



Sisimiut Kangerlussuaq

Manitsoq

Nuuk

Invitation to dialogue

Tendering and licencing procedure for the exploitation
of **HYDROPOWER IN GREENLAND** for the production of
electricity for industry or a commercial project.

May 2022

www.hydropower.gl

Government of Greenland
Ministry of Agriculture, Self-Sufficiency, Energy and Environment
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Introduction

The Government of Greenland is firmly committed to countering climate change, reducing reliance on fossil fuels and accelerating the transition to clean energy technologies. Global warming has a direct and significant impact on Greenland and our livelihood, threatening our unique biodiversity, as well as the habitats for both land and sea animals, are vanishing.

Greenland is moving towards zero-emission production of electricity. However, our enormous untapped hydropower resources exceed our domestic demands many times over, and Greenland has the potential to become a net energy exporter.

The Government of Greenland will invite investors to prepare project proposals and bid for two larger hydropower potentials in an open and transparent process. Both potentials are situated on the Southwest coast of Greenland, between Kangerlussuaq and Nuuk. These potentials are the largest currently known and the most well researched.

Our approach and understanding of sustainability are rooted in the triple bottom line approach. To be truly sustainable, we need to implement policies that balance the social, environmental and economic dimensions of sustainability.

From a Greenlandic perspective, the attraction of investors to the largest hydropower resources is expected to create value for Greenland from, e.g., new high skilled and blue-collar jobs and an additional new income stream for the treasury from royalties and taxes in relation to the hydropower resources and the off-take industry project.

Building hydropower plants for electricity production, and the industry project is a complex investment project that carries both financial and technical risks. In addition to a comprehensive data package, the Government of Greenland invites investors to participate in a market dialogue to ensure that a broad, international competition of tenderers and investors can offer their views on the tendering procedure and contribute to making the content of the conditions as attractive as possible. Each section and the themes of this invitation to dialogue will therefore include a list of overall market-specific questions, which investors are encouraged to comment on. More specific questions will be outlined in connection with the market dialogue.



Múte B. Egede
Prime Minister



Kalistat Lund
Minister for Agriculture, Self-Sufficiency,
Energy and Environment

Process for the market dialogue

The market dialogue will take place from September – November 2022. The purpose of the market dialogue is to secure an informal dialogue with a broad range of potential investors about the possibilities in Greenland, with the view to ensure input for the final tendering conditions.

Potential investors are invited to give their views in bilateral meetings of a confidential nature with the Government of Greenland.

The feedback from bilateral meetings will subsequently be published digitally and anonymously, along with the Government of Greenland's responses to the questions raised in the dialogue.

It is crucial for the Government of Greenland to be transparent and to treat international investors with fair, equal, and transparent rights and possibilities.

If potential investors request that certain information be kept confidential for the sake of competition, the Government of Greenland will be able to meet such requests, provided they do not infringe the obligations of the Greenland Parliament Act on Public Access to Documents in Administrative Files¹ or other applicable legislation.

¹ In Danish: *Landstingslov nr. 9 af 13. juni 1994 om offentlighed i forvaltningen.*

Information received will not be used in any way to provide competitive advantages to a single market player.

This invitation to dialogue only contains key elements of important topics for discussion. It will be possible to discuss other topics during the market dialogue from September – November 2022, and more questions may be outlined during the dialogue.

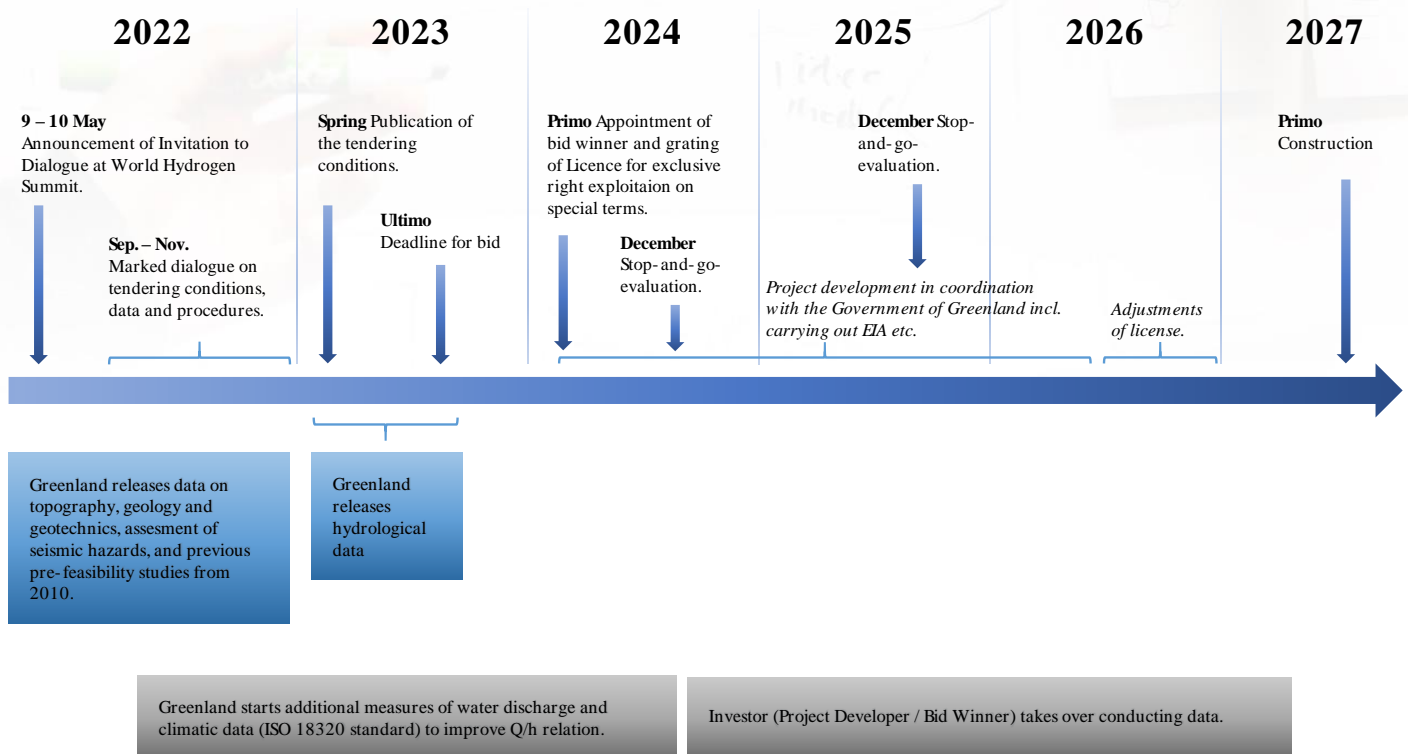
The complete tendering conditions will be set out in a letter of invitation to competitive dialogue and licencing procedure, which is expected to be published in spring 2023.

It should be emphasised that this invitation contains a preliminary description of the project and the dialogue and licencing procedure, etc., due to the current expectations. Please note in this context the Government of Greenland reserves all rights to make amendments at any time in the process, including amending the procedure, the timeline, etc., and the terms of the process.

For further information on the licencing tender procedure, including dialogue potentials and how to start a dialogue with the Government of Greenland, please visit our website: www.hydropower.gl.

Timeline for the licencing tendering procedure

The preliminary timeline for the licencing tendering procedure is outlined in the following. Please note that the timeline can be amended to accommodate possible changes arising from the market dialogue or unforeseen circumstances.



Market dialogue on tendering conditions and procedures, etc., will be carried out from September – November 2022.

In spring 2023, the Government of Greenland will publish the letter of invitation to competitive dialogue and licencing procedure with a deadline for submitting prequalification applications mid-2023. In the period from mid-2023 to primo 2024, the Government of Greenland will conduct a competitive dialogue and licencing procedure with the prequalified parties.

Primo 2024, the Government of Greenland will announce the winner(s). The winner(s) will be granted an exclusive licence to exploit hydropower for the production of electricity to be used for industry or commercial project(s) (*commercial hydropower exploitation licence*).

The commercial hydropower exploitation licence is granted on special terms for the investor to spend approx. 2.5 years to develop a final exploitation project in coordination with the

Government of Greenland and relevant institutions such as Greenland's public energy company (Nukissiorfiit) and the Municipality (Municipalities).

The Government of Greenland will establish terms and conditions to secure good progress in project development, such as stop-and-go-evaluations, penalties or bid bonds. If these deadlines are not met, the right to develop a project will be revoked, and a new round of bidding will be announced.

In both cases, the Government of Greenland may, free of charge, take over all data and other samples acquired by the investor or on its behalf.

Questions

| Does the timeline provide a sound and realistic timeline for the establishment of the hydropower and related industry project?

| Are the timeline and process attractive for investors to engage in?

The areas

The areas in question are shown on the map below. It contains two geographically different areas, namely Tasersiaq (*outlined in green*) and Tarsartuup Tasersua (*outlined in blue*) and their identified catchment areas. The areas are situated on the West Coast of Greenland, between Kangerlussuaq and the capital of Greenland, Nuuk, in the South.

Investors may submit project proposals for one or both areas simultaneously. Both areas are reserved for the tender procedure. This means that no exploitation licences for hydropower will be granted during the licencing tender procedure in the two areas.

The best entire project proposal(s) of both areas (either combined or separate project proposal on either area) regarding the areas and the use of the hydropower for commercial and industrial activities will be granted a hydropower exploitation licence for the respective area(s).

Situated near the Tasersiaq area are

The larger towns of Maniitsoq with 2,534 residents.	Kangaamiut with 293 residents.
Kangerlussuaq, which houses the international airport along with 508 residents.	Near the Tarsartuup Tasersua area is Nuuk, the capital of Greenland, which is the largest town in Greenland with 19,000 residents.

The hydropower potentials are somewhat close to seaways, and all seaways are, in general, accessible all year around.

Estimates based upon older hydrological time series show that the Tasersiaq-area has a potential of approx. 600 MW.	The Tarsartuup Tasersua-area is estimated to sustain a capacity of approx. 200 MW.	In total, approx. 6,500 GWh/a of energy production. A higher discharge is expected due to climate change.
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The potential hydropower production capacity in MW varies during the year, as the flows increase during the spring and summer seasons. The Government of Greenland will provide new and updated data for capacity during the competitive dialogue and licencing procedure.

Due to the topography of the land, the hydropower resources can primarily be exploited as reservoirs and not as run-off rivers.

The hydropower potentials can be developed by damming up existing high-lying lakes and using these as natural reservoirs. The high-lying lakes are located 650-700 m above normal sea level. The catchment areas are connected to the inland ice, and part of the water resource comes from the ablation of the inland ice cap.

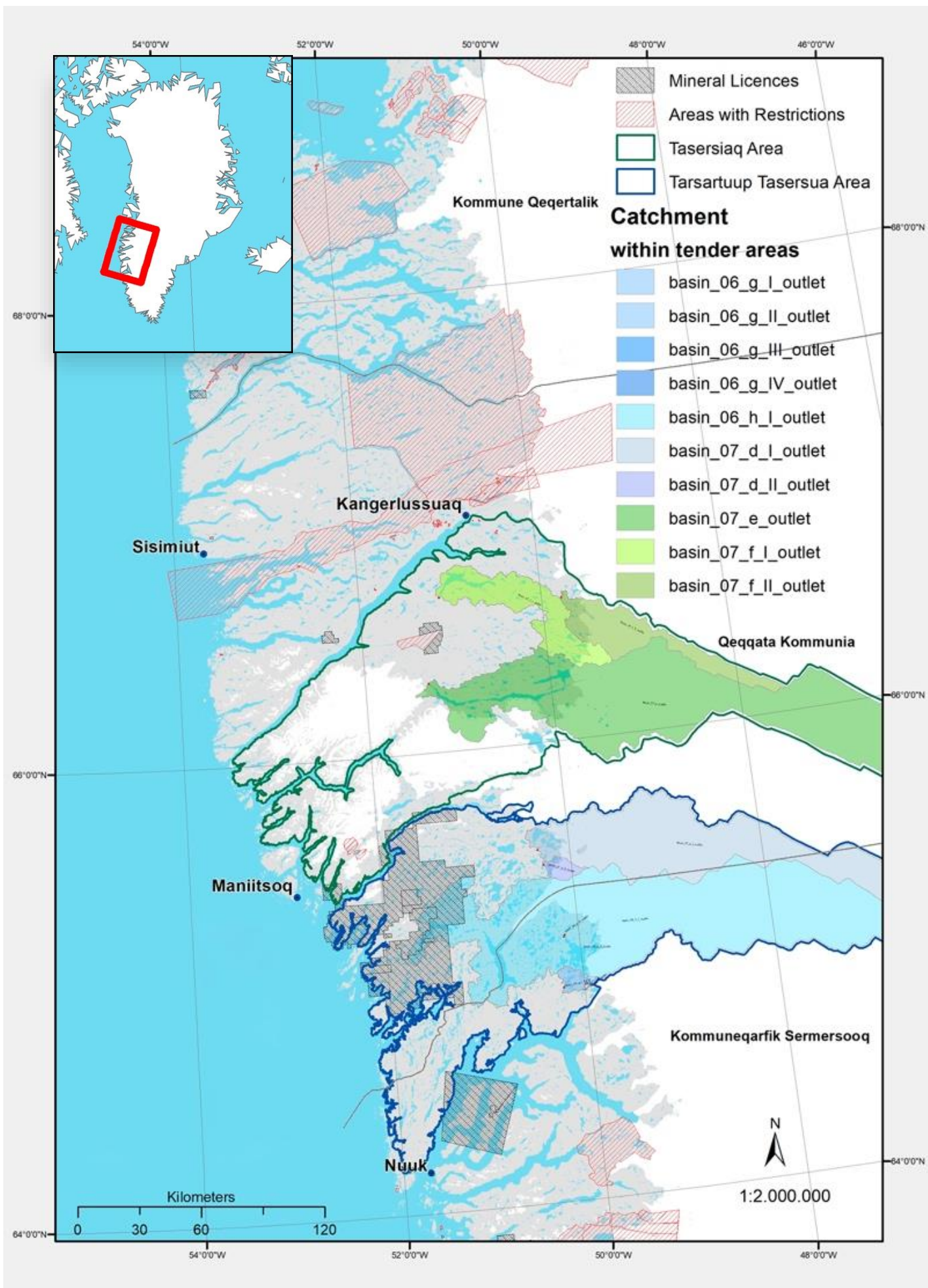


Fig. 1: Hydropower potentials to be subject to competition

Data made available by the Government of Greenland

The Government of Greenland has published existing data on climate and hydrology: www.hydropower.gl.

The Government of Greenland plans to establish and collect further data on climate and hydrology along with ice- and water forecasts, and a high-level description of the environment and culture in the two areas.

As a part of the market dialogue, the Government of Greenland invites investors to evaluate the data and suggest further data to be collected. When the investor to develop the project is appointed, data responsibility and expenses will be handed over to that investor.

The list below shows tentative data sets and the estimated time for their disclosure.

	2022	2023	2024	2025	2026
Topographic data (Alcoa data)	Medio				
Geology and geotechnics (Alcoa data)	Medio				
Assessment of seismic hazards (Alcoa data)	Medio				
Previous pre-feasibility study from 2010 (Alcoa-data)	Medio				
Ammonia study	Medio				
High-level estimation of hydropower potentials in the areas		Primo			
Time series and hydrological measures up until 2022*		Primo			
Water discharge data and climatic data up until 2022*		Primo			
Documentation of data validity and reliability for hydrological and climatic data		Primo			
High-level description of the environment and culture in the two areas		Medio			
Additional water discharge data and climatic data fulfilling the ISO 18320 standard in order to improve the Q/h relation	Starts	Ongoing	Ongoing	Ongoing	Ongoing
New hydrological measures on the most northern part of the Tasersiaq area	Starts	Ongoing	Ongoing	Ongoing	Ongoing

**Data will be made publicly available from primo 2023. Today, data can be bought from Asiaq – Greenland Survey*

Question

Are there any matters or considerations regarding additional data collection that should be considered?

Tendering conditions

The winner(s) will be chosen based on which applicant and application the Government of Greenland considers will secure the best overall agreement on the contribution to value-creating for and development of the Greenlandic society.

The tendering conditions are expected to be published in spring 2023 in the letter of invitation to competitive dialogue and the licencing procedure and will mainly be based on the following principles:

- Highest and best use of hydrological resources
- Fair and highest income stream for Greenland
- A project that fits Greenland and develops Greenlandic society
- Environmental, climatic, economic, and societal sustainable project in the long run

The attraction of investors to the largest hydropower resources is expected to create high skilled blue-collar jobs in addition to a new income stream for the treasury (*royalties*), corporation tax (*project headroom*). Moreover, the following conditions can be relevant: Reversion rights of hydropower plants to the Government of Greenland, co-ownership for the Government of Greenland, delivery of electricity to towns or other actors, conditions for the sale of licences, etc. Activities to educate the workforce about these jobs along with other benefits for Greenlandic society will be issued to be negotiated.

To ensure that only capable, experienced, serious, professional investors will participate in the competitive dialogue and licencing procedure, the Government of Greenland will also set up tendering conditions with minimum requirements regarding the applicants' financial, economic, and technical capacities.

Moreover, if the applicant is or becomes subject to some later specified exclusion grounds, the applicant will be excluded from participating in the tender procedure.

Question

| How do potential investors see the principles for tendering conditions?

The industry and commercial project relating to the hydropower plant

Greenland has no interconnected power grid, and the new hydropower developments must, therefore, first and foremost supply new industrial plants.

Therefore, bidders in this tender will have to prepare a project proposal for the entire project, comprising

- a. The hydropower licence for exploitation of hydropower for the production of electricity.
- b. The off-take industry project or commercial project, such as – but not limited to – products based on PtX (*Power-to-X*) processes.

The Government of Greenland welcomes different off-take projects (*industrial or commercial projects*), such as but not excluded to, e.g., inputs to PtX processes or a combination of different industry projects.

It is important for the Government of Greenland that the entire project can demonstrate a solid business case along with a balance between the industry project(s) environmental, climatic and societal impacts and the total benefits for Greenlandic society.

Question

Which industry or commercial projects do investors see the potential for in Greenland for using Greenland's hydropower resources?

Environmental Impact Assessment, Social Impact Assessment and Impact Benefit Agreement

The investor who wins the right to continue to develop a project, must carry out an Environmental Impact Assessment (EIA), a Social Impact Assessment (SIA) and enter into an Impact Benefit Agreement (IBA) with the Government of Greenland and the Municipality (*Municipalities*).

Environmental Impact Assessment

It will be the responsibility of the investor to carry out the EIA of the specific project, including the hydropower plants and related constructions, as well as the industry project. Both parts will be considered as a whole and in relation to each other (*cumulative effects*).

The company or consortium behind the winning proposal must expect and accept that prospecting and exploitation activities in certain parts of the offered areas may be comprised by special regulations, including in relation to the protection of the nature and environment and that exploration and exploitation activities may only be performed in specific ways and at specific times in certain parts of the offered licence areas due to accessibility, protection of the nature and the environment or other matters.

The final project cannot be initiated before it is documented that no specific environmental themes will be problematic for the entire project and that the Government of Greenland has accepted the necessary remediation measures.

The investor will have to carry out the entire EIA process before the project can be initiated.

There are the following steps for an environmental impact assessment (*EIA*) in Greenland:

- **Notification** of the project to the Ministry for Agriculture, Self-Sufficiency, Energy and Environment
- **Terms of Reference** consist of a detailed description of the Project, as well as the scope of the EIA, and they must be approved by the Minister for Agriculture, Self-Sufficiency, Energy and Environment before the commencement of the EIA itself
- **Preparation and commencement of the EIA**
- **8-Week Public Consultation**
- **EIA Approval** by the Government of Greenland
- **6-Week Appeal Window**

The Greenlandic EIA regulation is inspired by Danish and EU EIA legislation. The EIA process in Greenland is comparable to the EIA process in Denmark (*or, for that sake, any EU Member State*). The Government of Greenland has ratified the *Esposo Convention: Convention on Environmental Impact Assessment in a Transboundary Context*.

Several EIA projects have been approved by the Government of Greenland over the years, based on the administration of the Greenlandic EIA regulation and handling of the EIA process facilitated by the environmental department in the Ministry for Agriculture, Self-Sufficiency, Energy and Environment, e.g., the new Atlantic airports in Nuuk and Ilulissat respectively, and a new road connecting Sisimiut and Kangerlussuaq.

Social Impact Assessment

A Social Impact Assessment (*SIA*) is a report that outlines the impacts on social matters and social sustainability from conducting the expected activities.

 | The investor will have to carry out a SIA and obtain approval of the report as part of project development.

Impact Benefit Agreement

An Impact Benefit Agreement (*IBA*) is negotiated, made and performed by the investor, the Government of Greenland, and the Municipality (*Municipalities*).

An IBA contains terms for the creation and enhancement of positive effects and avoidance and mitigation of adverse effects in Greenland society concerning social sustainability and other socio-economic matters, including the use of Greenland workers and Greenland suppliers regarding the performance of project activities.

