected
47 physical archaeological remains have been identified in the site based	The project area has archaeological remains that may be at risk due to the planned widening and modification of the road from Norðurfjörður to Hvalá. The Icelandic Museum requested that antiquities within 100 m on each side of the road be

on the Survey of archaeological remains due to changes and road improvements on the road from Norðurfjörður to Hvalávirkjun in Ófeigsfjörður. The archaeological remains are mostly: ruins of former farms, residences, gardens, surrounding fences.	measured with precise positioning devices, and based on the Law no.80/2012, the archaeological remains that are less than 50 m away from the construction area will be marked.

Agencies responsible for cultural heritage	Minjastofnun / Icelandic Heritage Foundation / Cultural Heritage Agency is in charge of the protection of archaeological and architectural heritage in Iceland. Law on cultural monuments no.80/2012 entered into force on January 1, 2013. As a result, two institutions were merged: Fornleifavernd riksijns and the House Improvement Committee. The agency comes under the Ministry of the Environment, Energy and Climate. Minjastofnun is responsible for ensuring the preservation of the nation's architectural heritage. Iceland is divided into eight cultural-heritage regions. Each of these has a cultural-heritage manager and council. The cultural-heritage managers are employed by the Cultural Heritage Agency and are its representatives in their respective regions.
Other important local or regional physical cultural heritage values and issues	The village of Djúpavík developed around its herring factory and experienced fluctuations in prosperity alongside the local fishing industry throughout the 20th century. When the herring-processing factory opened in 1935, it was the largest in Iceland, equipped with the latest technology for herring processing. However, the approximately 300 workers who relocated to this quiet village were taken aback by the absence of churches, police, and even a mayor in the surrounding area. Over the following years, a community gradually formed around the factory. Unfortunately, by the late 1940s, herring stocks in Húnaflói bay had dwindled, leading to the factory's closure in 1954. By 1968, Djúpavík was largely deserted. In 1985 the village was revived by an entrepreneurial initiative. The former women's quarters were converted into a hotel and a restoration process of the old factory and other structures began. Today, Hotel Djúpavík offers tours of the large, rusting factory, which now showcases artworks and installations. Each summer, the venue hosts “the Factory”, an event featuring concerts, activities, and exhibitions from artists worldwide. There is also an exhibition to commemorate the tragic events of a Basque whaler in Reykjarfjörður in the 1600s. An additional abandoned herring factory, located in Ingolfsfjörður, is in a state of significant decay but a community member has started work on rehabilitating it as a heritage.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
A cultural heritage assessment has been undertaken	✓	A first assessment was included in the EIA, and approval was granted by the National Planning Agency with the condition that a more detailed archaeological survey was conducted. This has been done by Vesturverk/ HS Orka, and the necessary documents were submitted to the National Planning Agency who approved the study.	The assessment takes broad considerations into account, and both risks and opportunities	✓	A very detailed study was done with the aim of identifying the archaeological remains, the opportunities/needs for further excavation and the risk they may be exposed to during the construction of the road. Any redesign and/or re-routing of the access and project roads would necessitate renewed assessment work.
The assessment includes:					
• identification and recording of physical cultural resources	✓	Documentation of physical cultural resources, archaeological findings, survey map, and photo documentation has been undertaken.			
• evaluation of the relative levels of importance	✓	Assessment has identified the value of each archaeological remains and its relative level of importance. An example of this is that the original study, part of the EIA, only worked in the highland area of Ófeigsfjarðarheiði. The main finds there consisted of stone cairns, most of which were vandalised. Their importance proved to be almost negligible when compared to the more interesting finds along the access-road alignment.			
• identification of any risks arising from the project	✓	This is addressed in the assessment and confirmed by Minjastofnun.			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
MANAGEMENT					
Plans and processes to address physical cultural resources have been developed for project implementation	✓	As stated for many requirements above, the preparation of a Framework ESMP (including a cultural-heritage/archaeology plan) is ongoing at the time of the assessment, making the lack of finalised plans **a non-significant gap.**	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	Processes are in place for this stage of the project, and everything is in accordance with the relevant law and regulation even though not stipulated in a specific plan yet.
Plans and processes to address physical cultural resources have been developed for project operation	✓	See above. These plans will likely be developed in the 2028-2029 period, in preparation for the plant going into operation in 2030-31.			
Plans include arrangements for chance finds	✓	See above. Furthermore, the Icelandic regulation has clear steps on how to handle chance-find procedures and these need to be included in the management plans of the project.	Plans are supported by public, formal and legally enforceable commitments	✓	Plans will be formal (as part of an Environmental and Social Management Plan) and hence enforceable by authorities at different levels.
Plans ensure that cultural heritage expertise will be on site and regularly liaised with by the project management team during construction	✓	Archaeologists certified and approved by the agency will be on site when needed (for instance due to the chance-find procedure mentioned above) during the construction of the road and other project infrastructure.			

OUTCOMES					
Plans avoid, minimise, mitigate and compensate negative impacts on cultural heritage arising from project activities with no significant gaps	✓	As stated for many requirements above, the preparation of a Framework ESMP is ongoing at the time of the assessment, making the lack of finalised plans **a non-significant gap.**	Plans avoid, minimise, mitigate and compensate negative cultural heritage impacts with no identified gaps	✓	HS Orka has shown that they have responded well to previous requests/reviews by The Cultural Heritage Agency. However, there are no plans at the time of the assessment but plenty of time to address this as commented on elsewhere. This requirement is, therefore, considered as on track to be met.
			Plans contribute to addressing cultural heritage issues beyond those impacts caused by the project	✗	The assessors have not been able to identify any evidence to support the conclusion that this requirement is met.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the **Minimum Requirements.**	4 out of 5 (80%)

Summary of findings and other notable issues
Processes are in place at this stage of the project, and everything is in accordance with the relevant law and regulation (documentations of physical cultural resources, archaeological findings, survey map, and photo documentation). There are no significant gaps at the minimum-requirement level. There is one gap at the advanced-requirement level in that there is no evidence that the project contributes to addressing cultural heritage issues beyond its own impacts.

Relevant evidence	
Interview	1, 2, 7, 15, 20, 21, 36, 37
Document	2-4, 7, 8, 13, 16, 17, 20, 58, 137, 152 and 215-218
Photo	2, 17, 21

9 Governance and Procurement

Scope and Principle
This section addresses corporate and external governance considerations for the project, and all project-related procurement including works, goods and services. The principle is that the developer has sound corporate business structures, policies and practices, and that procurement processes are equitable, transparent and accountable.

Background	
Key information on political context and public sector risks	The political stability of Iceland is ranked at 8th in the world, considerably higher than many other EU/EEA nations, including all the other Nordics. The country is a parliamentary democracy with general elections every four years. Freedom House ranks it as totally free with a score of 94 and Transparency International's Corruption Perceptions Index (CPI, 2023) ranks Iceland at 72 (19th place globally) ahead of countries such as the UK, France and the USA but behind well behind all its Nordic neighbours. There is, however, concern among independent watch groups regarding the reality behind some of the numbers listed above. There are concerns about the difference between "perception" (as in the acronym CPI) and "reality" and it is a fact that Iceland's CPI score is declining slowly but steadily – from 82 in 2012 to 72 in 2023. The country has a national debt of 64% of Gross Domestic Product (GDP) (2023), down from the year before and equal to, or lower than most large European nations.
Key information on corporate ownership and governance	80% of VesturVerk is owned by HS Orka. The remaining 20% are owned by Gláma investment slhf, a company owned to 80% (i.e. 16% of the total ownership share) equally by three private individuals: Gunnar Gaukur Magnússon, Valdimar Steinþórsson and Hallvarður E. Aspelund (all owners of land in the project area) and to 20% (i.e. 4% of the total ownership share) by local Icelandic bank Kvika banki. HS Orka (then known as Hitaveita Suðurnesja) was originally established by an act of the Icelandic Parliament in 1974 with ownership split between the Icelandic Treasury (40%) and seven municipalities in the area of the company's (then) operations (60% together). In the year 2000 the company´s legal structure was changed to a limited company (privatisation of the company began in steps from 2007). In 2008, following changes to the electricity legislation, the company was split into two, HS Orka being one of those. Today, HS Orka is the biggest private energy company in Iceland with the ownership split equally between Jarðvarmi, a holding company owned by 14 Icelandic pension funds, and infrastructure funds run by

	Ancala Partners in the UK. The company has a four-person board of directors and a management team led by the Chief Executive Officer with seven Executive Vice Presidents.
Details of the concession, if applicable	N/A

Key licensing or permitting requirements

The acquisition and status of the various licence and plan approvals are as follows:

License acquisition and municipal plan work				
No.	Licence/permit	Issuing agency/similar	When needed?	Have/have not/will apply (with app. date)
1	EIA report	Verkis	Completed	Completed
	EIA opinion	National Planning Agency & Arneshreppur	Issued	Issued - 3.6.2017
2	Municipal Master plan modification	National Planning Agency & Arneshreppur	Valid	Approved - 25.6.2018
	Municipal Master plan modification	National Planning Agency & Arneshreppur	Ongoing - 2025	Adding newest info - such as work camp and Landsnet connection. On Verkis work schedule 2024.
3	Local plan, construction site	National Planning Agency & Arneshreppur	Valid	Approved - 13.6.2019
	Local plan amendment, construction site	National Planning Agency & Arneshreppur	Ongoing - 2025	Adding newest info - such as work camp and Landsnet connection. On Verkis work schedule 2024.
4	Power Plant Permit (PPP)	National Energy Authority	x	*There must be an agreement on Landsnet's work, and at least an agreement on Hafro's work regarding what needs to be done about the water framework*
	• Application to National Energy Authority	National Energy Authority	2025	Finish application before end of the year 2025
	• Confirmation from NEA	National Energy Authority	2026	6-12 months later
5	Construction Permit (CP)	Arneshreppur		*A permission must be obtained from Minjastofnun, if it becomes unavoidable to dig up archaeological remains. A permission from the Icelandic Fishing Agency (Hafro) needs to be obtained for the main construction. The Environment Agency of Iceland needs to approve changes to watersheds.*

		• CP for preparation Work	Arneshreppur	Summer 2025	Application in preparation On Verkis work schedule 2024.
		• CP for main construction work	Arneshreppur	Summer 2026	Preparation is expected to start in 2025
	6	Building permit for work-camp	Arneshreppur	Summer 2025	With contractor - preparation is expected to start after the main construction permit is secured
	7	Building permit for powerhouse/other facilities	Arneshreppur	2027-2028	With contractor - preparation is expected to start after the main construction permit is secured
	8	Operation License for quarries (grave, rocks etc.)	Vestfjords Health Authority	2025	With contractor - preparation is expected to start in parallel to the preparation of the construction-licence application
	9	Operation Permit for the Power Plant	Vestfjords Health Authority	2029	VesturVerk/HS Orka before commissioning Hvalá PP
	VesturVerk/HS Orka are hiring an external service which keeps the company informed about any legislative/regulatory changes– VesturVerk/HS Orka analyse the incoming information and, if found relevant, include it into their own list of compliance needs.				
Key information on expected procurement strategy for this project (EPC, BOOT, etc)	Likely EPC with FIDIC contracting, but not yet decided.				
Other relevant information	N/A				

Minimum Requirements			**Advanced Requirements**		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Assessments have been undertaken of the following through the project development cycle:			There are no significant opportunities for improvement in the assessment of political and public sector governance issues	✓	HS Orka, as part of its 2023 Sustainability Report, reports against Global Reporting Initiative (GRI) with a complete coverage of section 2, the General Disclosures, which cover: organisation and reporting practices; activities and workers; governance (13
• political and public sector governance issues	✓	Internal assessment of governance needs led to a board decision by both HS Orka and VesturVerk that the full governance system, including issues			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		assessment measures, of HS Orka will be applied to VesturVerk's operations. The governance system is comprehensive with attention paid to all necessary aspects.			different aspects); strategy, policies and practices; and stakeholder engagement. The key political governance risk is clearly that of political decisions affecting material aspects such as Master Plan categorisation of the project, municipal planning processes etc. VesturVerk/HS Orka are addressing these risks, leaving no significant opportunities for improvement.
• corporate governance requirements and issues	✓	See above	There are no significant opportunities for improvement in the assessment of corporate governance requirements and issues	✓	See above
• major supply needs, supply sources, relevant legislation and guidelines, supply chain risks and corruption risks	✓	Procurement plans and needs are part of the interactive management-system platform. Suppliers are pre-evaluated and listed and evolving regulation and legislation is monitored by an external firm contracted for this purpose. Corruption risks are managed through a comprehensive risk-management routine which has recently been updated.	The assessment includes opportunities for local suppliers and local capacity development.	✓	VesturVerk/HS Orka chooses Icelandic suppliers whenever possible, and at a minimum Icelandic agents / representatives of well-regarded international suppliers. An important aspect is the ability of a supplier to manage any issues in Iceland, as opposed to having to wait for international movement of goods or staff.

MANAGEMENT					
Processes are in place to manage the following:					
• corporate, political and public sector risks	✓	The company's overall management system is certified according to ISO standards 9001, 14001 and 45001 and regularly audited. The company has policies for, among others, the following aspects: human resources, privacy, sustainability, occupational health and safety, climate and information security (but this is not certified according to ISO 27001 as yet). Risk assessment is based on ISO 31000, and risks are managed in a risk register which is continuously followed up. A Specific climate-risk assessment (in accordance with the Task Force on Climate-Related Financial Disclosures – TCFD) was conducted in 2022 and again in 2023, see Section 12. The sustainability reporting, including importantly, the GRI reporting, functions as an umbrella tool for all ESG management.	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	Risk management processes are divided by field of activity and included in the management system. The board has a sub-committee for auditing issues which is used as a risk-management tool. HS Orka has conducted reviews against the EU Taxonomy and Human Rights aspects in order to be able to manage any emerging risks. Several of these aspects are externally assured by an auditing company as part of the annual sustainability reporting. HS Orka regularly monitors developing regulations in the wind power sector in case they would decide to go into that area in the future.
• compliance	✓	There is a compliance platform for each unit with its own requirements and with linkages to the management processes. The external auditor for ISO standards verifies that compliance systems are in place for all systems and are getting	Contractors are required to meet or have consistent policies as the developer	✓	All suppliers are expected to meet the same requirements and ensure the same rights as those adopted by HS Orka and this is, hence, also valid for VesturVerk. There is full-chain liability in all contracts.

		integrated with the overall management system			In 2023 HS Orka hired the Icelandic analysis and evaluation company Reitun to conduct a separate sustainability assessment of its 10 largest suppliers. This was a very detailed undertaking resting on no less than 29 Environmental, Social and Governance (ESG) sub-categories. In late 2024 a further 12 suppliers were added to the list, now encompassing a clear majority of the company's suppliers (69% in 2024).
• social and environmental responsibility	✓	The sustainability policy, GRI reporting and the express commitment to six selected UN Sustainable Development Goals (SDGs) for business guidance – goals 5, 7, 9, 12, 13 and 15 – are the principal processes. Day-to-day socio-environmental management is the responsibility of the Technical Services unit while the CEO's office has a sustainability function directly attached to it to make sure that such issues are dealt with efficiently.			
• grievance mechanisms	✓	External grievances can be lodged via HS Orka's general e-mail address and phone number. E-mail addresses for direct contact with each employee is available on the web site. An anonymous grievance procedure has been developed for internal grievances.			
• ethical business practices	✓	The several policies relevant to ethical business practices apply across all business areas and are regularly followed up.	Sustainability and anti-corruption criteria are specified in the pre-qualification screening	✓	Pre-qualification at VesturVerk/HS Orka is normally conducted such that the company procures goods and services based on a shortlist of pre-approved suppliers (see above) and one company was excluded from participating in a tender in 2023 due to a poor sustainability record. As sustainability and ethics criteria are included in the requirements used in
• transparency	✓	Transparency is achieved throughout VesturVerk/HS Orka's business. The Sustainability Reports supported by the GRI yields significant opportunities for interested internal and external parties to review the business practices.			

Policies and processes are communicated internally and externally as appropriate	✓	All policies are available to employees via the Intranet. They are also available for external users in Icelandic. The English-language page appears to be lacking a listing of policies, but this is not regarded as a gap since they are available in Icelandic.			screening for the shortlist, this requirement is met.
Independent review mechanisms are utilised to address sustainability issues in cases of project capacity shortfalls, high sensitivity of particular issues, or the need for enhanced credibility	✓	External companies have been hired to evaluate suppliers, external consultants are used for various assessments and auditors review e.g. GRI reporting.	Anti-corruption measures are strongly emphasised in procurement planning processes	✓	All registered tenderers are invited to a pre-bid meeting which facilitates a transparent process, and anti-corruption measures are part of the criteria used for the "pre-qualification list" mentioned above. Hence this requirement is met.
Procurement plans and processes have been developed for project implementation	✓	It is too early to develop specific procurement plans for Hvalávirkjun as the start of construction is only planned for 2026. Because there is plenty of time available in which to develop these plans, the lack of such plans is considered **a non-significant gap** against this requirement at this stage, as the plans are on track to be developed. There are, however, general instructions available on which to base such plans. In the case of large contracts (e.g. turbines, generators) the board has to approve the framework surrounding such a procurement. FIDIC Green Book is standard in procurement outside of Iceland and IST 30 (an Icelandic			

		standard) when procuring from within the country. A steering group is formed with 7 members, two from the Board, and this group and the CEO have to sign off in order to guard against any bribery / corruption risks. The common practice is that a technical consultant is hired to put together the technical terms and that this "Owner's Engineer" manages the process together with HS Orka /VesturVerk's Procurement Officer.			
Procurement plans and processes have been developed for project operation	✓	It is too early to develop specific procurement plans for the operation of Hvalávirkjun, as the start of operation is only planned for 2030. The lack of such plans is, therefore, considered **a non-significant gap** against this requirement.			
CONFORMANCE AND COMPLIANCE					
The project has no major non-compliances relating to governance	✓	No major non-compliances have been identified by external auditors or the assessors.	There are no non-compliances	✓	No non-compliances have been identified by external auditors or the assessors. The external auditors have made remarks, as is common practice, but nothing at the level of non-compliance.
Processes and objectives relating to procurement have been and are on track to be met with:					
• no major non-compliances	✓	No major non-compliances have been identified by external auditors or the assessors.			
• no major non-conformances	✓	No major non-conformances have been identified by external auditors or the assessors.	There are no non-conformances	✓	The company and project have no existing non-conformances.

Any procurement related commitments have been or are on track to be met	✓	All commitments are, or are on track to be, met.			
OUTCOMES					
There are no significant unresolved corporate and external governance issues identified	✓	The existing opposition to the project in the Àrneshreppur municipality remains unresolved at the time of the assessment. This is a serious governance concern for the project. However, work is ongoing to find a solution which will secure VesturVerk's/HS Orka's ability to take the project forward in a sustainable manner. This is, therefore, assessed as **a non-significant gap** at the level of minimum requirements. The situation needs a solution before a definitive decision to take the project forward is made.	There are no unresolved corporate and external governance issues identified	×	The existing opposition to the project in the Àrneshreppur municipality remains partially unresolved at the time of the assessment. This means that this requirement is not met.
Procurement of works, goods and services across major project components is:					
• equitable	✓	The processes are open and transparent with no biases.			
• efficient	✓	There is no evidence that any inefficiencies are hampering project development.			
• transparent	✓	Apart from the supplier screening conducted by Icelandic company Reitun (see above), VesturVerk / HS Orka assign a UK-based company, Ecovadis, to assist with supplier assessments. The Procure system is used to track all procurements.	Opportunities for local suppliers including initiatives for local capacity development have been delivered or are on track to be delivered	✓	HS Orka procures locally (Iceland) whenever possible from a quality point of view. The company also contributes to capacity development and maintenance in the Icelandic work force. One example is a supplier's

• accountable	✓	The internal Procore system has a clear assignment of responsibilities as to who can sign for what. Accountability is tracked automatically.			staff being sent to Germany to work at the factory of an international supplier in order to manage installations back home. This, and similar efforts, also contribute to Icelandic experts being able to maintain professional certification in their fields.
• ethical	✓	All procurements comply with policies and processes, including for ethical considerations.			
• timely	✓	All procurements have been implemented in accordance with plans. The restart of project planning in 2023, following the shutdown of project developments in 2019 does not appear to have caused any scheduling problems.			
Contracts are progressing or have been concluded within budget or changes on contracts are clearly justifiable	✓	All contracts are on budget and justifiable management interventions are made as needed for any changes.			

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	10 out of 11 (91%)

Summary of findings and other notable issues
As the development work on the project has only recently been restarted after a period of dormancy, the governance system for VesturVerk specifically has not been finalised. In order to address this issue comprehensively the boards of directors of majority-owner HS Orka as well as VesturVerk have both made the decision to use the Governance systems of HS Orka fully also for VesturVerk and the Hvalávirkjun project. This results in a well-developed best-practice interactive and web-based system which is audited and certified in accordance with ISO standards 9001, 14001 and 45001. The risk-management system is based on ISO 31000, but not yet certified against it. Procurement practices are being improved and are on track to be fully internalised into the management system. FIDIC is used as contract template for international procurements and IST 30 for domestic ones. HS Orka addresses sustainability and anti-corruption criteria in its procurement procedures through a pre-screening list of its 22 major suppliers, a screening conducted by an external expert company.

Summary of findings and other notable issues
The only important corporate-governance concern the existing opposition to the project in the Àrneshreppur Municipality, see also sections 4 and 10. These aspects result in 1 significant gap against the advanced-level requirements.

Relevant evidence	
Interview	1, 4-12, 15, 27, 33, 36-38
Document	1-4, 15, 17, 20-22, 24-28, 30-32, 36, 37, 39, 40-45, 48, 49, 54-56, 58, 64, 65, 71-86, 91, 102, 105, 106, 109, 136, 138-175, 177, 180-182, 186-188, 201 and 209-218
Photo	11

10 Communications and Consultation

Scope and Principle
This section addresses the identification and engagement with project stakeholders, both within the company as well as between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc). The principle is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes establish a foundation for good stakeholder relations throughout the project life. Communications and consultation requirements unique to Indigenous Peoples are found in Section 7.

Background	
Directly affected community-level stakeholders	Árneshreppur is a municipality, located in the Vestfjords and is the direct affected community from the project. Árneshreppur is the lowest-populated municipality in Iceland with a population of 53, based on the 2024 census. It is worth mentioning that the population is not the same throughout the year. Almost 50% of the residents of this municipality live in the area only during the summer period, as it is often inaccessible during the winter, cut off from the rest of Iceland by snow on the roads. Fishing and farming are the main sources of livelihood.
Directly affected institutional-level stakeholders	Government institutions at all levels from local to central government, and across a number of sectors including energy, environment, water resources, cultural heritage, planning, safety, tourism etc. Businesses, NGOs and other civil society organisations.
Other relevant information	The project has been planned since 2015 and has a longer history as a concept. There is a lot of information and awareness among the stakeholders. Please note that the mention of "Section 7" in the Scope and Principles statement above is Not Relevant as Section 7 is Not Relevant to this assessment.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
ASSESSMENT					
Stakeholder mapping has been undertaken to identify and analyse stakeholders	✓	A stakeholder map that describes each group's and institution's interest, influence, concerns and expectations	The stakeholder mapping takes broad considerations into account	✓	VesturVerk/HS Orka has identified and analysed stakeholders and a wide range of factors and perspectives are

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		was produced already during the initial round of development work in 2016-2019. This has recently been updated as part of a comprehensive Communications and Consultation Plan for activities to the end of 2025.			being considered. The mapping process is comprehensive and looks beyond just the immediate or obvious stakeholders to include a diverse array of individuals or groups that may be affected
It establishes those that are directly affected	✓	The affected community is very well identified and clearly described in the documents.			
It establishes communication requirements and priorities	✓	Communication requirements and priorities are defined based on impact, interest, influence of stakeholder mapping and included in the new Communication and Consultation Plan.			
MANAGEMENT					
Communications and consultation plans and processes have been developed at an early stage	✓	An EIA for the project and an SIA for the Vestfjords region and another SIA for the Árneshreppur Municipality have been developed. These documents have recently been supplemented by a Communication and Consultation Plan and a stakeholder map.	Communication and consultation plans and processes show a high level of sensitivity to communication and consultation needs and approaches for various stakeholder groups and topics	✘	While the plans, evidence and findings indicate an effective communication strategy with all stakeholders, it is essential to engage even more with the members of the community who oppose the project. Their concerns must be acknowledged and addressed as part of the approach. The communication issues with the negatively-disposed community members (mainly due to construction disturbance and loss of wilderness) is prioritised in the new Communication and Consultation Plan and there is a web platform with information about
They outline communication and consultation needs and approaches for various stakeholder groups and topics	✓	Yes, they effectively address the communication and consultation needs of various stakeholder groups and topics by providing a comprehensive outline that considers the specific requirements and preferences of each group. All			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		relevant perspectives are taken into account, facilitating meaningful engagement and dialogue among stakeholders.			Landsnet's work on the transmission line, which includes direct communication channels for stakeholders. However, the assessors are unable to verify that the stakeholders are fully satisfied with the access to information, meaning this requirement is not (yet) met.
They are applicable to project preparation, implementation and operation	✓	The documents are applicable to project preparation, implementation and operation but with a clear and well-considered focus on near future. This is being addresses as part of the development of the Framework ESMP.	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	Stakeholder mapping, social impact assessments and the Communication and Consultation Plan respond to emerging risks and opportunities for this phase of the project.
They include an appropriate grievance mechanism	✓	HS Orka has a very good grievance mechanism in its internal policies which will also be adapted for the project (board decisions have been taken that these processes will be transferred both to VesturVerk and the project).			
STAKEHOLDER ENGAGEMENT					
There has been engagement with the following groups, or on the following topics, or through the following processes, with directly affected stakeholders:			Engagement with directly affected stakeholders has been inclusive and participatory	✓	There are clear records of interactions with all stakeholders, meetings, gatherings, informative materials, exchanges of letters, presentations, receptions, etc. It is of great importance that every possible step is taken to engage also those people in the directly-affected
• Project preparation, on topics of interest and relevance to directly affected stakeholders	✓	The EIA and the SIAs identified topics of interest and relevance to directly-affected stakeholders. This information has been supplemented by regular meetings and other communication efforts.			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
• The business interacts with a range of directly affected stakeholders to understand issues of interest to them	✓	The developer is interacting with the community through regular meetings and has regular contact with stakeholders with direct interests in the project, such as local governmental bodies. This is demonstrated through records of stakeholder interactions, materials, meeting etc.			community who opposed the project, as outlined in the Communication and Consultation Plan.
• Environmental and social impact assessment and management planning	✓	The project team is going significantly beyond the officially required public meetings and hearings, and this has resulted in additional commitments and reconsiderations by the developer. Communication is continuous and comprehensive.			
• Siting and design optimisation	✓	The formal, regulatory, consultations were done as part of the licencing process, reviews from this process resulted in modifications and even redesign of the project. This optimisation process is still continuing at the time of the assessment.			
• Project benefits	✓	There has been ongoing engagement with directly-affected stakeholders related to project benefits.			
• Project-affected communities	✓	See Section 4. There have been regular meetings with community representatives regarding the project and how it will affect the community (both negatively and positively)			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
• Resettlees and host communities	✓	Not relevant			
• Assessment and planning for cultural heritage issues	✓	Stakeholder engagement has been conducted on this topic, see Section 8 for further details.			
• Assessment and planning for public health, including health officials	✓	Local health officials have not yet been involved in planning public-health measures, but they will be included in the Community Health, Safety, and Security plans that VesturVerk/HS Orka and the lead contractor will develop together. Given the time left before the start of construction, this is considered **a non-significant gap**, as the plans are on track to be developed.			
• Downstream flow regimes	✓	Engagement on this topic was included in the licencing process, see Section 11 for further details.			
• Plans for the management of climate risks	✓	VesturVerk/HS Orka has had a continuous engagement process with consultants and relevant national stakeholders to address climate risks, these assessments and plans are publicly available on their website. For further details, see Section 12			
Engagement with directly affected stakeholders has been appropriately timed:			Negotiations are undertaken in good faith	✓	There are no indications otherwise.
• Project preparation, on topics of interest and relevance to them	✓	There are no indications that engagement on this issue was not appropriately timed. The consultation process related to the licencing			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		process was fully compliant with the regulations, and additional consultations and information sessions have added on to this.			
• Environmental and social impact assessment and management planning	✓	See above			
• Siting and design optimisation	✓	See above			
• Project benefits	✓	See above			
• Project-affected communities	✓	See above			
• Resettlees and host communities	✓	Not relevant			
• Assessment and planning for cultural heritage issues	✓	See above			
• Assessment and planning for public health	✓	See above			
• Downstream flow regimes	✓	See above			
Engagement with directly affected stakeholders has often been two-way:					
• Project preparation, on topics of interest and relevance to them	✓	Engagement has been regular and often two-way. There is, however, strong opposition to the project among some stakeholders, to the point that an honest and two-way communication is made difficult. This is not considered a gap against this requirement since the	Feedback on how issues raised have been taken into consideration has been thorough and timely	✓	Feedback has typically been comprehensive and prompt, leaving most stakeholders feeling well-informed. The regular visits by the developer's staff to the project area, along with the availability and distribution of printed materials, has contributed to this.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		developer's staff are making an effort at reaching out. Evidence shows that VesturVerk/HS Orka has (since the restart of the project) put a lot of effort into improving its communication and consultation effort in the community, and with other stakeholders.			
• Environmental and social impact assessment and management planning	✓	See above			
• Siting and design optimisation	✓	See above			
• Project benefits	✓	See above			
• Project-affected communities	✓	See above			
• Resettlees and host communities	✓	Not relevant			
• Assessment and planning for cultural heritage issues	✓	See above			
• Assessment and planning for public health	✓	See above			
• Downstream flow regimes	✓	See above			
Engagement is undertaken in good faith	✓	The project-development staff show a genuine commitment to fair and transparent communication, demonstrating good faith.			
Ongoing processes are in place for stakeholders to raise issues and get feedback	✓	There is consistent communication with the affected community and all stakeholders. There is evidence that			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		stakeholders can raise issues and that feedback is received.			
Ongoing processes are in place for:					
• Environmental and social impact assessment and management planning	✓	The project team is going significantly beyond the officially required public meetings and hearings, and this has resulted in additional commitments and reconsiderations by the developer. Communication is continuous and comprehensive.			
• Siting and design optimisation	✓	See above			
• Project benefits	✓	See above			
• Project-affected communities	✓	See above			
• Resettlees and host communities	✓	Not relevant			
• Employees and contractors on human resources and labour management issues	✓	See above			
• Assessment and planning for cultural heritage issues	✓	See above			
• Assessment and planning for public health	✓	See above			
• Downstream flow regimes	✓	See above			
Engagement with resettlees has been culturally appropriate	✓	Not relevant	Engagement with resettlees and host communities has	✓	Not relevant.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
Resettlees and host communities have been involved in the decision-making around relevant options and issues	✓	Not relevant	been inclusive and participatory		
Public disclosure:			The business publicly reports on project performance in sustainability areas of high interest to its stakeholders	✓	HS Orka publishes a very comprehensive Sustainability Report every year, see to the left.
• the business makes significant project reports publicly available	✓	The EIA as well as a non-technical summary is publicly available on VesturVerk/HS Orka's websites together with other important documents (such as SIAs, Climate Risk Assessments, Communication and Consultations documents etc.).			
• the business publicly reports on project performance, in some sustainability areas	✓	Information on project progress is being provided to stakeholders. HS Orka publish a very comprehensive annual Sustainability Report which includes e.g. Global Reporting Initiative (GRI) indicators.			
• results of the assessment of strategic fit are publicly disclosed	✓	The EIA has a chapter that describes strategic fit, and it is publicly disclosed. The review process (as part of licencing) was a public process that changed the design of the project. The project is placed in the utilisation category in the Icelandic Master Plan, demonstrating publicly reviewed and published strategic fit.	The assessment of project resilience has been publicly disclosed	✓	While there is no special-purpose resilience plan available, there is considerable information publicly available to underpin the project's resilience, making this **a non-significant gap**. Climate-change predictions are considered in the ongoing hydrology update for the project, which will address the hydrological resilience of the project, see also Section 12.
• power density calculations, estimated GHG emissions, and / or the results of a site-	✓	The power density (which is 7.1 W/m^2) is not directly publicly disclosed yet, but information which makes it easy			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
specific assessment have been publicly disclosed		to calculate this number is publicly available, making this **a non-significant gap**. See also Section 12.			
STAKEHOLDER SUPPORT					
Affected communities generally support or have no major ongoing opposition to the plans for the issues that specifically affect their community	✓	There are ongoing conflicts (in and out of the Icelandic court system) regarding land ownership and also demarcation of individual land holdings. There is also ongoing opposition to the Hvalávirkjun project at the local level of the Àrneshreppur municipality. The situation is highly complex with strong feelings on both sides. The issue is further complicated by the fact that many people spend only parts of their lives in the municipality. The people in directly and indirectly-affected communities in favour of the project appear to be dominated by all-year residents and strong supporters in the greater Vestfjords region who focus on the upsides, such as improved power security in the severely under-serviced Vestfjords, increased tax revenue at the municipal level from both the project's real-estate tax as well as project workers, increased economic activity etc.	Formal agreements with nearly all the directly affected communities have been reached for the mitigation, management and compensation measures relating to their communities	✓	There is no regulatory requirement for formal agreements with all stakeholders in Iceland when a project is categorised in the utilisation category of the Master Plan. However, the project has signed formal agreements with all acknowledged land owners and the municipality board is in favour of the project. This requirement is, therefore, on track to be met. There is, however, a single court proceeding ongoing between land owners in the area. The resolution to this will formally resolve that conflict regarding land and water rights.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		Findings and Observations	Requirement is met: yes (✔) or no (✘)		Findings and Observations
		The opponents have many arguments against, some clearly valid (wilderness impacts and construction-period impacts such as noise, dust etc.), while others appear to be based on misunderstandings or misinformation, such as perceived differences in the spending of public funds if a private developer vs the Government-owned utility company were to develop the project. Support at the community-level doesn't mean that all community members agree, but the developer should seek broad consensus, and be alert to opposition from groups within the community. The democratically-elected board of the municipality generally supports the project, but not unanimously. It is clear that there is considerable communication and information needs which will have to be satisfied by the project developers in order to address the worries of those opposing the project. On balance, the situation is assessed as **a non-significant gap** against the requirement but one in need of dedicated communications and consultations as outlined in the			

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
		Communications and Consultations Plan.			
Resettlees and host communities generally support or have no major on-going opposition to the Resettlement Action Plan	✓	Not relevant	There is consent with legally binding agreements by the resettlees and host communities for the Resettlement Action Plan	✓	Not relevant.
Directly affected stakeholder groups generally support or have no major ongoing opposition to the cultural heritage assessment, planning or implementation measures	✓	There is no opposition regarding cultural heritage and archaeological remains. Based on local legislation and regulations of relevant institutions (see Section 8) everything related to cultural heritage is easily accessible and there is no possibility of deviation. VesturVerk/HS Orka has diligently followed the necessary steps up to this stage of the project.	Formal agreements with the directly affected stakeholder groups have been reached for cultural heritage management measures	✓	See on the left
CONFORMANCE AND COMPLIANCE					
Processes and objectives relating to communications and consultation have been and are on track to be met with:			There are no non-compliances	✓	There are no indications of any non-compliances.
• no major non-compliances	✓	There are no indications of any major non-compliances.			
• no major non-conformances	✓	There are no indications of any major non-conformances.	There are no non-conformances	✓	There are no indications of any non-conformances.
Any communications related commitments have been or are on track to be met	✓	There are no indications otherwise.			

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	13 out of 14 out of which 2 are Not Relevant (93%)

Summary of findings and other notable issues
Engagement has been sufficiently inclusive of all stakeholder groups during the preparation phase so far. In addition, VesturVerk/HS Orka makes significant project reports publicly available and publicly reports on areas of high interest to its stakeholders. There is ongoing opposition to the project but VesturVerk/HS Orka has improved its general communication and consultation processes (for instance the addition of a communication strategy, an updated stakeholder map and an updated Communication and Consultation Plan, and arranging of Townhall meetings and communication efforts in the local community and with other stakeholders etc.) since the restart of the project, but there is still a lot of work to be done. It is important to consider the current situation in the affected community through continuous consultations, to ensure that diverse perspectives are acknowledged, and their concerns are appropriately addressed, to the point possible.

Relevant evidence	
Interview	1-7, 10, 11, 13-23, 25-38
Document	2-6, 8, 14, 17, 18, 20-24, 30, 32-34, 36, 42-45, 58, 61, 63, 68-70, 84-86, 91, 102 -106, 144-146, 152, 159, 176-178, 180-185, 187, 188, 215-218, 220-223, 225 and 227
Photo	11, 20

11 Hydrological Resource

Scope and Principle
This section addresses the hydrological resource availability and reliability to the project, reservoir planning and downstream flow regimes in relation to environmental, social and economic impacts and benefits. The principle is that the project's planned power generation takes into account hydrological resource availability and reliability in the short- and long-term, and that the reservoir and downstream flow regimes are planned and managed with an awareness of environmental, social and economic objectives.

Background	
Hydrology and flows	
Average flow at dam (m^3/s)	15.9 m^3/s (Hvalá)
Minimum monthly average flow (m^3/s)	Approximately 4 m^3/s (January)
Maximum monthly average flow (m^3/s)	Approximately 56 m^3/s (July)
Lowest observed flow (m^3/s)	0 or very close to 0 m^3/s (January-May, and September)
Highest observed flow (m^3/s)	Approximately 190 m^3/s (July)
Design flow (m^3/s)	20 m^3/s
Affected river reaches (start/end and how affected)	A highly complex scheme with multiple dams, diversions and tunnels. Total length of dewatered river reaches is approximately 30 km
Reservoir 1 - Vatnalautalón	
Reservoir length (km)	6.8 km (the greatest distance from the dam wall to the upstream end)
Minimum operating level MOL (m.a.s.l.)	323 m.a.s.l.
Normal operating level (m.a.s.l.)	Variable
Full supply level FSL (m.a.s.l.)	348 m.a.s.l.
Reservoir area at FSL (km^2)	7.8 km^2
Reservoir area at MOL (km^2)	0.3 km^2
Utilisable volume (million m^3)	80 million m^3

Average retention time in days	Approximately 93
Number of days for filling	Approximately 17, if done in July
Reservoir 2 - Hvalárlón	
Reservoir length (km)	2.5 km (the greatest distance from the dam wall to the upstream end)
Minimum operating level MOL (m.a.s.l.)	290 m.a.s.l.
Normal operating level (m.a.s.l.)	Variable
Full supply level FSL (m.a.s.l.)	315 m.a.s.l.
Reservoir area at FSL (km^2)	2.8 km^2
Reservoir area at MOL (km^2)	0.5 km^2
Utilisable volume (million m^3)	44 million m^3
Average retention time in days	Approximately 45
Number of days for filling	Approximately 8, if done in July (once Vatnalautalón is filled)
Reservoir 3 – Eyvindarfjarðarlón	
Reservoir length (km)	3.0 km (the greatest distance from the dam wall to the upstream end)
Minimum operating level MOL (m.a.s.l.)	290 m.a.s.l.
Normal operating level (m.a.s.l.)	Variable
Full supply level FSL (m.a.s.l.)	31593 m.a.s.l.
Reservoir area at FSL (km^2)	2.1 km^2
Reservoir area at MOL (km^2)	0.6 km^2
Utilisable volume (million m^3)	32 million m^3
Average retention time in days	Approximately 86
Number of days for filling	Approximately 25, if done in July
Other relevant information	Article 61 of Law 60/2013 on nature conservation protects, among other things, waterfalls and lakes/ponds larger than 0.1 ha. Waterfalls are considered heritage features.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Assessment of hydrological resource availability	✓	Field studies and hydrological modelling have been ongoing for at least a decade and time series dating back to the 1970s have been utilised.	Issues that may impact on water availability or reliability have been comprehensively identified	✓	The between and within-year variability has been comprehensively studied (over 7 000 gauging days reported in the FS, and considerably more added since then. A model has been set up and tested against the long time series and updated. Low-flow measurements have been conducted and use for further calibration of the model. For climate-change aspects, see Section 12.
Hydrological resource assessment has been undertaken utilising:					
• available data	✓	Yes, see above.			
• field measurements	✓	An extensive field measurement programme with 8 established gauging stations has been implemented and has included low-flow measurements during the winter season.			
• appropriate statistical indicators	✓	Normal statistical analyses of the data set have been conducted.			
• a hydrological model	✓	The consulting firm Vatnaskil have developed a model, starting in 2014, which has been updated in steps. It's a rainfall-runoff model. However, project planning is now relying on the field data collected over the last decade as that has utilised significantly more gauges in the area, providing improved predictions.			
Issues which may impact on water availability or reliability have been identified and factored into the modelling	✓	Comprehensive work aiming at understanding availability, reliability and variability of water for the project has been undertaken for a decade.	Hydrological uncertainties and risks have been extensively evaluated over the short- and long-term	✓	See above.

Minimum Requirements			Advanced Requirements		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
Hydrological resource assessment includes evaluation of scenarios, uncertainties and risks	✓	The hydrological studies address the entirety of the requirement. In addition, continued re-assessments of the resource has been and is conducted. A recent study (August 2024) focussed on an analysis of potential future increase of the installed capacity in order to respond to increasing peak- and balancing power in Iceland, as a result of increasing wind-power capacity in the country.			
Assessment of important considerations prior to and during reservoir filling	✓	This is part of the Feasibility Study and also updated in ongoing optimisation studies.	The reservoir assessment is based on dialogue with local community representatives	✓	The municipal board is well informed and in favour (see also Section 4) of the project. Only two landowners are directly affected, well informed and have both signed deals with the developer.
Assessment of important considerations during reservoir operations	✓	See above.			
Assessment of flow regimes downstream of project infrastructure	✓	Yes, the hydrological assessment is continuously updating this with additional in-data especially in terms of the low-flow season. This is also addressed in the hydrology section of the 2017 Environmental Impact Assessment (EIA).	The reservoir and flow regimes assessments take broad considerations, risks and opportunities into account	✓	The focus is clearly on maximising generation, the project will not be financially viable with large downstream-flow releases past the dams and diversions. However, all aspects of downstream-flow regimes have been thoroughly assessed, risks and opportunities alike and ongoing studies are investigating approaches that would allow greater releases to downstream river stretches.
Flow regimes assessment includes all potentially affected river reaches	✓	Yes, see above.			

Flow regimes assessment includes identification of the flow ranges and variability to achieve different environmental, social and economic objectives	✓	Effectively yes, as the objective of an e-flow would be tourism, especially in terms of dewatered sections affecting waterfalls attractive to the very few tourists that visit the area. The fish population in the rivers downstream of the larger lakes/reservoir (except the sections immediately upstream of the outflow into the ocean) is very limited.	The flows regimes assessment is based on field studies	✓	Comprehensive field studies have been conducted and reported in the FS and the EIA.
Flow regimes assessment is based on relevant scientific and other information	✓	Yes, EIA and additional comprehensive aquatic-ecology studies (including water quality).			
MANAGEMENT					
Plans and processes for generation operations have been developed to ensure efficiency of water use	✓	Yes, see above – part of the Feasibility Study and the ongoing updates.	Generation operations planning has a long-term perspective	✓	The design is well adjusted for the long term with installed capacity adjusted to ensure a high availability factor in spite of the (comparatively) small reservoirs and strong seasonal flow variations.
Plans and processes for generation operations are based on:					
• analysis of the hydrological resource availability	✓	Yes, see above.	Generation operations planning takes into consideration multiple uses and integrated water resources management	✓	There is only one significant alternative use of the water in the three main rivers included in the project – aesthetic beauty for (mainly) the few hiking tourists who venture onto Ófeigsfjarðarheiði. At least 3 waterfalls – Rjúkandifoss in the Rjúkandi River, Gljúfrabúi in the Hvalá River and an unnamed waterfall in Eyvindarfjarðará with tourism value will be negatively affected by the project and the present design choice will affect all of these to some extent, even if ongoing
• a range of technical considerations	✓	Optimisation has included consideration of different technical solutions, including the recent studies of additional installed capacity.			

					project optimisation is attempting to minimise impacts further. The ongoing optimisation work demonstrates the developer's commitment considering multiple uses and water management.
• an understanding of power system opportunities and constraints	✓	Yes, the Feasibility Study and later continued work have investigated all the significant constraints (the main ones being the transmission grid and aspects of environmental protection) as well as opportunities (the main ones being the positive regional impacts of 55 MW added in Vestfjords and the contribution to national peak- and balancing power.	Generation operations planning fully optimises and maximises efficiency of water use	✓	The design is fully optimised for the available water resource.
• social and environmental considerations including downstream flow regimes	✓	Yes, the EIA and the hydrological studies.			
Plans and processes to manage reservoir preparation and filling have been developed	✓	In principle yes, these are parts of the Feasibility Study. Details will obviously be refined if/when an investment decision is made.	Generation operations planning has the flexibility to anticipate and adapt to future changes	✓	The feasibility design is not very adaptable to changes in water availability, neither increased nor decreased inflows. This could have been a gap against this requirement, partly caused by the strong objective of making as small a visual impact as possible, with low dams which are designed to "disappear" in the landscape. However, the ongoing study investigating the potential for additional capacity to be added in the future adds a strong potential to adapt to changing future needs.
Plans and processes to manage reservoir operations have been developed	✓	See above.			

Plans and processes for delivery of downstream flow regimes have been developed	✓	The hydrological studies and the EIA discuss this in detail, but the decisions are not yet made. There is plenty of time to refine the plans for downstream releases, making this **a non-significant gap**. However, if clear plans are not developed before a decision to go ahead with the investment this would develop into a significant gap.	Reservoir plans are based on dialogue with local community and government representatives	✓	The Government has rated the project in the "utilisation" category in the Master Plan – meaning that the project is in the highest-priority class. Consultations with the local community of Árneshreppur has been going on for many years.
Downstream flow plans include:					
• flow objectives	✓	The main criterion for the studies of downstream flows has been the maintenance of touristic value of the waterfalls and this has been studied in detail in hydrological studies and the EIA.	Processes are in place to anticipate and respond to emerging risks and opportunities	✓	These plans are not finalised, but the planning work is ongoing, and the plant will not go into construction before the summer of 2026 (possibly later). This requirement is, therefore, considered as on track to be met.
• magnitude, range and variability of the flow regimes	✓	See above.			
• locations at which flows will be verified	✓	There is no specific definition of this yet, as environmental licences etc., are not yet defined. Verification will be easily accomplished at dam sites and guided by possible licencing requirements, making this **a non-significant gap** at this point as there is ample time to resolve this if/when an investment decision is made.	Commitments in plans are public, formal and legally enforceable	✓	See above.
• ongoing monitoring	✓	Monitoring will be the basis of the verification described above and implemented mainly at the dams and in the project's waterways.			

Downstream flow plans, where formal commitments have been made, are publicly disclosed	✓	There have been no formal commitments to downstream flows made at the time of the assessment.			
OUTCOMES					
Plans for downstream flows take into account environmental, social and economic objectives	✓	The plans for downstream flows are based on detailed hydrological modelling and considerations of environmental, social as well as economic objectives have been factored into the design. It is clear that the social and economic priorities dominate over the environmental/aesthetic objectives at this point in time. Changes may take place as a result of the design update under way.	Plans for downstream flow regimes represent an optimal fit amongst environmental, social and economic objectives	×	Given the high social and economic drivers for the Hvalávirkjun project, the flow regimes are well considered, but cannot be considered an optimal fit, given that waterfalls have strong environmental protection in Iceland and several of the project-affected falls are considered to be important tourist attractions, even if they have very low visitor numbers and are not spectacular in an Icelandic context. Hence this requirement is not met.
Where relevant, downstream flows take into account agreed transboundary objectives	✓	Not relevant			

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	12 out of 13 (92%)

Summary of findings and other notable issues
The hydrology of the project rivers is well studied. Assessment was first based on long time series from gauging stations near the ocean (including modelling) and over the last decade multiple stations have been established and monitored at critical points in the catchment., providing considerably more reliable data. Project design and optimisation efforts have been ongoing as long as the project has been studied, and still is. At the moment much of those studies investigate the possibility for enhanced installed capacity (increased peaking capacity could support additional wind power in the region and country) as well as minimisation of the impact on the waterfalls. The latter is the only significant environmental-flow objective identified and even if considerable efforts are going into minimisation, these do not meet the advanced-level requirement of an optimal fit, resulting in the only significant gap at that level.

Summary of findings and other notable issues
The downstream-flow regime of the project will depend on the result of the ongoing optimisation work and will focus on providing an acceptable flow in the three project-affected waterfalls in the area with minimum production loss.

Relevant evidence	
Interview	1, 2, 4, 7, 21, 23-25, 36, 38
Document	2-4, 16, 17, 20-23, 32, 36, 58, 91, 92, 96, 97, 124, 152, 189-192, 194-197, 201, 215-219 and 229
Photo	1, 3, 4, 6, 8, 9, 12, 13, 15, 16, 18, 19, 22

12 Climate Change Mitigation and Resilience

Scope and Principle
This section addresses the estimation and management of the project's greenhouse gas (GHG) emissions, analysis and management of the risks of climate change for the project, and the project's role in climate change adaptation. The principle is that the project's GHG emissions are consistent with low carbon power generation, the project is resilient to the effects of climate change, and the project contributes to wider adaptation to climate change.

Background	
Climate Change Mitigation	
Capacity (MW) (or additional capacity in case of expansion/ rehabilitation projects)	55 MW
Average reservoir area (representing area of flooded land, net of pre-impoundment water body) (km^2) (or additional reservoir area if any, for expansion/rehabilitation projects)	7.7 km^2
Power density (W / m^2)	7.1 W/m^2
Emissions intensity (gCO_2e / kWh)	Not calculated for the Hvalá project at this stage. As the Power Density is > 5 W/m^2, it is not necessary data for this assessment.
National and regional policies, plans and commitments relevant to mitigation	A Sustainability Energy Future – an Energy Policy to the Year 2050 (Government of Iceland, Ministry of Industries and Innovation). Iceland's Climate Action Plan 2018-2030 and 2020 update, with specific targets for different sectors and carbon neutrality by 2040.
Climate Change Resilience	
Hydrological data available for the project site and the basin, and observed climate trends	The thorough project-specific studies for Hvalávirkjun plus the Government-run hydrological network established before Hvalávirkjun planning started together with the climate-change predictions by the Icelandic Met Office.

Regional and basin-level climate models relevant to the project location, if any	A national scientific committee has reviewed all relevant climate studies and published a summary of predicted changes and impacts in 2023.
Any climate change predictions for the project location, and degree of consistency	Iceland shows a slightly different pattern to most other countries in that warming is not predicted to be considerable over the next 50-100 years and precipitation only expected to increase by single-digit percentage points. Different three RCPs (2.6, 4.5 and 8.5) yield results for temperature and precipitation both above and below present levels. One clear trend is, however, recognisable from other parts of the world – an increase in extremes in precipitation.
National policies, plans and commitments relevant to adaptation and resilience	See above under "Mitigation"
Other relevant information	HS Orka, majority owner of the Hvalávirkjun development company VesturVerk conducts comprehensive analyses of its climate-change impacts, resilience and potential contributions to national targets. The company also conducts Life-Cycle Assessments (which include climate change as an important aspect) of its major assets.

Minimum Requirements			**Advanced Requirements**		
Requirement is met: yes (✔) or no (✘)		**Findings and Observations**	**Requirement is met: yes (✔) or no (✘)**		**Findings and Observations**
ASSESSMENT					
Climate Change Mitigation					
For projects with a power density below 5 W/m^2, net GHG emissions (gCO2e) of electricity generation have been estimated and independently verified	✓	N/A as the power density is > 5 W/m^2.	If a site-specific assessment is required, it incorporates a broad range of scenarios, uncertainties and risks	✓	N/A, see to the left.
For projects with a power density below 5 W/m2 and estimated emissions are above 100 gCO_2e/kWh, a site-specific assessment of GHG emissions has been undertaken	✓	See above.			

An assessment of the project's fit with national and/or regional policies and plans on mitigation has been undertaken	✓	The fit is demonstrated by the expressed policy need for more installed capacity and peak- and balancing power to support an increase in wind-power capacity in the country. As mentioned elsewhere, there is also a clear demonstrated fit with regional development needs as expressed by several stakeholders and notably the Vestfjarðarstofa (Vestfjords Regional Development Office).			
Climate Change Resilience					
An assessment of the project's resilience to climate change has been undertaken	✓	Climate scenarios have been studied and detailed hydrological analyses are continuously updated in order to understand climate futures. The design is mainly focussed on minimising negative environmental impacts, but recent studies have also investigated the opportunities for additional installed capacity.	Assessment of resilience incorporates sensitivity analysis and project-specific hydrological modelling using recognised climate models	✓	For the hydrological modelling, see Section 11. The existing hydrological assessment is not conducted with any climate models but only with traditional hydrological trend analysis and modelling and sensitivity analyses for the project's financial indicators under different scenarios. However, the impacts of several climate scenarios from the Icelandic Met Office on the generation plan for the Hvalávirkjun plant is being studied during the 2025-26 period. With the inclusion of this work into the project's overall plan in 2026, this requirement is considered as met.
The assessment:					
• incorporates an assessment of plausible climate change at the project site	✓	This is not done at project level but relies on national assessments which address regional variations across the country. Given the lack of significant variation in climate futures predicted for Iceland and the non-dependence on glacial-melt runoff, this is considered **a non-significant gap** against this requirement but additional studies, incorporating climate-change			

		predictions into an updated project hydrology are ongoing.			
• identifies a range of climatological and hydrological conditions at the project site	✓	See above			
• applies these conditions in a documented risk assessment or stress test	✓	Overall project planning includes scenario testing and risk assessment. These scenarios go beyond what any of the Met Office's climate scenarios do.			
The risk assessment or stress test encompasses:					
• dam safety	✓	A dam-safety study is under way and expected to be finalised shortly after this assessment.			
• other infrastructural resilience	✓	Dams are the only significant infrastructure subjected to climate-change risks in the project, rendering this requirement not relevant.			
• environmental and social risks	✓	Environmental and social risks are assessed in the 2017 Environmental Impact Assessment (EIA) and, as climate risks appear low in Iceland, no climate change-driven environmental and social risks are likely in the project area.			
• power generation availability	✓	There are ongoing optimisation studies looking into a number of options for power generation, including availability.			
An assessment of the project's potential adaptation services and fit with national	✓	The fit of the project with national plans and policies in this aspect is well demonstrated as the project will			

and/or regional policies and plans for adaptation has been undertaken		provide increased potential for a diversified renewable-energy sector in Iceland.			
MANAGEMENT					
Climate Change Mitigation					
If GHG emissions estimates assume design and management measures, there are plans to put these measures in place	✓	N/A as no emissions estimates are necessary.	Design and management measures have been developed for implementation and operation phases of the project to respond to risks and opportunities including offsetting emissions	✓	These plans and measures are not developed yet, but the work is ongoing, and the plant will not go into construction before the summer of 2026 (possibly later). Iceland already has a fully renewable electricity sector with the higher emissions being contributed by geo-thermal power, leaving little or no need for emissions offsets. This requirement is, therefore considered as on track to be met.
			Plans have been developed to monitor parameters used in GHG emissions estimates or to monitor GHG stocks	✓	HS Orka as a majority owner of VesturVerk, the developer, monitors such parameters as an integral step in its Life-Cycle Assessment work as well as annual Sustainability reporting. Board decisions in both HS Orka and VesturVerk in 2024 have decided that all of HS Orka's internal systems, including green-house gas (GHG) aspects, will be implemented fully also for the project.
Climate Change Resilience					
The project design is based on plausible climate change scenarios	✓	Various potential designs have been investigated which can address multiple scenarios but as all plausible future scenarios for Iceland include reduced seasonal variations and	Resilience measures take account of a broad range of risks and inter-relationships	✓	The risk assessment and scenario testing are sufficient for investment-decision purposes. Combined with the dam-safety study now under way this requirement is met.

		approximately unchanged average precipitation, design options logically focus on the opportunity of increased generation or a shift in operational policies towards a stronger focus on peak- and/or balancing capacity .	Processes are in place to respond to unanticipated climate change	✓	The project planning includes options assessment of alternative generation scenarios, enabling an adaptation to unanticipated changes.
Structural and operational measures are planned for design, implementation and operation phases to avoid or reduce the identified climate risks	✓	As climate risks, according to the models, are very limited, normal safety margins are sufficient to meet this requirement.	Plans have been developed to provide adaptation services if necessary	✓	There are no plans specifically for the provision of adaptation services, but the plant will in itself contribute to climate adaptation. This requirement is, therefore, considered met.
OUTCOMES					
Climate Change Mitigation					
The project's GHG emissions are demonstrated to be consistent with low carbon power generation	✓	The power density is > 5 W/m^2. Given the environment in which the project is located, the emission intensity will likely be very low (well below those of wind and solar panels), given that there is little or no carbon stock in the areas that will be inundated by the reservoirs. There is evidence from other hydropower projects in Iceland with significantly "worse" conditions in their inundation zones, that emissions are very low.	Project net emissions are minimised, or project operations facilitate system emissions reductions	✓	The net emissions are likely to be extremely low as the project's reservoirs will be established on areas with mainly bare rock. The fact that the project will also be able to support increased wind-power capacity enhancements in Iceland will assist further in lowering the already low Icelandic system emissions as will the avoided diesel use (see left).
The fit of the project with national and regional policies and plans for mitigation can be demonstrated	✓	Yes, see above. In addition, securing sufficient electricity for the domestic and industrial need (including the presently un-serviced needs) in Vestfjords would remove the need for diesel-fuelled back-up generation			

		which consumes well over 3 million litres of diesel/year. This mitigation cannot be accomplished nearly as efficiently with e.g. strengthening of the power grid alone.			
Climate Change Resilience					
Plans will deliver a project that is resilient to climate change under a range of scenarios	✓	Yes, see above.	The project is resilient under a broad range of scenarios	✓	Just about all climate-change scenarios include annual average precipitation at or around present values but with reduced seasonal variations in river runoff, making the project highly resilient as long as increased flood peaks can be managed.
The fit of the project with national and regional policies and plans for adaptation can be demonstrated	✓	Yes, see above	The project will contribute to climate change adaptation at local, regional or national levels	✓	The project is well-placed to do so at all three levels.

List of significant gaps against **Minimum Requirements**	Number of **Advanced Requirements** met
There are no significant gaps against the Minimum Requirements.	10 out of 10 (100%)

Summary of findings and other notable issues
Climate modelling for Iceland shows unusually low predicted changes in both temperature and rainfall over this century, as compared to most of the Arctic and near-Arctic regions of the world. The Inter-governmental Panel on Climate Change's (IPCC) RCPs are all tested, and results vary around today's averages (both colder and warmer, wetter and drier) but base cases – which best fit the changes measured so far – predict some minor increases but mainly a redistribution with lower inter-season variability – a positive change for a hydropower project's climate resilience. The project is evaluated with scenarios below and above the present hydrological situation, beyond the changes predicted by any of the IPCC's RCPs and the hydrology study is being updated to include the latest climate-change predictions. Modelling does predict an increase in extreme climate events (as is true almost everywhere in the world, given the increased amount of energy in the atmosphere caused by a globally warming climate), but the predictions are mainly localised to the highland areas, presently partly covered by glaciers, meaning the negative impacts of such events would be dampened, as much of the precipitation will fall as snow. The project would contribute to reduced systems emissions through several pathways.

Relevant evidence	
Interview	1, 2, 4, 7, 14, 21, 22, 36, 38
Document	2-4, 17, 20, 50-53, 58, 91, 152, 199-206, 215-219 and 229
Photo	N/A

Appendix 1 – Interviews

No	Interviewee/s	Organisation / Community	Date
1	HSS Team VesturVerk/HS Orka	VesturVerk/HS Orka	3.9. 2024
2	Þorbergur Leifsson, Arnór Sigfússon, Erla Bryndís Kristjánsdóttir	Verkís (Design and EIA consultants)	3.9.2024
3	Björg Eva Erlendsdóttir, Lúna Grétudóttir, Guðrún Schmidt, video meeting	Landvernd (Environmental NGO)	3.9.2024
4	Jakob Gunnarsson	Skipulagsstofnun (National Planning Agency)	3.9.2024
5	Sóley Bjarnadóttir, Jón Geir Pétursson (chairman), video meeting	Rammaáætlun (Master Plan) Steering Committee	3.9.2024
6	Sigríður Kristjánsdóttir, Hjörleifur Finnsson, Aðalsteinn Óskarsson, video meeting	Vestfjarðarstofa (Vestfjords Regional Development Office)	3.9.2025
7	Kristinn Árnason, Axel Viðarsson, Marín Ósk Hafnadóttir	VesturVerk/HS Orka, documents etc.	4.9.2025
8	Ásbjörn Blöndal, Axel Viðarsson	VesturVerk Chairman / Development team	4.9.2025
9	Arna Björg Rúnarsdóttir, Kristín Birna Ingadóttir	HS Orka (Compliance and governance)	4.9.2025
10	Rán Jónsdóttir Sigurjón Njarðarson, video meeting	Orkustofnun (National Energy Authority)	4.9.2025
11	Finnur Sveinsson	HS Orka (Procurement)	4.9.2025
12	Örn Alexandersson, video meeting	BSI Ísland (ISO auditor)	4.9.2025
13	Hallgrímur Þorvaldsson	HS Orka (Safety and Working Conditions)	4.9.2025
14	Marianne Jensdóttir Fjeld, Lilja Ólafsdóttir	Umhverfisstofnun (The Environment Agency of Iceland)	4.9.2025
15	Hlín Benediktsdóttir, Gnýr Guðmundsson	Landsnet (National Grid company)	4.9.2025
16	Halldór Arnar Guðmundsson, video meeting	VM (trade union)	4.9.2025
17	Anton Helgason, video meeting	Heilbrigðiseftirlit Vestfjarða (Vestfjords health authority)	5.9.2024
18	Petra Lind Einarsdóttir	HS Orka (Human Resources)	5.9.2024
19	Birna Lárusdóttir	VesturVerk/HS Orka (Communications)	5.9.2024
20	Þór Hjaltalín, Lísabet Guðmundsdóttir, video meeting	Minjastofnun (The Icelandic Heritage Foundation)	5.9.2024
21	Margrét Hallmundsdóttir, video meeting	Náttúrustofa Vestfjarða (The Natural Science Institute of the Vestfjords)	5.9.2024
22	Halldór Björnsson	Veðurstofa Íslands (Icelandic Met Office)	5.9.2024
23	Eydís Salóme Eiríksdóttir, Haraldur Rafn Ingvason	Hafrannsóknarstofnun (Marine and Freshwater Research Institute)	5.9.2024
24	Sverrir Óskar Elefsen	COWI (Hydrology consultants)	5.9.2024
25	Snorri Sigurðsson	Náttúrufræðistofnun (Icelandic Institute of Natural History)	5.9.2024

No	Interviewee/s	Organisation / Community	Date
26	Víðir Reynisson, video meeting	Almannavarnir (Civil Protection Authority)	6.9.2024
27	Eva Sigurbjörnsdóttir, Arinbjörn Bernharðsson, Bjarnheiður Júlía Fossdal, Sólveig Rögnvaldsdóttir, Skúli Gautason	Árneshreppur municipal board members and development advisor (Gautason)	6.9.2024
28	Pétur Guðmundsson	Ófeigsfjörður, the main landowner and water-rights holder	7.9.2024
29	Guðjón Ingólfsson, Ingibjörg Númadóttir, Elías Svavar Kristinsson	Ingolfsfjörður and Seljanes, landowners	7.9.2024
30	Arnþór Halldórsson	Contractor. Building a house in Norðurfjörður and planning to move residency to Árneshreppur.	8.9.2024
31	Guðlaugur Agnar Ágústsson	Steinstún and Njálsstaðir, landowner	8.9.2024
32	Magnús Karl Pétursson	Hotel manager, Djúpavík	8.9.2024
33	Finnur Ólafsson	Kaldrananeshreppur (chairman of the municipal board)	9.9.2024
34	Gauti Geirsson, video meeting	Háafell salmon farming, Ísafjörður (Manager)	9.9.2024
35	Davíð Már Bjarnason, video meeting	Farmer and resident in Árneshreppur	9.9.2024
36	HSS Team HS Orka/VesturVerk	VesturVerk/HS Orka (information-gap closure)	10.9.2024
37	Gunnar Gaukur Magnússon, telephone-meeting	VesturVerk (board member and shareholder), landowner and water-rights holder	10.9.2024
38	Senior VesturVerk/HS Orka staff	VesturVerk/HS Orka (closing meeting)	10.9.2024

Appendix 2 – Documents

No	Author / Organisation	Date/ Year	Title	I=Ice. E=Eng	Description
1	Parliament/ Skipulagsstofnun	25-Jun-21	Icel: "Lög um umhverfismat framkvæmda og áætlana."	I	The official text, publicly available on the website of the Icelandic parliament, wwww.althingi.is
2	Verkís	Nov-16	"Full EIA - Hvalávirkjun with appendix"	I	Full EIA - Hvalávirkjun with appendix, in Icelandic
3	Verkís (translation by HS Orka)	Nov-16	"Summary pages from the EIA in English"	E	Translated parts: • Summary pages (ice. „Samantekt“) • Chapter: 1 Introduction (ice. „Inngangur“)
4	Skipulagsstofnun	Apr-17	"Opinion report on the EIA_Skipulagsstofnun"	I	Skipulagsstofnun´s report on the EIA
5	University of Akureyri, Research Institute	Apr-18	"SIA for Hvalárvirkjun with regional, Westfjords focus_Univ of Akureyri_2018"	I	A full SIA document for Hvalárvirkjun - focus on the region of Westfirðir
6	University of Akureyri, Research Institute	Feb-18	"SIA for Hvalárvirkjun_focus on Municipality of Árneshreppur_Univ of A_2018"	I	A full SIA document for Hvalárvirkjun - focus on the municipality of Árneshreppur
7	Verkís	2019	"Registration of tree trunks/marks at the proposed Hvala structures"	I	According to the Nature Conservation Act no. 60/2013, Article 60, tree trunks are fossils that enjoy protection. In 2019, the Icelandic Institute of Natural History conducted a preliminary study and then VV decided to ask Verkis to do a full study in on the spread of tree trunks in the whole area. This file is that study.
8	Verkís	2016	"Road design due to Hvala"	I	- Ófeigfjörður Road, 4 drawings - Roads within the work area, 5 drawings
9	Lilja K. for Verkis	2016	"Lowland vegetation around the PP"	I	A special study the vegetation in the lowlands that will be disturbed due to the Hvalárvirkjun project.
10	Arnor - Verkis	2016	Birds	I	A special study on the Birds in the area affected by Hvalá in Ófeigsfjörður
11	Náttúrufræðistofa Kópavogs og Náttúrustofa Vestfjarða	2016	Aquatic life	I	Research on the aquatic life on Ófeigsfjörður, in Hvalá, Rjúkandaá and Eyvindarfjörðará
12	Náttúrufræðistofa Kópavogs og Náttúrustofa Vestfjarða	2017	"Rannsóknir í ám og vötnum á Ófeigsfjarðarheiði_December 2017.pdf"	I	Continued research on the aquatic life in Ófeigsfjörður; Eyvindarfjarðarvatn, Hvalárvatn, Nyrðra-Vatnalautavatn, Efra-Eyvindarfjarðarvatn, ónefnt vatn, Vatnalautapollur, Hvalá og Rjúkandi.

No	Author / Organisation	Date/ Year	Title	I=Ice. E=Eng	Description
13	Náttúrustofa Vestfjarða	2016	Archaeological registration	I	Archaeological registration in the proposed PP area. Work done By Margrét Hallmundssdóttir of Nátturustofa Vestfjarða, following a request from Minjastofnun on the topic.
14	Icelandic Tourism Research Center & University of Akureyri - For Verkís and EIA	2015	"Hvalárvirkjun´s effect on tourism and outdoor activities_report"	I	A report/study from Icelandic Tourism Research Center & University of Akureyri, on Hvalárvirkjun´s effect on tourism and outdoor activities. Work done for Verkís and their EIA work.
15	Letter from district committee	2016	Confirming transmission lines over Ofeigsfjardarheidi	I	A letter from a member of the municipality board in Árneshreppur, confirming that Vesturverk is licenced to change the layout of transmission lines from Hvala in the master plan of Arneshreppur.
16	Verkis	2016	Material release and surface finish	I	A memorandum from Verkís regarding treatment of construction related material - and on surface protection and finishing
17	Many	2016-17	Comments on EIA report	I	Comments from agencies and NGOs
18	Rannsoknir & radgjof	2016	Tourists in Stranda- and Arneshreppur	I	Numbers and statistics on tourism in the area
19	ÍSOR	2006	Geology	I	Research on the local geology and geomorphology
20	Verkis	2019	Plans and responses to EIA around Hvala project	I	A comprehensive presentation from 2019 of the main issues from EIA, planning and design. History of the project, the main milestones in planning and design as well as what actions have been taken in the design to further minimize the environmental footprint since the EIA work was completed.
21	Verkis	2024	Working plan for Verkís 2024	I	Please see English translation in the row below - here referencing the original Icelandic version
22	Verkis	2024	Translated: new working plan for Verkís 2024	E	Translated Verkis working plan for 2024 - Icelandic in the line above.
23	Hafró & Cowi /VesturVerk	2024/5	Plan around additional research needed due to water framework directive	I	Memorandum from Hafro (Marine and Freshwater Research Institute (MFRI)) from June 2024 on the WFD aspects of project development. One of the issues that had a considerable impact on the progress of the licensing issues at Hvammsvirkjun (Landsvirkjun) and it was Hafro as a monitoring institution that pointed out what could be done better but also came up with the solution. NOTE: Ongoing discussion with Hafro to be finalised were the agenda is to conclude a research agreement with them - meeting in late September.
24	VesturVerk	2024	Folder with examples, see under "Description".	I	All together in the folder "Records of response to stakeholder issues" (examples): 1. Letter to IRCA (vegagerdin) from VesturVerk and Landsnet (2024).

No	Author / Organisation	Date/ Year	Title	I=Ice. E=Eng	Description
					2. Meetings with IRCA and report on bridges and their condition 3. Letter from ministry regarding a proposal for the protection of waterfalls 4. Letter from ministry of finance regarding utilisation rights - admitting that the agreements would be accepted if the state has the water right.
25	BSI	2024	HS Orka recert report Feb 24 (1)	E	A recent example of an External audit report. ISO standards. This one on HS Orka management system, carried out in feb 2024
26	ÍSTAK	2019	cost analysis of the design plan	I	The contractor ISTAK was requested to conduct a cost analysis on the current plan from the designer Verkis.
27	EFLA	2019	cost and preliminary design review	I	HS Orka requested EFLA Consulting Engineer to do a preliminary review of the Hvalá River hydropower plant (HPP) Feasibility Study NOTE: We usually have a full review done when the design has reached the final stage and before contracting with a contractor. Conducted by engineering firm or by manufacturer.
28	BSI	2024	BSI auditors	I	External auditors at BSI
29	EFLA and ÍSTAK	2024	Third party experts mentioned above	E+I	Third party experts mentioned for third party cost and design review
30	The Master Plan Steering Committee	2022 - Phase 4 (Work on 5th phase is ongoing)	The Master Plan (for Iceland)	E	Website with all information regarding "The Master Plan for Nature Protection and Energy Utilization"
31	Icelandic Government	2011	Lög um stjórn vatnamála	I	Icelandic adaptation of the Water Framework Directive, from 2011 with more recent updates.
32	The Envirnoment Agency of Iceland and Icelandic Met Office	2024	Vatnavefsjá	I	Map covering all water bodies that The Environment Agency of Iceland has assessed against the Water Framework Directive. Water bodies that have not been affected by human activity are automatically considered in good condition. For water bodies in the project impact area press "Leita" at the top. All defined water bodies in Iceland should appear. Affected water bodies in the project area [the search option on the website only works for the code]: 101-909-L (Eyvindarfjarðarvatn) 101-925-L (Hvalárvatn) 101-929-L (Nyrðra-Vatnalautavatn) 101-115-R (Hvalá 1)

No	Author / Organisation	Date/ Year	Title	I=Ice. E=Eng	Description
					101-116-R (Hvalá 2) 101-127-R (Eyvindarfjarðará 1) 101-111-R (Eyvindarfjarðará 4)
33	University of Akureyri, Research Institute	Apr-18	"SIA for Hvalárvirkjun with regional, Westfjords focus_Univ of Akureyri_2018"	I	A full SIA document for Hvalárvirkjun - focus on the region of Westfirðir
34	University of Akureyri, Research Institute	Feb-18	"SIA for Hvalárvirkjun_focus on Municipality of Árneshreppur_Univ of A_2018"	I	A full SIA document for Hvalárvirkjun - focus on the municipality of Árneshreppur
36	Hafró & Cowi /VesturVerk	2024/5	"Minnisblað um gæðaþætti vegna Hvalárvirkjunar júní 2024"	I	Plan around additional research needed due to water framework directive. Memorandum from Hafro (Marine and Freshwater Research Institute (MFRI)) in June 2024. One of the issues that had a considerable impact on the progress of the licensing issues at Hvammsvirkjun (Landsvirkjun) and it was Hafro as a monitoring institution that pointed out what could be done better but also came up with the solution. NOTE: Ongoing discussion with Hafro to be finalised were the agenda is to conclude a research agreement with them - meeting in late September.
37	Mannvit	2016	"Brúarvirkjun_matsskýrsla_loka_2016-15-06"	I	Full EIA for Brúarvirkjun hydroplant, which began operations in 2020. Power plant with capacity equal to or higher than 10 MW are automatically subjected to the EIA process. Brúarvirkjun, however, is 9.9 MW. HS Orka nevertheless decided it would go through the EIA process.
38	Verkis	2013	Design review from VERKIS	I	This report describes a review of the plans being made around Hvala HPP over the years.
39	Landsnet	2024	System Balance Report (ísl: "Kerfisjöfnuður")	I	Report on the outlook of overall energy balance for the energy system and grid
40	Landsnet/EFLA	2022	Capacity- and energy balance report 2022-2026 ("Afl og orkujöfnuður 2022-2026)	I	Report on the expected balance between energy capacity and energy usage for the next five years. Report made by the engineering firm EFLA, for Landsnet.
41	Landsnet/EFLA	2021	"LN-21025 Áreiðanleiki afhendingar á Vestfjörðum_2021"	I	Energy reliability in the Westfjords, report by EFLA made for Landsnet in 2021
42	Regional Development Institute (Byggðastofnun)	2021	"Brothættar byggðir - Report, April 2021"	I	A public document listing key topics and context for the project "Áfram Árneshreppur", a government supported initiative focusing on future development of Árneshreppur.
43	Regional Development Institute (Byggðastofnun)	2023	"arsskyrsla-afram-arneshreppur-2023"	I	A 2023 Annual Report for the project "Áfram Árneshreppur" which has been one of the projects of Byggðastofnun called "Brothættar Byggðir"

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44	Regional Development Institute (Byggðastofnun)	2018	"Áfram Árneshreppur! - Markmið og framtíðarsýn"	I	A public document outlining the goals and vision for the project "Áfram Árneshreppur" (same as the later report above)
45	Regional Development Institute (Byggðastofnun)	Apr-24	"Brothættar byggðir - Annual Report 2023"	I	Annual report documenting the status of all "Brothættar byggðir" (e. fragile communities) projects in Iceland, including Árneshreppur.
46	National legistlation process (under consultation)	2021-	Regulation for sustainable land use	I	Draft for regulation about "Sustainable land-use", drafted by Landgræðslan in 2021 for the Environmental and Resource ministry. In 2024 the regulation had evolved and has not yet been passed by parliament, but was recently under consultation.
47	The Envirnoment Agency of Iceland	2024	Umhverfisstofnun - Kortasjá	I	Areas in Iceland that are officially declared protected.
48	The Envirnoment Agency of Iceland	2024	Alþjóðlegar skuldbindingar	I	Overview of international conventions, relating to nature conservation, Iceland is a member of.
49	Icelandic Government	2024	Kaflar lagasafns: 35. Umhverfismál	I	Overview of the Icelandic legal framework relating to environmental matters. See the following for conservation: Lög um náttúruvernd, nr. 60 Lög um stjórn vatnamála, nr. 36 Lög um vernd, friðun og veiðar á villtum fuglum og villtum spendýrum, nr. 64
50	HS Orka	2023	"Loftslagsáhættumat- og tækifæri 2023"	I	Full and Updated climate change risk and opportunity assessment in accordance with TCFD guidelines (Word doc). See also chapter "TCFD" in the 2023 Sustainability report of HS Orka for an overview.
51	HS Orka	2023	TCFD chapter in Sustainability Report 2023	E	See chapter "TCFD climate risk assessment 2023" in the 2023 Sustainability report of HS Orka for an overview.
52	Ríkisstjórn Íslands	2024 update	Aðgerðaráætlun í loftslagsmálum	I	Icelandic government climate action plan to 2030. This is a newly updated overview of the Government action plan, not ready in English yet it seems
53	HS Orka	2023	HS Orka´s Climate policy	I	HS Orka's climate policy, updated in 2023 and is a sub-policy of the Sustainability Policy. Includes reference to climate risk assessments.
54	European Union	2020	Taxonomy Regulation DNSH critera for water.	E	HS Orka's aim is to become Taxonomy aligned. That entails contributing significantly to one goal and to do no significant harm (DNSH) to the other five goals. Preparations are underway to meet these criteria.
55	HS Orka	2023	Analysis work_status and needs_policies and Taxonomy_2023	I	A working document with analysis of needs for policy updates to align with Taxonomy´s minimum safeguards

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56	HS Orka	summer 2023	"Work on policies_Plan_2023"	I	A more complete plan, partly based on Minimum Safeguards analysis, on prioritisation for policy updates and new policies. First stage fully implemented before year end 2023
58	Internal/HS Orka/VesturVerk	2024	Feasibility studies	E	Presentation of feasibility studies
59	Verkis	2013	Design review from VERKIS	I	This report describes a review of the plans being made around Hvala HPP over the years.
60	Verkis	2019	Plans and responses to EIA around Hvala project	I	A comprehensive presentation from 2019 of the main issues from EIA, planning and design. History of the project, the main milestones in planning and design as well as what actions have been taken in the design to further minimize the footprint after the EIA work was completed.
61	Landvernd	Sep-24	"Landvernd's letter to HSS assessors on Hvalávirkjun"	E	Landvernd's letter to HSS assessors on Hvalávirkjun, following their discussion meeting on sept 3rd
62	Hafró	2024	Memo fish research that was missing from the EIA	I	Memo from HAFRO fish research in 2024
63	VesturVerk	2023	Latest presentation by VesturVerk in the event held by Vestfjords Regional Development Office	I	Status of the development of Hvala project
64	HS Orka	2023	HR Policies	I	HS Orka's HR Policy, updated in 2023. Also on the HS Orka website.
65	HS Orka	2023	HR Policies	I	Policy against bullying, sexual and gender-based harassment and violence, updated in 2023
66	HS Orka	2024	Collective agreement	I	Summary of collective agreements at HS Orka and number of employees
67	HS Orka	2024	Introduction for new employees	I	General introduction of the company for new employees, all employees receive.
68	HS Orka	2024	Introduction for new employees on health and safety	I	The induction is done by interactive online course. PP document shows screenshots. Online course can only be assigned and sent to individuals
69	HS Orka	2024	Introduction for new employees on environmental matters 2024	I	Introduction to HS Orka's environmental matters
70	HS Orka	2024	IT and document system management	I	Introduction for new employees on IT and QMS
71	Staðlaráð	2012	General terms for tenders and contracts on construction works	I	General conditions for construction work used in most construction works in Iceland and by HS Orka
72	HSO	2023	P101 Samningsgögn I-III	I	The civil contract for the extension of SVA6 powerplant (SVA7). Reference to the IST is in chapter I.1.1 (1), special clause about labour conditions in chapter I.6.5 and the occupational health and safety requirements in Part VI (Hluti VI)

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73	Staðlaráð	2018	Conditions of contract for design and consulting services	I	General conditions of contract for design and consulting services used in Iceland and in general framework contracts in Iceland
74	HS Orka	2024	Rammasamningur HSOrka-HD - 08.03.2024	I	Service provider framework contract with HD based on HS Orka standard template. Clause 3 is about labour conditions and chain responsibility and clause 5 about health and safety
75	FIDIC	2021	Fidic Green Book - General conditions	E	General conditions used by HS Orka for most equipment purchasing foreign contracts
76	HS Orka	2022	SVA7 P107 - Codenser Signed Contract	E	Contract with Balcke Durr for the Condenser with reference to Fidic. All equipment purchase contracts are based on Fidic except one which is based on MF/2 for historical reasons
77	IEE	1999	MF2 - IEE Model Form of General Conditions of Contract (1)	E	MF2 is used in contracts with Fuji Electrics based on historical reasons
78	BH	2024	ESG instructions for contractors - working document	I	Working document for an ongoing project on further developing of our ESG instructions for contractors (design and onsite)
79	HS Orka	2023	HSE requirements for contractors	I	Requirements for all contractors working og HS Orka sites. Published on hsorka.is
80	HS Orka	2024	HSE requirements for contractors in CAPEX work	I	Part of all contracts for CAPEX work.
81	HS Orka	2023	Equality Plan	I	Equality Plan and actions, 2023 update
82	HS Orka	2023	Equality assessment report	I	BSI report
83	HS Orka	2023	Öryggis og vinnuverndarstefna	I	HS Orka´s policy for occipational health and safety, updated in 2023.
84	HS Orka	2024	Taka út starfsemina (meginferli)	I	The document "Taka stöðugum framförum" is a procedure for the main process "Taka stöðugum framförum. It describes how grievances (including occupational grievances), nonconformities, complaints, ideas and suggestions are systematically seized, reviewed and worked on for resolution, enhancing continuous improvements . See more detailed processes in the chapter "grievance mechanisms in section 10 "Communication and consultation"
85	HS Orka	2024	Grípa frávik, hugmyndir og ábendingar (ferli)	I	Catch deviations, ideas and tips - Describes the process on how grievances, nonconformities, complaints, ideas and suggestions are systematically seized. They are registered and followed up in Jira.
86	HS Orka	2024	Meðhöndla frávik eða ábendingu (ferli)	I	Process deviations and tips - Describes the process on how grievances, nonconformities, complaints, ideas and suggestions are systematically reviewed and worked on for resolution. They are registered and followed up in Jira
87	HS Orka	2024	Skjámyndir af mælaborði ÖHU tilkynninga	I	Screenshots of HSE dashboard - Reported incidents

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88	HS Orka	2024	Áhættuskrá meginferlisins "Tryggja heilsu og öryggi fólks"	I	Risk register for "Ensure health and safety of people"
89	HS Orka	2024	Áhættugreiningar starfa	I	JSA´s for HS Orka staff
90	HS Orka	2024	Dæmi um áhættugreiningar verktaka í fjárfestingarverkefnum	I	Example of JSA done by contractor in CAPEX projects
91	European Union	2020	Taxonomy Regulation DNSH criteria for water.	E	HS Orka's aim is to be Taxonomy aligned. That entails contributing significantly to one goal and to do no significant harm (DNSH) to the other five goals. The DNSH criteria includes water. Preparations are underway to meet these criteria.
92	COWI/Hafro	2024	"Efnagreining…"	E	Chemical analysis of the Ófeigfjörður watershed; the Rjúkandi river, Vatnalautavötn lakes, Hvalárvatn lake and Neðra-Eyvindarfjarðarvatn lake. Ongoing work with COWI & Hafro
93	Heilbrigðiseftirlit Suðurnesja	2024	"240618_Niðurstöður sýnatöku á neysluvatni_Lágar suður"	I	Most recent results of the local health authority regular monitoring of HS Orka's water resource in Lágar (southern pump station), Svartsengi
94	Heilbrigðiseftirlit Suðurnesja	2024	"240618_Niðurstöður sýnatöku á neysluvatni_Lágar norður"	I	Most recent results of the local health authority regular monitoring of HS Orka's water resource in Lágar (northern pump station), Svartsengi
95	Heilbrigðiseftirlit Suðurnesja	2023	"231106_Niðurstöður sýnatöku á neysluvatni_Reykjanes"	I	Most recent results of the local health authority regular monitoring of HS Orka's water resource in Sýrfell, Reykjanes power plant
96	HS Orka	2024	"Environmental samples analysis results_2020-2023"	E	HS Orka monitors water table, temperature, turbidity, fluoride (due to the volcanic eruptions), pH and conductivity. That information flows directly into our internal systems (not evidenced here). In addition, HS Orka samples water yearly and sends off for a full chemical analysis as evidenced in column J.
97	The Icelandic Government	2015	Reglugerð um varnir gegn mengun vatns	I	The Icelandic regulation on protection against water pollution, from 1999 with later changes. See the appendices.
98	HS Orka	2023	"Potable water pollution_Risk assessment"	I	Risk assessment for potable drinking water for current operations in Svartsengi and Reykjanes power plants; Lágar and Sýrfell groundwater resources.
99	HS Orka	2023	"Hazardous chemical spill_Risk assessment"	I	Risk assessment for a spill of hazardous chemicals into the environment in current operations and new projects.
100	HS Orka	2020	"VBA - 008 Viðbrögð við mengun"	I	The response plan if pollution incidents of any kind occur in operations and new projects.
101	Verkis	2009	Preliminary design	I	In the preliminary design, some insight into the area's geological formations is provided. It mentions that all reservoirs have bottom channel valves, which are not expected to be used

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					regularly but can be activated if necessary due to sedimentation, currently estimated to be negligible. See chapter 4.3.3 bottom outlet and 2.4. Bedrock
102	HS Orka	2023	Sustainability Report 2023	E	See Human Resource chapter and GRI Index
103	VesturVerk	2018	"Open Meeting_Vestfjords_Electricity and infrastructure, and Hvalárvirkjun"	I	In addition to mandatory EIA meetings and presentations VesturVerk conducted an open meeting in Ísafjörður addressing the status of the electrical system in the Vestfjords and how it will benefit from Hvalárvirkjun. Around 100 guests attended and the event was also streamed. In addition to VesturVerk, Orkubú Vestfjarða (OV) and Landsnet gave presentations.
104	VesturVerk/Landsnet	Aug_24	"Letter to IRCA - VesturVerk and Landsnet - August 24"	I	In August 2024 VesturVerk and Landsnet joined in a letter to the Icelandic Road and Coastal Administration (IRCA) outlining the road improvements in Árneshreppur necessary for the construction of Hvalárvirkjun. The two companies urge authorities to initiate talks between stakeholders regarding the matter.
105	VesturVerk	2008	Landowner agreement - Ofeigsfj.	I	In landowner agreements, the project is outlined, permission is given for research and use of the waterfall, and guidelines are set for land management. Developers must follow these guidelines and aim to minimize environmental impact.
106	VesturVerk	2009	Landowner agreement - Eyvindafj.	I	In landowner agreements, the project is outlined, permission is given for research and use of the waterfall, and guidelines are set for land management. Developers must follow these guidelines and aim to minimize environmental impact.
107	VesturVerk	Aug-24	"Community Benefits - Proposed and possible projects"	E	A summary put together for the board of VesturVerk listing the local, regional and national benefits of Hvalárvirkjun, both in terms of its impact on the electric system as well as the possible community projects VesturVerk could bring to the table and participate in. Compiles previously made proposals, issues and risks, and projects under consideration.
108	VesturVerk	May-24	"Community Benefits of Hvalárvirkjun" - PPT	E	A PPT internal document meant to present an overview and details regarding possible community projects and benefits. This is a live document that will be used for further discussions and analysis.
109	VesturVerk	2019	Risk Anlysis for Hvala	E	First version of risk assessment conducted by the owner of the project in 2019. To be updated. Note: With the main contractor a safety-risk assessment will be conducted for the construction in detail.
110	Ístak	2024	Áhættugreiningar fyrir ýmis störf í SVA7 verkefni	I	Few examples of task-based safety-risk assessments
111	Ístak	2023	Öryggis- heilbrigðisáætlun SVA7	I	Health and safety management plan for project SVA7
112	HS Orka / Verkís	2023	ÖHU kafli P101 SVA7 samnings	I	SVA7 construction project which is ongoing in 2024, HSE part of contract with main contract which is also HSE coordinator for the project

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113	HS Orka	2022	Neyðarrýmingaráætlun vegna eldsumbrota	I	Emergency evacuation plan for Svartsengi (including SVA7)
114	HS Orka	2023	Kröfur / staðlar ÖHU mála í fjárfestingaverkefnum	I	HSE requirements / standards for CAPEX projects
115	HS Orka	224	Innri úttekt meginferlisins "Tryggja heilsu og öryggi fólks"	I	Internal audit of the main process "Ensure health and safety of people"
117	Verkfræðistofan Vista	2024	"HS Orka-H2S Skýrsla 11 Grindavík 2023-15janúar24 Vista"	I	A summary report for HS Orka's hydrogen sulphide monitoring close to Grindavík, in accordance with the operations permit.
118	HS Orka	2020	"VBA - 008 Viðbrögð við mengun"	I	The response plan if pollution incidents of any kind occur in operations and new projects.
119	Náttúrufræðistofnun Íslands	2024	Vistgerðarkort	I	An updated vegetation map for Iceland, including Hvalá area.
124	European Union	2020	Taxonomy Regulation DNSH critera for water.	E	HS Orka's aim is to be Taxonomy aligned. That entails contributing significantly to one goal and to do no significant harm (DNSH) to the other five goals. The DNSH criteria for water covers fish migration as well as compliance with the Water Framework Directive (see below). Preparations are underway to meet these criteria.
125	Various	2016	Stakeholder comments on the EIA.	I	Directorate of Fisheries and Icelandic Institute of Natural History have provided comments on the biodiversity part of the EIA.
126	Heilbrigðiseftirlit Suðurnesja	2023	"20230525 - Heilbrigðiseftirlit Suðurneskja - Starfsleyfi fyrir Svartsengi"	I	HS Orka operational permit from the local health authority, for Svartsengi. See 8.12 for monitoring requirements concerning the effects on sea life in Arfadalsvík into which a pipe from the power plant is led. Condensate and separator water flows through the pipe.
127	Heilbrigðiseftirlit Suðurnesja	2020	"20200505 - Heilbriðigseftirlit Suðurnesja - Starfsleyfi v 100MW Reykjanesvirkjun"	I	HS Orka operational permit from the local health authority, for Reykjanes power plant. See 8.5 for monitoring requirements concerning the effects on sea life in Reykjanes shore into which a pipe from the power plant is led. Condensate, separator water and warmed cooling sea flows throught the pipe.
131	Skógræktin	2019	"Bruarvirkjun_Endurheimt_Votlendis_Skyrsla"	I	Mitigation measures in the Brúarvirkjun hydroplant project included wetland restoration. A contract with the Icelandic Forest Service was signed and 10 ha of wetlands were restored.
132	Skógræktin	2019	"Bruarvirkjun_endurheimt_skyrsla"	I	Mitigation measures in the Brúarvirkjun hydroplant project included forestation. A contract with the Icelandic Forest Service was signed and 25 000 birch trees were planted.
133	HS Orka	2023	Sustainability policy	I	HS Orka's aim is to ensure appropriate monitoring of the company's effects on the environment.
134	HS Orka	2023	Sustainable development goals	I	HS Orka's sustainable development goals, thereof goal nr. 15, Life on land

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135	The Envirnoment Agency of Iceland	2024	Alþjóðlegar skuldbindingar	I	Overview of international conventions, relating to nature conservation, Iceland is a member of.
136	VesturVerk	x	Plan and construction working rules	I	Flagging identified items Concluded with the main contractor - example from Bruarvirkjun for comparison.
137	Law	2012	Law	I	work according to law nr. 80/2012 on Cultural heritage
138	VesturVerk	2024	License table	E	Table with licence and planning milestones for Hvala PP
139	HS Orka	Current	"Internal website_overview of relevant policies and procedures_2024"	I	Internal website where to find a list of policies and requirements, relevant laws and standards, organisational structure etc. (PDF overview from a live web page)
140	HS Orka	Current	Website	I	External website where to find various information about HS Orka e.g. the business, policies and organizational structure.
141	HS Orka	Current	Website	E	External website where to find publications from HS Orka e.g. annual accounts and sustainability reports .
142	HS Orka	Current	Website	I	General business conditions
143	HS Orka	Current	Website	I	General procurement and payment conditions
144	HS Orka	Current	"Gangverk Siðareglur…"	I	HS Orka´s Code of Conduct. Not publicly available but accessible to all employees on the internal website + in the management system
145	HS Orka	Current	"Gangverk Reglur gegn…"	I	HS Orka´s Anti Bribery Policy. Not publicly available but accessible to all employees on the internal website + in the management system
146	HS Orka	Current	"Gangv Reglur um uppljóstrun…"	I	HS Orka´s Whistleblower Policy. Not publicly available but accessible to all employees on the internal website + in the management system
147	HS Orka	2024	Ferlar	I	Current licensing and planning processes for power plant options larger than 10 MWe and in the utilization category of the framework plan
148	HS Orka	2024-07-24	Internal Audit Reports - Examples	E	Here is a document including three examples of internal audit reports of HS Orka. All internal audit reports are registered, stored and followed up in JIRA.
149	HS Orka	2024-07-24	Taka út starfsemina	I	The process "Taka út starfsemina" in HS Orka's management system describes how internal and external audits are planned, performed and followed up.

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150	HS Orka	2024-07-24	The 2024 plan for internal audits, external audits and risk assessments of processes	E	Here is a list of planned internal and external audits in year 2024 as well as risk assessments of main processes.
151	HS Orka	Ongoing 2024	"Integration and compliance project for Fjarðarárvirkjanir_from the JIRA management system"	I	Snapshot of how the integration plan is divided into subtasks for various departments and staff - This is the compliance/integration plan for Fjarðarárvirkjanir, a 10 MW hydropower plant purchased in 2023 by HS Orka. Snapshot from the JIRA management system.
152	VesturVerk	02-Sep-24	"VESTURVERK BOARD SIGNED DECLARATION for HSS assessment"	I	This is a document with a board meeting proposal for Vesturverk´s board, documenting the proposal that "Vesturverk will to all extent possible use and align with HS Orka´s management planning systems and relevant policies and documents." It gives a number of examples. Signed and accepted unanimously.
153	HS Orka	2024-07-25	Stjórna og vinna verkefni (meginferli)	I	The document "Stjórna og vinna verkefni" is a procedure for the main process "Stjórna og vinna verkefni." It outlines how HS Orka manages and works on projects from beginning to the end. Including project planning and compliance.
154	HS Orka	2024-07-25	Stefna og kröfur	I	The document "Stefna og kröfur" is a key document regarding compliance assurance. It includes the external policies, laws, requirements, standards etc. that apply to HS Orka's activities and operations. This document is updated regularly in the management system e.g. in connection with internal audits and through regular information updates on changes in the external governance system.
155	HS Orka	2024-08-30	VFR - 120 Samræming við lög og reglugerðir	I	This document describes the process through which external requirements are monitored by HS Orka and updated in the relevant processes in the management system.
156	HS Orka	2024	Law and regulations	I	Excel document with an updated overview of laws and regulations that HS Orka aligns with (being moved to Gangverkið)
157	Hs Orka	2024-05-21	Process council meeting	I	Process council meeting minutes show compliance with laws and regulations for the processes that were presented
158	VSÓ	Jan-24	Review of laws and regulations by VSÓ engineering office	I	Review of laws and regulations by VSÓ engineering office
159	HS Orka	2024	Internal whistleblower process	I	There is a process within the company to ensure a channel for employees to communicate information and/or data where they stand in good faith about violations of the law or other reprehensible behaviour in HS Orka's operations in accordance with the law on the protection of whistleblowers no. 40/2020. There is also a process for if employees go against the code of conduct or display other reprehensible behaviour. Notifications of this nature can come both from employees, from external sources or anonymously. Notifications are placed in the appropriate process and managed on a case-by-case basis.

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160	BSI	Feb-24	HS Orka recert report Feb 24 (1)	E	This is an Assessment Report from BSI from February 2024. The standards assessed are the following: ISO 45001:2018, ISO 9001:2015, ISO 14001:2015
161	BSI	Current	Certificates from BSI	E	The folder "Certificates from BSI" contains valid certificates of the standards ISO 9001, ISO 14001, ISO 45001 and ÍST 85_2012 (an Icelandic standard for Equal Pay Management System)
162	HS Orka	2024-07-24	2024-07-24 List of External ISO-Audit Reports 2018-2024.docx	I	Here is a list of external (third party) ISO-audit reports conducted by BSI in the years 2018 - 2024.
163	Reitun	2023	Reitun - ratings report on 10 key suppliers	I	Reitun is a third party provider of business sustainability ratings. In 2023 they rated the sustainability performance for 10 of HS Orka's main suppliers. Here are the main results. More detailed results were documented for each supplier.
164	Reitun	2023	Reitun - a company specific sustainability ratings report	I	Example of a report from Reitun (third party) on the sustainability rating of one of HS Orka's supplier (transportation company)
165	HS Orka	03-Aug	Ranking of Iceland in the CORRUPTION PERCEPTIONS INDEX 2023	E	A memo including information on Iceland's score in the Corruption Perception Index 2023
166	HS Orka	2024-07-25	Útvega aðföng og þjónustu (meginferli)	I	The document "Útvega aðföng og þjónustu" is a procedure for the main process "Útvega aðföng og þjónustu" (e. Provide supplies and services). It outlines the purchasing policy and management. It also describes how HS Orka plans and manages supplies and communicates with vendors.
167	HS Orka	2024-07-25	Kaupa vörur og þjónustu með innkaupabeiðni" (ferli)	I	The document "Kaupa vörur og þjónustu með innkaupabeiðni" describes the process of buying products and services. Note - In the management system there are numbers of more detailed job descriptions regarding purchasing.
168	HS Orka	Current	Samantekt samningsgagna	I+E	Overview over all contracts in SVA7 with type of contract, name of contractor, general conditions, contract amount and delivery date
169	HS Orka	2024-07-25	Birgjamat - skilgreiningar og viðmið (ferli)	I	The process "Birgjamat - skilgreiningar og viðmið" describes the the screening criteria used for evaluate supplier performance.
170	HS Orka	2023-04-15	Forval P104 - uppsetning vélbúnaðar	I	Prequalification questionary for possible bidders for Mechanical works in the SVA7 project
171	HS Orka	2024-01-25	email: RE: Niðuurstaða forvals	I	Email, rejecting suppliers to participate in a bid process for mechanical works in SVA7 due to lack of information about health and safety performance
172	HS Orka	2024-07-25	Meta birgja (ferli)	I	The process "Meta birgja" describes how supplier performance evaluation is prepared, performed and followed up by HS Orka

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173	HS Orka	2024-05-17	2024-05-17 Memo on the project Sustainable Supply Chain 2023-2024	I	A memo about HS Orka's project "Sustainable supply chain", including sustainability rating by a third party of the 10 main suppliers of HS Orka and a follow up through supplier meetings.
174	HS Orka	2024-06-11	SVA7-P105 opnunarfundur	I	Minutes from the tender opening meeting for P105 (control system). In the SVA7 investment project (10billion+ ISK) we have been moving towards on-line opening meetings where all bidders are invited. All bids are opened and the price is disclosed as well if there is any variation from the tender documents
175	HS Orka/KPMG	2023+	External assurance and accountant´s statements	E	See for example the signed declarations from KPMG accompanying both the 2023 Sustainability Report and the 2023 annual account of HS Orka.
176	Vesturverk/HS Orka	2024	"NEW and UPDATED stakeholder registry for Hvalárvirkjun_copy from sept2 2024"	I	New and updated Stakeholder Registry for the Hvalárvirkjun project. To be used in this format for the work ahead. Connects with the communications plan + the broader communication strategy document below.
177	VesturVerk	Jun-24	"Presentation_Árneshreppur_June 2024_English version"	E	A presentation made in Árneshreppur in June 2024, for the municipality board members. This presentation is also the basis of the public meeting in Árneshreppur on the 26th of August 2024. Gives an update on key issues regarding the Hvalá project, including environmental issues and mitigation analysis.
178	VesturVerk	Aug-24	"Hvalárvirkjun - Consultation and stakeholder involvement 2015-2024 "	E	A memorandum for the board of VesturVerk, with an overview and summary of milestones and projects involving consultation and stakeholder involvement for Hvalárvirkjun, from 2015 to August 2024.
180	VesturVerk	August 26th 2024	PPT version - Public Meeting in Árneshreppur August 26th 2024	I	Open public information meeting jointly with Landsnet, in Árneshreppur on 26th of August. - Added publicly (report + slide-show) on the Vesturverk website the same day/evening. Link here to the report and slides on the website.
181	VesturVerk	Dec-24	"Hreppsnefnd Árneshrepps_29.12.2023"	I	An information newsletter (#1), sent to the municipality of Árneshreppur outlining the status of the project and giving an update on HSS assessment plans. The idea is to issue a newsletter every 6 months.
182	VesturVerk	May-24		I	A newsletter (#2) sent to more recipients than the first; to Árneshreppur and neighbouring communities as well as regional organs, giving an update on the status of the project and informing about the full HSS assessment.
183	VesturVerk / Aton	Sep-24	Communications Plan and Template for Hvalárvirkjun sept 2024	I	A Communications Plan has been laid out for the next 12 months of the project, outlining the goals for communications, both within the company and outside. It contains a calendar with some of the upcoming milestones, five key messages in addition to possible crisis scenarios and risk management. The plan is a work in progress based on upcoming clearance of landowners

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					and water right issues, application for construction permit for preparatory work, EIA work of Landsnet, etc.
184	VesturVerk/Aton	june	"Hvalárvirkjun_Communications Strategy_with Aton_june24"	I	A draft for an overall communications strategy for Hvalá. This was based on prior work, new workshops and meetings internally and with external consultant. This is part of the overall communications and consultation work that also includes an updated stakeholder mapping registry, and a more detailed communications plan. (see in the lines above)
185	VesturVerk/Aton	june	"Hvalárvirkjun Communications Strategy_SHORT VERSION_english"	E	This is a shorter version of the Communication strategy document above, translated into English for the purpose of the management and Board´s visit to Árneshreppur in June 2024.
186	HS Orka	2024-07-25	Nonconformities in audits registered in Jira	E	The document "Non-conformities in audits handled in Jira" shows how non-conformities are registered and handled in Jira. Grievances are handled similarly in Jira.
187	HS Orka	2024-07-26	Grípa nafnlausar ábendingar	I	The document "Grípa nafnlausar ábendingar" describes the process (draft) that allows people (whistleblowers) to make anonymous disclosures regarding misconduct or raising other concerns connected to HS Orka. This is done through a registration form on the external and internal web of HS Orka.
188	HS Orka	2024-09-02	Nafnlausar ábendingar - skráningarform á vef	I	A registration form on the external and internal web of HS Orka where people (whistleblowers) can make anonymous disclosures/complaints.
189	COWI	2024	5622202-000-CMO-0005.pdf	I	INFO: Below is the model that Vatnaskil originally produced in 2014 and updated 2017. The data available was flow measurement back to 1976 in Hvala but in 2015 six measurement location were added for the development of Hvala. Today we use COWI (Sverrir) to monitor and interpret data. Presentation from COWI this summer of current status of hydrological analyses.
190	Vatnaskil	2017	Flow model	I	River flow model - Vatnaskil
191	Vatnaskil	2017	Flow model	I	River flow model - Vatnaskil - extra
192	The Icelandic Government	2015	Reglugerð um varnir gegn mengun vatns	I	The Icelandic regulation on protection against water pollution, from 1999 with later changes. See the appendices.
193	VSO/Vesturverk/HS Orka	2024	Draft Cumulative Impact Assessment for the Hvalávirkjun hydropower project	E	Special-purpose report to supplement the 2017 EIA
194	Verkis	2024	CAPEX and energy and power production.	I	A recent analysis with a possible further power increase then the third engine at Hvalá where potential energy production is reviewed. Still in draft form and yet to be reviewed by experts at COWI.

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195	Verkis/Cowi and HS Orka	2024	Ongoing work	I	COWI been asked to do the operational plan for the project. Expecting first results before end of September 2024 followed by discussions with the sales department of HS Orka to have operational plan ready.
196	Verkis	2017	Priliminary design	I	This preliminary design is based on better assumptions than usual. However, to finalize the design, we need studies on construction materials for dams and core drilling at the power station site. We also need better flow measurements in the highlands and an assessment of minimum winter flow. That is being conducted by specalist from Cowi.
197	COWI	2024	Included in Sverrir (COWI) analysis - Ongoing work	I	Included in Sverrir (COWI) analysis - Ongoing work
199	COWI	2024	Memo on power density calculations	I	Memorandum with updated numbers.
200	Veðurstofa Íslands	2023	Fjórða samantektarskýrsla vísindanefndar um loftslagsbreytingar	I	Updated summary of the scientific committee about climate change and its effects in and around Iceland.
201	VesturVerk	2019	Risk Anlysis for Hvala	E	First version of risk assessment conducted by the owner of the project in 2019. To be updated. Note: With the main contractor a safety risk assessment will be conducted for the constrution in detail.
202	Ríkisstjórn Íslands	2020	Aðgerðaráætlun í loftslagsmálum	I	Icelandic government climate action plan to 2030. See Samfélagslosun -> S.1. Orkuvinnsla -> S.1.A. Jarðvarmavirkjanir for geothermal power plants.
203	Verkís/HS Orka	2023	LCA Svartsengi	E	HS Orka's aim is to become Taxonomy aligned. That entails contributing significantly to one goal and to do no significant harm (DNSH) to the other five goals. Preparations are underway to meet these criteria. One step was life-cycle analysing Svartsengi and Reykjanes power plants with respect to GHG emissions. Svartsengi power plant LCA analysis results show that it substantially contributes to the climate mitigation goal of the Taxonomy regulation by being <100gCO2eq/kWh.
204	Verkís/HS Orka	2023	LCA Reykjanesvirkjun	E	HS Orka's aim is to become Taxonomy aligned. That entails contributing significantly to one goal and to do no significant harm (DNSH) to the other five goals. Preparations are underway to meet these criteria. One step was life-cycle analysing Svartsengi

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					and Reykjanes power plants with respect to GHG emissions. Reykjanesvirkjun power plant power plant LCA analysis results show that it substantially contributes to the climate mitigation goal of the Taxonomy regulation by being <100gCO2eq/kWh.
205	The Met Office web site	2024	Iceland climate report	E	Iceland climate report
206	The Met Office web site, "Vatnavefsja"	2024	Water bodies network	E	Water bodies network
207	HS Orka	2023	Viðbragð ef hraunrennsli stefnir að Svartsengi og tími er til niðurkeyrslu og frágangs	I	Response plan if lava flow is heading towards Svarstengi and there is time for shutdown and to prepare resiliance.
208	Lögreglustjórinn á Suðurnesjum Almannavarnanefnd Grindavíkur Ríkislögreglustjórinn	2021	Viðbragðsáætlun vegna eldgoss við Grindavík	I	Response plan for eruption close to Grindavík
209	CEIC Data	2024	Market data	E	Financial and economic information online
210	Trading Economics	2024	Market data	E	Financial and economic information online
211	International Monetary Fund	2024	IMF Datamapper	E	Country information on economic data
212	The Global Economy	2024	Web site	E	Learning resources and data on the world economy
213	Freedom House	2024	Wb site	E	Information on countries and territories
214	Transparency International	2024	Corruption Perception Index	E	Information on CPI in all countries in the world
215	Verkís	2025	Draft Project Management Plan	I	Draft PMP to provide structured framework for managing the Hvala project from start to finish.
216	Verkís	2025	ToR Framework Environmental and Social Management Plan, complemented by Purchase Order for the work.	I	This is a ToR and PO for Verkís to establish a FRAMEWORK Environmental and Social Management Plan, including actions and monitoring plan for the environment and society for the Hvalá power plant.
217	Landsnet	2024-2025	Website for Landsnet´s EIA work	I/E	Website for Landsnet´s EIA work

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218	VSÓ Consulting	2025	Cumulative Impact Assessment for Hvalárvirkjun	I	An updated Cumulative Impact Assessment (CIA) for Hvalárvirkjun and the Hvalá power lines
219	COWI	2025	PO for climate change scenarios	I	PO with COWI to do work on estimating potential impacts of climate change on the flow/project
220	VesturVerk	2025	Communication and consultation plan for Hvalá	I	Communication and consultation plan for Hvalá
221	Vesturverk	2024-2025	Stakeholder involvement		Overview of communication and stakeholder involvement - from Sept 2024 - May 2025
222	Vesturverk	2024	Newsletter to stakeholders	I	Newsletter to Árneshreppur municipality, neighbouring municipalities and Vestfjarðastofa, The Regional Development Agency
223	Vesturverk	2025	Newsletter to stakeholders	I	Newsletter to Árneshreppur municipality, neighbouring municipalities and Vestfjarðastofa, The Regional Development Agency
224	Landsnet	2025	Landsnet´s Draft System plan 2025-2034	I	Draft Long-term system plan 2025-2034 - Landsnet
225	Fjórðungssamband Vestfirðinga	2025	Public comment on government´s budget proposal for 2026-2030	I	Public comment from the body of all municipalities in the Vestfjords, on the Icelandic government´s budget plan for 2026-2030
226	HS Orka	2024	Supplier Assessments	I/E	Gives an overview of HS Orka´s work with Reitun and Ecovadis on sustainability assessments of key suppliers.
227	HS Orka	2024	Grievance Processes	I	A document showing the internal process for handling and responsibilities when it comes to receiving anonymous messages
228	VesturVerk	2025	Memo on the development of procurement procedures	E	Memo on the development of procurement procedures
229	COWI	2025	Climate-change addition to the project hydrology	I	ToR from Cowi with a proposal for defining this work.

Appendix 3 – Photographs

Photos 4, 6, 12, 16, 18, 19 and 22 by VesturVerk, all other photos by Bernt Rydgren

Photo 1: Dam axis at the planned intake site, ca 315 m.a.s.l.

Photo 2: Djúpavik Hotel with old herring factory - now art and history museum

Photo 3: Drangajökull from Ófeigsfjarðarheiði

Photo 4: Efra Eyvindarfjarðarvatn outlet

Photo 5: Farm in Àrneshreppur Municipality

Photo 6: Gljúfrabúi waterfall in Hvalá River

Photo 7: Harbour seals in Ófeigsfjörður

Photo 8: Hvalá River about 200 m.a.s.l.

Photo 9: Hvaláfoss

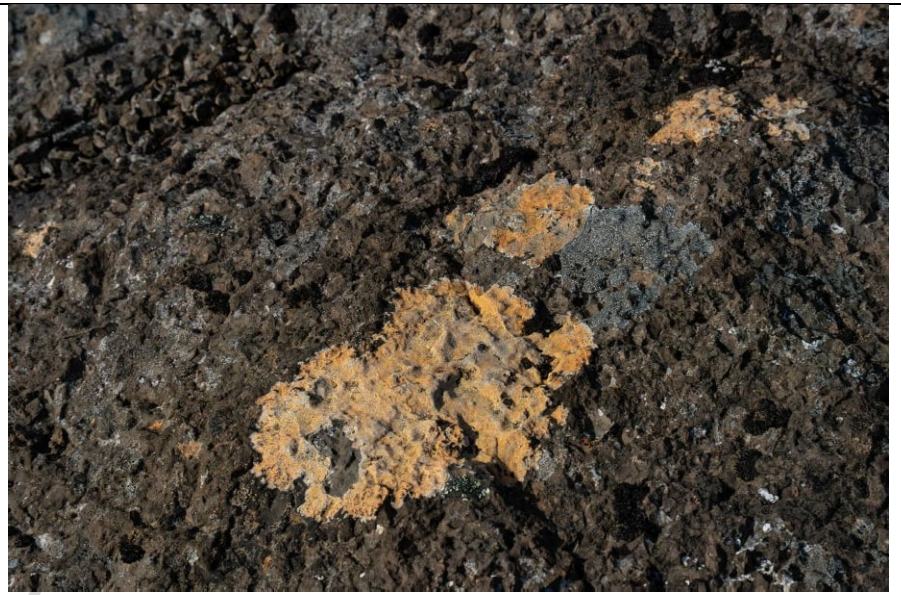

Photo 10: Lichen growing on Ófeigsfjarðarheiði, around 200 m.a.s.l.

Photo 11: Meeting with the Àrneshreppur municipal board

Photo 12: Neðra Eyvindarfjarðarvatn dam site

Photo 13: Hvalá River, confluence with Rjúkandi River in the background

Photo 14: Moss in seepage line on Ófeigsfjarðarheiði, around 50 m.a.s.l.

Photo 15: Neðra Hvalárvatn

Photo 16: Nyrðra Vatnalautavatn outlet

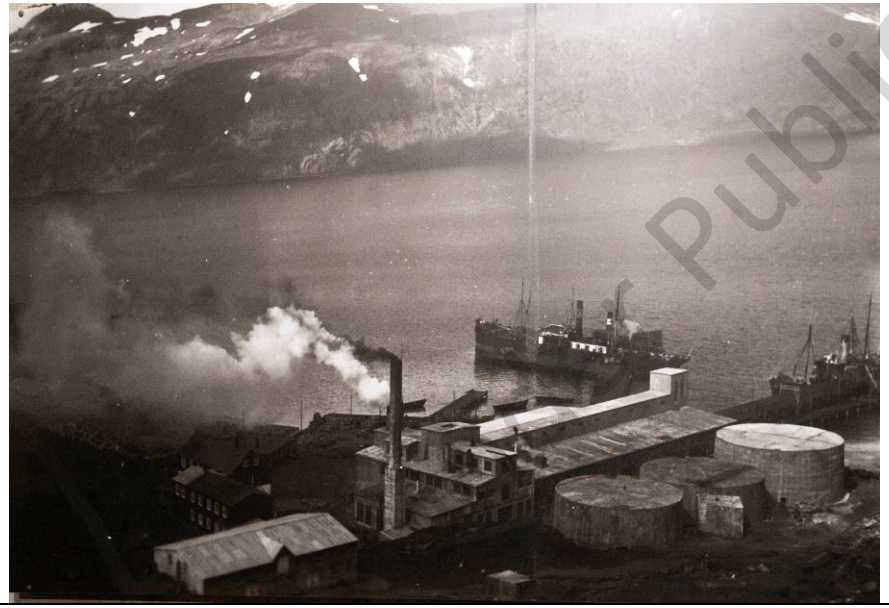

Photo 17: The herring factory in its operational time. Djúpavík museum

Photo 18: Rjukandi dam site

Photo 19: Rjúkandifoss

Photo 20: The airport in Àrneshreppur - an important lifeline for the community

Photo 21: The old Àrneskirkja in Norðurfjörður

Photo 22: Unnamed waterfall in Eyvindarfjardará River

Photo 23: Vegetation on Ófeigsfjarðarheiði, around 200 m.a.s.l. - 2

Photo 24: Vegetation on Ófeigsfjarðarheiði, around 200 m.a.s.l.

Photo 25: Vegetation on Ófeigsfjarðarheiði, around 250 m.a.s.l.

Photo 26: Vegetation on Ófeigsfjarðarheiði, below 50 m.a.s.l.

Photo 27: View over Ingolfsjörður

Photo 28: View over the Ofeigsfjördur coast line, (left to right – south to north)