

# VATTENFALL



## Green Financing Framework

2022 May



## Background and Rationale

*Our goal is to enable fossil-free living within one generation and to do so responsibly. We are committed to respecting the environment and human rights throughout our value chain, from our suppliers to our customers and the communities we work in.*

*At Vattenfall, one of our core beliefs is that sustainability is the business: a fundamental and fully-integrated part of our operations and strategy. In practice, this means that our Business Areas and Staff Functions are directly responsible for their sustainability performance and therefore include material social and environmental topics in their respective strategies and business plans. This comes together at Group level, where our most important strategic targets (CO<sub>2</sub> emissions with science-based target approval) are given equal weight with the financial targets. The Approach to Sustainability Section describes how our Business Areas contribute towards fossil-free living while focusing on sustainability throughout the energy value chain.*

*Understanding and measuring the impact of our business activities from a holistic point of view is essential for improving decision-making as well as raising awareness of the risks and opportunities related to impacts from social and environmental perspectives. Since 2017 we have been refining and consulting experts on our methodology to quantify our full impacts on people and society – both positive and negative – from economic, social, and environmental perspectives. We continuously review our approach as it is increasingly integrated into the company's decision-making processes and influences how we contribute towards various sustainability initiatives, such as the UN's Global Sustainable Development Goals*

*We strive to identify our impacts on people and society, although much of the social value we create – e.g., providing and expanding essential energy infrastructure – and the costs we incur – e.g., impacts on people's health – can be difficult to quantify.*

*As Vattenfall decarbonises on its path to make fossil-free living possible within one generation, the costs associated with our CO<sub>2</sub> and other emissions will decrease in tandem. The effects of this will be gradual. Meanwhile, we are implementing best available technologies and ensuring that our power plants emit less than the legal limits for non-CO<sub>2</sub> emissions. We put great focus on our full value chain and have set a science-based target for Scope 3 emissions and we continue to integrate the value creation approach in our projects, leading to reduced environmental impact. The quantification of certain benefits, such as biodiversity or ecosystem restoration, remains under review, as do potential negative impacts including land use, ecosystem alterations and others. Nonetheless, we are taking steps to quantify some of these aspects and strive to have a net-positive impact on biodiversity by 2030.*

*Our Green Financing Framework provides an opportunity for investors to learn about our position to drive positive transformation within the utility industry and support us in this journey.*

Solna May 2022

CEO

Anna Borg

CFO

Kerstin Ahlfont

Head of Sustainability

Annika Ramsköld

*“Vattenfall’s purpose is to Power Climate Smarter Living and our goal is to enable fossil free living within one generation”*



## Approach to Sustainability

### 1. A sustainable strategy

We are at the epicentre of the energy transition which is progressing at an increasing speed, and brings opportunities for a company like ours. Vattenfall has formulated a strategy to reach our goal to enable fossil free living within one generation. This is our business strategy and it is sustainable. The sustainable strategy steers our direction; the way we prioritise business opportunities, focus our efforts and engage our employees, so that we can create value for our stakeholders by remaining a leader in the decarbonisation of our sector and beyond.

### 2. Our Beliefs about the future

Vattenfall operates in a complex context highly influenced by many factors, such as macroeconomic and geopolitical conditions, technology developments and regulation. Below, we summarise our beliefs about the future, which represent the most important trends we need to monitor, leverage and navigate to successfully deliver on our strategy.

#### Sustainability is the business

Sustainability is increasingly becoming a competitive advantage and business necessity. This is driven by commitments as well as requirements from corporations, investors, customers and governments and encompasses all aspects of sustainability (financial, social and environmental). Only in recent years, sustainable investments have experienced double-digit growth, and companies committed to science-based targets increased six-fold in the EMEA region since 2019. In addition, half of consumers see sustainability as one of the five most important aspects within several product categories and over a third are willing to pay on average a quarter more for sustainable products

#### Competition intensifies further, with new players and capital entering the market

We believe more players and actors will want to join the race towards sustainability as the competitive advantage of sustainable business models and products grows. For the energy market, this means intensified competition for business opportunities within generation, distribution and consumption of sustainable and fossil-free energy solutions. Cash-rich oil and gas majors and automotive manufacturers will continue to move into the sector, as well as digital giants and innovators introducing disruptive innovations, to find new and attractive ways of engaging with energy customers. Fierce competition will pressure future margins and force companies to clearly leverage competitive advantages.

#### Broad common understanding crucial to ensure the required pace of change

While regulation and policy drive the transition forward, a common view for infrastructure build-out is lacking which risks slowing down permitting processes and the implementation of projects. Support for various technologies may vary over markets and time. Therefore, it will be important for companies as well as politicians and other organisations to both monitor the public opinion and work together with all stakeholders to achieve the necessary pace in the energy transition.

#### Accelerating demand for fossil-free electricity will challenge the energy system

As electrical vehicles are rolled out, and heating and industrial processes become powered by electricity, the demand for fossil-free electricity will accelerate. As a consequence, by 2050, generation of electricity needs to double in Sweden to meet demand. In Germany, renewables capacity needs to more than quadruple and in the Netherlands to increase ten-fold in order to allow for the phase-out of fossil fuels as well as increasing demand. A majority of the generated electricity will come from renewable and intermittent energy sources. This will challenge the energy system as it will have to

cope with unprecedented fluctuations in electricity supply and demand. Sufficient flexible capacity, to cover for periods when weather dependent sources cannot deliver, and the necessary grid infrastructure, will therefore be crucial to ensure security of supply.

**Bridging the skill gap will be critical to succeed in the energy transition**

Changing demographics and an accelerating energy transition will create an increasing labour shortage, resulting in fierce competition for key technical and project management skills. In addition, a competence shift is expected, where new skills within analytics and digitalisation, business development and cross-functional collaboration are needed. To attract talent, it will be essential for companies to offer innovative and competitive benefits and new, more flexible ways of working. Companies also need to retain and retrain current employees to ensure the right competence and to leverage the full potential of the workforce.

**Corporations need to build resilience to unexpected change**

Driven by increased digitalisation, geopolitical instability and new types of criminal activities, companies will increasingly be forced to tackle new and evolving threats such as cyber-attacks, disruptive events, disinformation and espionage. Companies must build the ability to secure assets and to ensure business continuity while facing these threats.

**3. Materiality**

The result of our materiality analysis is displayed in the matrix below. The most material topics are the topics in the top right corner and are ranked highest in both importance and significance of impact on society, environment or economy, by our stakeholders. The colour of the topics connects the topic with one of the five strategic focus areas described below.

Materiality matrix

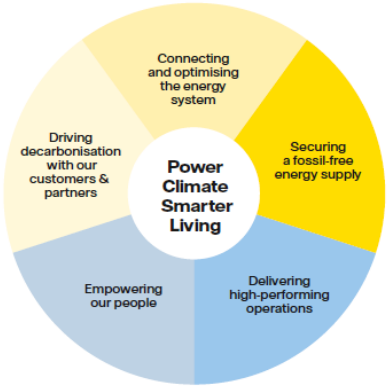


- Top material topics:
1. Reducing CO2 emissions and phasing out fossil fuels,
  2. Investing in renewable energy,
  3. Providing affordable energy,
  4. Minimising emissions of pollutants into air, water and land,
  5. Protecting nature and biodiversity,
  6. Providing affordable, stable, and flexible grid infrastructure for future needs,
  7. Developing innovative and sustainable services and solutions for customers.

The main takeaway of the materiality analysis is that our strategy and prioritised Global Sustainable Development Goals (SDGs) remain in line with stakeholder expectations, and that the pandemic is no excuse for slowing down or reducing our strategic ambition. The three most material topics remain unchanged and are closely related to the business ambitions, while topics related to empowering our people and delivering high-performing operations are considered necessary for achieving our business goals, but secondary to the goals themselves. In-depth interviews also highlighted that engaging with stakeholders to gain local acceptance will be critical for us to make the energy transition a success.

3. Governance

Vattenfall formulated a strategy in 2016 with the purpose to Power Climate Smarter Living and the goal to enable fossil-free living within one generation. Vattenfall has five strategic focus areas, according to a strategy wheel, which visualizes Vattenfall’s way forward to ensure profitability and be a leader in the energy transition. In addition to this are the financial targets, decided on in the Annual General Meeting. Group scorecards support by linking to financial, non-financial and operational requirements, for instance with regard to CO2 emissions and fossil free generation capacity. Reporting back to the Board is performed as part of the quarterly reporting. Vattenfall’s strategy is well aligned with the UN’s Agenda 2030 Sustainable Development Goals and will drive Vattenfall to make an important contribution to the global sustainable development agenda.



4. The United Nations Sustainable Development Goals

Vattenfall contributes to all 17 of the goals to varying degrees. Our impacts on and contributions to all of the goals are important, but we have grouped the goals to show where we contribute at a global level via our strategy, where we contribute at a more local level via our ways of working and where we contribute indirectly via our actions.



**THE GLOBAL GOALS**  
For Sustainable Development

**Vattenfall’s contribution to the UN’s Sustainable Development Goals**

Vattenfall contributes to all 17 goals to varying degrees. Our impacts on and contributions to all of the goals are important, but we have grouped the goals to show where we contribute at a global level via our strategy, where we contribute at a more local level via our ways of working and where we contribute indirectly via our actions.

**GOAL 7 Affordable and clean energy** is what our strategic objective Leading towards Sustainable Consumption is about. Vattenfall contributes for example via initiatives such as Environmental Production Declaration (EPD) and Life Cycle Assessments (LCA), so customers know what impact the electricity and heat they buy from Vattenfall has. Vattenfall develops new products that enable customers to generate their own energy (e.g. using solar panels and heat pumps) and even sell it to Vattenfall or others (e.g. via PowerPeers). In the Netherlands, Vattenfall has joined an initiative called Energy Poverty. Together with insurance companies, several cities and municipalities like Amsterdam and Almere, Vattenfall finds solutions that prevent customers from falling into the financial debt trap. Currently, Vattenfall operates 4.2 GW of renewable energy installed capacity.

**GOAL 9 Industry, innovation and infrastructure** is the goal where Vattenfall has initiated various new partnerships and projects, such as collaborations with energy-intensive Swedish industries like SSAB/LKAB and Northvolt. Also, the entire e-mobility investment with everything from the older partnership based initiatives like V2 Plug-in hybrid vehicle Joint Venture with Volvo Cars, Roadmap Sweden, and Nollzon to the new InCharge network reflects Vattenfall's ambition to drive development and clearly contribute.



**GOAL 11 Sustainable cities and communities.** Vattenfall's cooperation with Uppsala is a good example of realising a common climate target with a city (the climate protocol was unique in nature and very much before its time and has now been followed by renewed cooperation agreement), investing in infrastructure (electricity, district heating with renewable fuels and waste incineration, remote cooling, e-mobility charging) and collaborating with different players and customers in the cities.

Additionally, Vattenfall's ambitions to operate 0.5 million charging points by 2030 further enabling the electrification of transport and reducing tailpipe emissions in and around cities. The goal also includes engaging with local stakeholders, such as around Pen y Cymoedd and with Sami, to secure impacted stakeholders are included in the energy transition.

**GOAL 12 Responsible consumption and production** fits hand in hand with our purpose Power Climate Smarter Living and clearly links to our strategic objectives. Driving decarbonisation with our customers & partners and Securing a fossil-free energy supply. Vattenfall's entire CO2 roadmap is about sustainable production and supporting our customers and partners to use their energy sustainably and also to have their own sustainable production. Furthermore, wind power initiatives, the conversion of coal plants to gas, electricity and renewable sources, customer offerings such as photovoltaics and heat pumps, clear product declarations such as EPD and LCA, different cooperation with suppliers and customers and attracting energy-intensive industries, such as data centres, to Sweden from countries with a higher share of fossil in its electricity production are proof points and success stories of our commitment. In Goal 12, resource efficiency, reduction of hazardous chemicals, waste, emissions to air and water are also affected. For example, Vattenfall has banned landfilling decommissioned wind-turbine blades and a target to recycle all the blade material by 2030.



**GOAL 13 Climate action.** Our focus and our purpose – Power Climate Smarter Living – is completely in line with this goal. Vattenfall has made strong commitments such as reducing our emissions in line with the 1.5 degree global warming trajectory certified by the Science Based Target initiative and reaching Net Zero by 2040. On a European level, Vattenfall is involved in various discussions around improving the European Emission Trading Scheme, how to end fossil dependence, sustainable biomass, etc.

**GOAL 17 Partnerships for the goals.** Major cooperation is in many ways a prerequisite for success, as the goals need to be on a large scale to have global impact. Vattenfall has intensified cooperation with other players. This applies to the electrification of the transport sector and industries, the construction of wind power (bringing in investors and cooperating in Wind Europe to find common sustainability criteria and streamline planning, construction and operation, etc.), as well as helping our larger customers achieve sustainable production (HYBRIT [industry cooperation], Northvolt [battery manufacturing]). Furthermore, Vattenfall encourages establishing early dialogues and strong relationships with the local communities, landowners and authorities to ensure the energy transition happens with the pace required. Via First Movers coalition we support demand of materials from transformative technologies required to reach the global climate targets 2030 and 2050.



## Green Financing Framework

This Green Financing Framework has been developed in accordance with the 2021 ICMA Green Bond Principles (GBP) as well as the 2021 APLMA, LMA and the LSTA Green Loan Principles (GLP). Through this Framework, Vattenfall may issue different securities including, but not limited to, Green Bonds and take up Green Loans. The Green Financing Framework is aligned with the four core components of the GBP and GLP, as well as the recommended External Review component:

1. Use of Proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting
5. External Review

### 1. Use of Proceeds

Vattenfall has established this Framework to issue Green Finance Securities for which the proceeds will be exclusively allocated to finance, or refinance, in whole or in part, Eligible Assets made by Vattenfall, its subsidiaries and partner entities such as Hybrit. Eligible Assets promote the transition towards a low-carbon and environmentally sustainable society, as determined by Vattenfall in accordance with the categories in the table below. Vattenfall can finance new Eligible Assets and refinance existing Eligible Assets. New financing is defined as Eligible Assets that was finalised and taken into operation up to one year before the approval by the Green Finance Committee. Eligible Assets that were finalised and taken into operation more than one year and maximum three years before the approval in the Committee are defined, monitored and reported as refinancing. The distribution between new financing and refinancing will be reported on in the Green Bond Investor Report.

The legal documentation for each Green Finance Securities will refer to this Framework. Proceeds will be allocated to capital expenditures and R&D within the Eligible Asset Categories of this Framework. This Framework has been developed to, more broadly, align with the substantial contribution part of the technical screening criteria of the EU Taxonomy as of December 2021.

### Exclusions

Proceeds from Green Finance Securities will not be allocated to Assets for which the purpose is fossil energy production, nuclear energy generation or environmentally harmful resource extraction (such as rare-earth elements or fossil fuels).

### United Nations Sustainable Development Goals

In this Framework, each Eligible Assets category has been mapped to the SDGs in accordance with the High-Level Mapping to the Sustainable Development Goals published by ICMA.

**Eligible Asset Category: Renewable Energy**

Financing of production facilities and related infrastructure

Substantial contribution to the EU environmental goal: Climate Change Mitigation

United Nation Sustainable Development Goal: 7.2



**Solar Power**

Electricity generation and related infrastructure using solar photovoltaic technology and concentrated solar-thermal power (CSP) technology.

**Wind Power**

Electricity generation and related infrastructure from wind power.

**Hydro Power**

Electricity generation and related infrastructure from hydro power and electricity generation and related infrastructure from ocean energy technologies that comply with one of the following:

- the facility is a run-of-river plant and does not have an artificial reservoir
- the power density of the facility is above 5W/m<sup>2</sup> the life-cycle
- GHG emissions are lower than 100gCO<sub>2</sub>e/kWh.

**Geothermal Power**

Electricity and heat generation and related infrastructure where the geothermal energy is produced with life-cycle GHG emissions lower than 100gCO<sub>2</sub>e/kWh.

**Bio Power**

Electricity generation and related infrastructure from bioenergy. A project needs to fulfil all Substantial contribution criteria of the EU taxonomy as defined in the version decided December 2021.

**Hydrogen**

Manufacture and related infrastructure of fossil-free hydrogen and hydrogen-based synthetic fuels, including but not limited to partner entities such as Hybrit.

**Heat/Cool Using Waste Heat:**

Production of heating/cooling and related infrastructure using waste heat.

**Eligible Asset Category: Transmission and distribution of electricity**

Financing of transmission and distribution systems that transport electricity and related infrastructure.

Substantial contribution to the EU environmental goal: Climate Change Mitigation

United Nation Sustainable Development Goal: 7.2



**Transmission and distribution of electricity**

Construction, reconstruction and upgrades of transmission and distribution systems that transport low carbon electricity generation on average<sup>1</sup> below the threshold of 100 gCO<sub>2</sub>e/kWh over high-voltage, medium-voltage and low-voltage distribution systems.

**Eligible Asset Category: Energy Efficiency**

Financing of energy efficiency initiatives including electrification and related infrastructure

Substantial contribution to: Climate Change Mitigation

United Nation Sustainable Development Goal: 7.3, 9.4



**Smart Grids**

Installation of instruments and devices for measuring, regulate and control energy performance.

**District Heating**

District heating/cooling where the system is using at least 50% renewable energy, 50% waste heat, 75% cogenerated heat or 50% of a combination of such energy and heat) and related infrastructure distribution.

**Power to heat**

Production of heat in heat pumps

**Eligible Asset Category: Clean Transportation**

Financing of initiatives including electrification of transportation and related infrastructure

Substantial contribution to: Climate Change Mitigation

United Nation Sustainable Development Goal: 11.2



**Infrastructure for clean transportation**

Construction, re-construction and upgrades of infrastructure that is required for zero tailpipe CO<sub>2</sub> transport solutions including electric charging points, electricity grid connection and upgrades as well as, hydrogen fuelling stations

<sup>1</sup> the average system grid emissions factor, calculated as the total annual emissions from power generation connected to the system, divided by the total annual net electricity production in that system, is below the threshold value of 100 gCO<sub>2</sub>e/kWh measured on a life cycle basis in accordance with electricity generation criteria, over a rolling five-year period

## 2. Process for Project Evaluation and Selection

Vattenfall has an established process for evaluating and selecting investment projects that can be funded by the company's green bonds. The Green Finance Committee (formerly the Green Bond Committee) consists of representatives from the Sustainability team, Strategy & Business Development and Group Finance. The committee meets on a regular basis and at least once a year. Decisions are made in consensus. The responsibilities of the committee is, among other things, to evaluate the compliance of the proposed Eligibility Assets with the eligibility criteria outlined in the Use of Proceeds section of this framework as well as applicable laws and regulations and Vattenfall's policies and long term goals for social and environmental sustainability.

The Green Finance Committee is also responsible for replacing investments that no longer meet the eligibility criteria (following divestment, liquidation, concerns regarding alignment of underlying activity with eligibility criteria etc.). The Committee will review and update this Green Financing Framework to reflect relevant changes in Vattenfall's corporate strategy, technology and market developments such as the EU classification of environmentally sustainable economic activities the EU Taxonomy.

## 3. Management of Proceeds

An amount equal to the proceeds of any Green Finance Securities raised under this Framework will be credited to a separate register that will support Vattenfall's financing of Eligible Assets. As long as Green Finance Securities are outstanding and the separate register has a positive balance, funds may be deducted from the separate register and added to Vattenfall's lending pool in an amount up to all disbursements from that pool made in respect of Eligible Assets. The separate register will ensure monitoring of the Eligible Assets. Vattenfall's Treasury team is responsible for the allocation of proceeds. If, for any reason, an Eligible Asset ceases to comply with the requirements set out in this Framework, such an asset will be removed from the earmarked pool. Proceeds yet to be allocated towards Eligible Assets will be placed in the liquidity reserves and managed as such.



4. Reporting

To enable investors to follow the development and to provide insight to prioritized areas Vattenfall will provide a Green Financing Impact Report on at least an annual basis. Vattenfall intends to report on quantitative impact indicators where feasible and provided relevant data information is available. The Green Financing Investor Report will include:

4.1 Allocation Reporting

1. A description of the portfolio of Eligible Assets;
2. Type of financing Securities utilized and respective outstanding amounts;
3. Information on the split between new financing and re-financing;
4. A list of Eligible Assets including the amounts allocated, including allocated and disbursed amounts per category and geographical distribution.

4.2 Impact Reporting

The impact reporting aims to disclose the environmental impact of the Eligible Assets financed under this Framework, based on Vattenfall’s financing share of each Asset. As Vattenfall can finance large and small Eligible Assets, impact reporting may, to some extent, be aggregated. The impact reporting may also be aggregated due to confidentiality agreements or competitive considerations. The impact assessment is provided with the reservation that not all related data can be covered and that calculations therefore will be on a best effort basis e.g. if an Eligible Asset is under development but not yet operational, Vattenfall will provide best estimates of future environmental impacts. The impact assessment will, if applicable, be based on the Key Performance Indicators (KPIs) presented in the table below.

<b>Renewable energy</b>	<b>Energy Source</b> Estimated CO2 reduction (ktonnes)
<b>Transmission and distribution of electricity</b>	<b>Transmission and distribution of electricity</b> Distribution cables installed (in km)
<b>Energy efficiency</b>	<b>Smart Grids</b> Number of installed units <b>District Heating</b> Estimated CO2 reduction (ktonnes) <b>Power to Heat</b> Estimated CO2 reduction (ktonnes)
<b>Clean transportation</b>	<b>Infrastructure for clean transportation</b> Number of installed units

## 5. External Review

### 5.1 Second party opinion (pre-issuance)

To secure alignment with national and international guidelines, in accordance with the Guidelines developed by the Green Bond Principles, Vattenfall has engaged Cicero Shades of Green to act as an independent external verifier of this Green Financing Framework. The Second Party Opinion report will be made publicly available on Vattenfall's website.

### 5.2 Third-Party Review (post-issuance)

Vattenfall will appoint an external, independent auditor to annually assure that the selection process for the financing of Eligible Assets and that the allocation of the net proceeds of the Green Financing Securities are done in accordance with Vattenfall's Green Financing Framework and the impact calculation.

### 5.3 Publicly Available Documents

The Green Financing Framework, the second party opinion and the investor report will be publicly available on Vattenfall's website.

## Appendix

### Documentation of Environmental and Sustainability work

#	Name	Public / Non-Public
1	Annual Report	Public
2	Environmental policy	Public

**VATTENFALL**

