



**SUSTAINABILITY INSTITUTE
AND FORUM (SIF)**
REYKJAVIK UNIVERSITY



SIF ANNUAL REPORT

NOVEMBER 2021 | 2020-2021 ACADEMIC SEASONS

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MISSION STATEMENT

The objective of SIF is to foster research and education in sustainable development focusing on the 17 UN Sustainable Development Goals (SDGs)

OUR SPONSORS



Landsvirkjun

A composite image. The top half shows a large concrete dam with water cascading over it into a river. The background features rolling green hills and a clear blue sky. The bottom half shows a power line tower in the foreground, with a sunset sky in shades of orange and yellow. The sun is low on the horizon, and the sky is filled with soft, glowing light. The overall scene is a mix of natural beauty and industrial infrastructure.

LANDSNET

TIMELINE OF ACTIVITES

2020

January

The first annual SIF Strategy Meeting was held. It was agreed that grant calls would be organised for the distribution of funding from industry sponsors.

Projects sponsored by Landsnet must relate to power system research and development.

Projects sponsored by Landsvirkjun must be sustainability-oriented research.

February

The first SIF Annual Meeting was conducted. Dr. David Christian Finger was appointed as the Director of SIF. The first SIF Project Grant Call received more than 20 applications. A total of 12.700.000 ISK was awarded to 13 projects.

COVID-19

February

The start of the COVID-19 pandemic. Projects, future meetings, and grant calls delayed.

March

A SIF Strategy Meeting was held. Dr. Hlynur Stefánsson was appointed Director of SIF. Project Manager Laurentiu Anton was brought on to manage SIF operations and development. A new grant application to support PhD students was announced as well as the creation of the SIF Student Award in Sustainability. Reykjavik University's rector, Ari Jónsson, also announced the plans for a Sustainability Center with Cornell University.

May

The SIF Annual Institute Meeting was held. Activities to date were reviewed. The following grants calls were awarded: 2020 September Project Grant Call, 2021 April Project Grant Call, 2021 April PhD Grant Call. The SIF Student Award in Sustainability was awarded. A total of 20.132.000 ISK was awarded to eight projects and one award.

2021

August

Representatives of Reykjavík University and Cornell University signed a letter of intent (LOI) on co-operation in education and research related to sustainability, with an emphasis on sustainable energy.

THE YEAR AHEAD

November

2020-2021 SIF Annual Report Released

2021

January thru June

Lecture Series in Sustainable Development

February

Annual SIF Strategy Meeting

Activities from the past academic seasons will be reviewed.
Distribution of SIF funds will be reviewed as well as plans for the year ahead.

April

Call for Grants

May

Annual SIF Institute Meeting

A year in review will be presented, with results from funded projects.
New grants will be awarded based on results from the April grant call.
Plans for the 2022-2023 academic season will be announced.

2022

November

2021-2022 SIF Annual Report Release

SIF MEMBERS



**Ágúst
Valfells**
Chair,
Department of Engineering



**Andrei
Manolescu**
Professor,
Department of Engineering



**Anna Sigríður
Islind**
Assistant Professor,
Department of Computer
Science



**Ari Kristinn
Jónsson**
Former President,
Reykjavik University



**Ármann
Gylfason**
Associate Professor,
Department of Engineering



**David Christian
Finger**
Assistant Professor,
Department of Engineering



**Einar Jón
Ásbjörnsson**
Assistant Professor,
Department of Engineering



**Einar Torfi
Einarsson Reynis**
Department of Engineering



**Eliahu
August**
Lecturer,
Department of Engineering



**Ewa L.
Carlson**
Assistant Professor,
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**Eyjólfur Ingi
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**Halldór Guðfinnur
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Professor,
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**Hannes Högni
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Department of Computer
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**Hlynur
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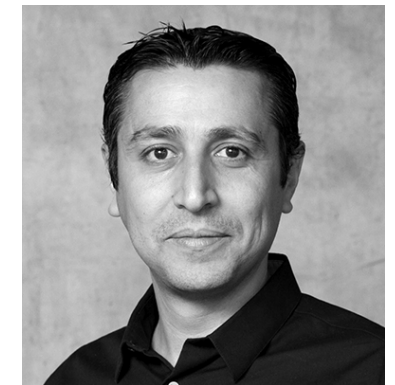
**María Kristín
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**María Sigríður
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Associate Professor,
Department of Business Administration



**Þorgeir
Pálsson**
Professor Emeritus,
Department of Engineering

SIF MEETINGS & EVENTS

2020 SIF STRATEGY MEETING

The Sustainability Institute and Forum (SIF) held its first annual SIF Strategy Meeting in January 2020, thereby marking the soft launch of the institute. This meeting served as the platform from which SIF activities for the following year were determined. Twelve faculty and staff members attended across the Departments of Engineering, Computer Science, and Business Administration. It was agreed that grant calls would be organised for the distribution of funding from industry sponsors. Projects sponsored by Landsnet are to be related to power system research and development. Projects sponsored by Landsvirkjun are to be research that is clearly sustainability oriented.

2020 SIF ANNUAL MEETING

In February 2020, the first SIF Annual Meeting was conducted, with 23 members registered. Dr. David Christian Finger was appointed as the SIF Director. Suggestions for an Advisory Board were made, to be composed of external partners who are not directly involved in SIF affairs. The objective of such a board would be to provide unbiased feedback. Peer review was suggested for this round of grant applications. The next meeting was scheduled for the Fall of 2020 and annual seminar was proposed for the following year to showcase results from funded projects.

2020 FEBRUARY PROJECT GRANT CALL

With more than 20 applications, 13 projects were awarded funding after a peer review evaluation process from all active SIF members.

Project Name	Applicant(s)	Awarded
Electrification of heavy-duty vehicles in Iceland – feasibility and strategies	Hlynur Stefánsson Eyjólfur Ingi Ásgeirsson, Ragnar Kristjánsson	3.000.000 kr
LCA of Icelandic products	Guðrún Arnbjörg Sævarsdóttir Einar Jón Ásbjörnsson David Christian Finger Anna Sigríður Islind	1.650.000 kr
Mobility in Reykjavik urban area	María Óskarsdóttir Magnús Már Halldórsson	1.100.000 kr
Predictors of healthy cognitive aging: The AGES-Study	María Kristín Jónsdóttir	1.100.000 kr

Project Name	Applicant(s)	Awarded
Towards sustainable energy markets in Europe: Case of capacity markets	Ewa Lazarczyk Carlson	1.000.000 kr
Towards Overcoming Local Optima in Extremum Seeking Control for Wind Farms	Eliahu August	1.000.000 kr
Molecular Dynamics of Perovskite Solar Cells	Andrei Manolescu	550.000 kr
Development of an experimental facility with specific focus on wind energy	Ármann Gylfason	550.000 kr
Geysir modelling	Juliet Ann Newson	550.000 kr
Extracting nutrient from lava for cultivation of microalgae	Halldór Guðfinnur Svavarsson	550.000 kr
Learning about Climate Change in Multiuser Virtual Reality	Hannes Högni Vilhjálmsson	550.000 kr
Are green bonds relevant financing alternatives?	Stefan Wendt	550.000 kr
Towards a more sustainable use of space: Analysis of internet data for	Anna Sigríður Islind	550.000 kr

Shortly after the first annual meeting, the COVID-19 pandemic struck. Many funded projects were delayed, as well as the institute meeting scheduled for Fall of 2020. A grant call was placed in September 2020 for additional projects, for which the distribution of funding was delayed.

2021 SIF STRATEGY MEETING

Dr. Hlynur Stefánsson was appointed Director of SIF. Project Manager Laurentiu Anton was brought on to manage SIF operations and development. The SIF website was scheduled for a relaunch.

A grant call scheduled for April 2021, with results to be announced at the 2021 SIF Annual Institute Meeting, scheduled for May. The results from the September 2020 grant call will also be announced then. The grant call process was refined to include both a SIF Project Grant call as before and a SIF PhD Grant call to support PhD students with a stopgap grant while trying to secure RANNIS funding. It was also decided to create the SIF Student Award in Sustainability to encourage student research in sustainability-oriented projects.

Reykjavik University's rector Ari Jónsson also announced the plans for a Sustainability Center with Cornell University, and encourage SIF to consider its placement within this collaboration with a delegation scheduled for August 2021.

2021 SIF ANNUAL MEETING

The meeting consisted of 30 SIF Members, students and staff of Reykjavik University and the public. Activities to date were reviewed. The following grants calls were awarded: 2020 September Project Grant Call, 2021 April Project Grant Call, 2021 April PhD Grant Call. The SIF Student Award in Sustainability was awarded.

2020 SEPTEMBER PROJECT GRANT CALL

Three projects were awarded grants from last fall's grant call.

Project Name	Applicant(s)	Awarded
On-line and offline scheduling models for charging EVs under limited resources	Eyjólfur Ingi Ásgeirsson	1.200.000 kr
Possible Solutions for Reinforcing Transmission Grids under Extreme Weather Conditions	Mohamed Abdelfattah	1.532.000 kr
Portaplants2.0	María Sigríður Guðjónsdóttir	1.300.000 kr

2021 APRIL PROJECT GRANT CALL

Two projects submitted applications to the April grant call, both of which received funding.

Project Name	Applicant(s)	Awarded
Construction of MAPI based solar cells	Halldór Guðfinnur Svavarsson	300.000 kr
Project Extension: An Assessment of the Techno-Economic, Geopolitical and Strategic Feasibility of Exporting Hydrogen from Iceland to Europe	Ewa Lazarczyk Carlson	700.000 kr

2021 APRIL PHD GRANT CALL

The SIF PhD Grant call received six applicants. The application form was based on the RANNIS Research Fund application form. Awarded recipients are funded for one year, as they would from receiving RANNIS funding and must apply to RANNIS for the following year. Three of six applications were awarded after evaluation from an external evaluation committee.

Project Name	Applicant(s)	PhD Student	Awarded
Atomistic studies of organo-halide materials for photovoltaics (ATOMAP)	Andrei Manolescu	Rachel Brophy	5.000.000 kr Funded by: Landsvirkjun
A transition towards a 100% electric Heavy-Duty Vehicle fleet in Iceland: Feasibility and impact assessment of the charging load on the transmission and distribution system	Ragnar Kristjánsson Hlynur Stefánsson Eyjólfur Ingi Ásgeirsson Brynhildur Davíðsdóttir	Albert Alonso	5.000.000 kr Funded by: Landsnet
Adaptation of aluminum reduction cell for carbon capture and sequestration – a modelling approach	Guðrún Sævarsdóttir María Sigríður Guðjónsdóttir	Brandon Velasquez	5.000.000 kr Funded by: 50% Landsnet 50% Landsvirkjun

2021 SIF STUDENT AWARDS IN SUSTAINABILITY

Students from all study levels at Reykjavik University were eligible for nomination by a supporting faculty member. Seven nominations were received. Projects were reviewed based on the novelty of the research, the potential impact, how positive their environmental impact will be, and how they enhance the UN SDGs. Review committee composed of SIF members not tied to any nomination and from all representative departments. One student was awarded.

Project Name	Recipient	Awarded
Developing Energy System Planning Models in Kenya	Xavier Shioya Musonye	100.000 kr



SIF SCIENTISTS FIND MICROPLASTICS IN VATNAJÖKULL

"We confirm that there is microplastic in Vatnajökull," says Hlynur Stefánsson, associate professor at the Faculty of Engineering at Reykjavík University. In addition, Einar Jón Ásbjörnsson, lecturer at the Faculty of Engineering, is taking part in the study. "We analyzed microplastic particles in snow cores that were collected in a remote and unspoilt place on Vatnajökull. Using a microscope and spectroscopy, we saw and analyzed microplastic particles of various shapes and sizes. Our results show that the transport of microplastics in the atmosphere is a reality that we have to face. "

"Following these initial results, we will investigate how the plastic particles affect the photosensitivity of the ice and its structure, and whether they can possibly accelerate melting glaciers. All the ice in the world is sometimes called a grey sphere and it is a fragile system and changes in it have a great impact on the world's climate and sea level." – Hlynur Stefánsson and Einar Jón Ásbjörnsson



REYKJAVIK UNIVERSITY SIGNS SUSTAINABILITY COLLABORATION WITH CORNELL UNIVERSITY

Representatives of Reykjavík University and Cornell University have signed a letter of intent (LOI) on co-operation in education and research related to sustainability, with an emphasis on sustainable energy. The LOI is based on Cornell's framework agreement with GRP Iceland on extensive co-operation in the field of sustainability, energy, innovation and climate, which has been in place since 2016, and was renewed on the same occasion.



Ragnhildur Helgadóttir RU President; Michal C. Moore, Visiting Professor from Cornell, and Hlynur Stefánsson, Associate Professor at the Faculty of Engineering and Director of the Sustainability Institute and Forum (SIF) at Reykjavik University. On display are Joel M. Malina, Cornell University's Director of Communications, and Lynden Archer, President of the Faculty of Engineering.

February 2022

Next SIF Strategy Meeting

May 2022

Next SIF Institute Meeting

