Sydvatten AB Green Finance Second Opinion

13 April 2023

Executive Summary

Sydvatten AB (Sydvatten) is a municipally owned company producing drinking water for 1 million inhabitants, companies and public organisations in 17 municipalities in the region of Skåne in southern Sweden. The company wasfounded in 1966 and is today one of Sweden's largest producers of drinking water. Sydvatten conducts operations on the same terms as all Swedish municipalities and is therefore subject to both the Municipal Act and the Act on Public Water Services, which means that the company does not distribute profits to its owners and operates to the interest of common public welfare. Sydvatten has a total of 109 employees.

The use of proceeds under the framework is for sustainable water management, climate adaptation and renewable energy.

Typical, but not all projects are construction and renovation of freshwater mains and reservoirs, investment in UV facilities for treatment of drinking water, research and development projects to improve the sustainability properties of water management, rehabilitation of quick filters, rebuilding of pump stations, and construction of solar energy parks. Sydvatten's expectation is that the majority of the proceeds will be for sustainable water management and climate adaptation with projects often fulfilling both water management and adaptation goals at the same time. Renewable energy projects are expected to get of the order of 10% of the proceeds initially. Approximately 60% of the proceeds under the framework will be for new financing. Sydvatten will not finance nuclear or fossil fuel projects through green finance instruments.



We rate the framework CICERO Medium Green and give it a governance score of Excellent.

Strengths

The renewable energy category of the framework (solar and wind parks) is clearly beneficial in mitigating climate change, and climate adaptation measures have the potential to reduce impacts and risks from climate change to critical infrastructure. The construction and renovation of drinking water infrastructure has lower immediate and direct climate impacts. However, Sydvatten is, despite many challenges, a sector pioneer when it comes to decarbonizing its value chain where many of its climate impacts are, such as embodied emissions in construction. Thus, the governance structure of Sydvatten seeking to minimise greenhouse gas emissions from subcontractors covering e.g., construction of pumping stations and reservoirs as well as fossil fuelled transportation is counted as one of the strengths of the framework.



Pitfalls

While Sydvatten has as an ambition to become climate neutral in all three scopes by 2030, climate neutrality will, according to Sydvatten, most likely include the use of emission offsets. Sydvatten is in the process of evaluating how this best can be done. We consider this a potential pitfall as historically several offset schemes have proven to be of low and risk dominated quality. Sydvatten informs us that one example of offsets that will be considered is the restoration of wetlands.



Contents

°C

	Executive Summary	1			
	Executive Summary Strengths	1			
	Pitfalls	2			
1	Sydvatten's environmental management and green finance framework	4			
	Company description				
	Governance assessment	4			
	Sector risk exposure	5			
	Environmental strategies and policies	5			
	Green finance framework	7			
2	Assessment of Sydvatten's green finance framework	9			
	Shading of eligible projects under Sydvatten's green finance framework	9			
	More on supply of drinking water in Sweden	11			
3	Terms and methodology	12			
	'Shades of Green' methodology	12			
Арре	endix 1: Referenced Documents List	14			
Арре	Appendix 2: About CICERO Shades of Green				

1 Sydvatten's environmental management and green finance framework

Company description

Sydvatten AB (Sydvatten) is a municipally owned company producing drinking water for 1 million inhabitants, companies and public organisations in 17 municipalities in the region of Skåne in southern Sweden. The company was founded in 1966 and is today one of Sweden's largest producers of drinking water. Sydvatten owns and operates the Bolmen water tunnel, the two high-quality waterworks Ringsjöverket and Vombverket, and the main pipeline system for the distribution of drinking water. Sydvatten conducts operations on the same terms as all Swedish municipalities and is therefore subject to both the Municipal Act and the Act on Public Water Services, which means that the company does not distribute profits to its owners and operates to the interest of common public welfare. Sydvatten has a total of 109 employees.

Sydvatten has taken the initiative to create a research company, Sweden Water Research, in order to meet future water demands. Sweden Water Research combines expertise from the R&D departments from Sydvatten and the two regional water distributors NSVA and VA SYD and, among many other things, ensures the prospect of sustainable and emission-free drinking water production.

In the next 10 years, Sydvatten plans to make major investments. The goal is to secure a redundant and safe drinking water supply in the area of operation for a long time to come. The current focus is on developing the two existing waterworks and the water supply to them. Investigations are ongoing into future drinking water production, as it may be necessary to carry out a major expansion of Sydvatten's production capacity in order to match the development of society and to increase safety from several a spects.

Governance assessment

Sydvatten has set clear goals to reduce its climate footprint and achieve climate neutrality in all three scopes by 2030. This will most likely require use of emission compensation, and it is currently unclear how this will be done, although restoration of wetlands is likely one compensation scheme that will be utilised. Sydvatten also plans to produce its own renewable electricity through solar power covering 30% of the electricity needs.

Sydvatten has, for the fourth year in a row, reported on its climate impact across the whole value chain and its efforts in reducing the impact in the Climate Statement. The reporting follows the GHG Protocol and includes scope 3 emissions from its supply chain but is conditioned on data availability. Sydvatten does not follow the TCFD recommendations on climate scenario analysis in its climate risk reporting but says that they carry out climate risk analysis at many levels according to the type of project. They have a research department with 5-6 people involved in the analysis of climate risks related to e.g., increased brownification and higher temperature of the water.

The selection process of green projects as described in the framework is good. However, the sustainable water management category is broad and hence difficult to assess from a climate impact perspective. Life cycle greenhouse gas emissions are taken into consideration, according to Sydvatten.

Sydvatten states that they may choose to report the impact and allocation of green finance instruments other than bonds (such as green loans) directly, and non-publicly, to the lenders or counterparts as banks can have different requirements on reporting compared to what is outlined for green bonds in the framework.



For green bond reporting an independent external party, appointed by Sydvatten, will on an annual basis provide a review of the allocation and impact report. The external review will be publicly available on Sydvatten's website.



The overall assessment of Sydvatten's governance structure and processes gives it a rating of **Excellent.**

Sector risk exposure

Physical climate risks. Increased frequency of both extreme precipitation and more frequent downpours and drought periods may affect the quality and amount of raw water. Ecological changes in the surrounding area of the raw water sources due to an increased competition between different land and water use interests may also impact the quality of the raw water.

Transition risks. Due to the profound changes needed to limit global warming to 1.5-2°C, transition risk affects all sectors. Sydvatten is exposed to transition risks from stricter energy efficiency requirements or local rules imposing the use of fossil free construction machinery. Embodied emissions in construction materials may also be more strictly regulated in the future.

Environmental risks. Securing safe and reliable drinking water usually requires management of land that is beneficial to biodiversity and nature conservation. Biodiversity impacts and disturbances from construction and operation of new treatment infrastructure can be a concern.

Environmental strategies and policies

Sydvatten has as a goal to have resource, water and energy efficient processes and activities. The progress will be tracked by monitoring of the following key performance indicators: Own production of renewable electricity (kWh and percentage of total electricity consumption); follow-up steps that come from the energy mapping; electricity use in production and distribution per cubic meter of water produced (kWh/m³); water consumption at Ringsjöverket, Mossen and Vombverket; follow-up steps that come from the chemical control programs¹; qualitative description of leaks; qualitative description of energy efficiency improvement across the entire drinking water network; and proportion of recycled residual products. Sydvatten reports greenhouse gas emissions according to the GHG Protocol.

In 2022, Sydvatten's use of energy per cubic meter drinking water was 0.365 kWh/m³. This compares favourably with the EU Taxonomy's technical screening criteria for climate change mitigation criterium for sustainable investments of 0.5 kWh/m³. Sydvatten only buys renewable electricity, a combination of solar, wind and hydropower. Sydvatten will build its own solar park, corresponding to around 30% of the total energy needs. The park is planned to be ready in 2024.

Sydvatten has set clear goals to reduce its climate footprint and achieve climate neutrality over all three scopes by 2030. Key performance indicators in this regard are: Climate footprint per cubic meter of water sold ($kgCO_2e/m^3$); share of air travel out of the total air and train travel; and proportion of started climate-neutral contracts. Regarding the last issue, the target is to secure at least one climate-neutral construction contract before 2025.

¹ Sydvatten states that these programs aim to register and risk assess chemicals used and develop plans for how to phase out some of them according to current regulations.



Climate neutrality will, according to Sydvatten, most likely include the use of emission offsets. Sydvatten is in the process of evaluating how this best can be done.

During 2021, Sydvatten took steps to calculate and measure the emissions associated with contracted work. Sydvatten is a sector pioneer here and the challenges are many. Sydvatten has already had climate as part of the decision-making basis in one large contract and thus have had the opportunity to avoid carbon dioxide emissions in the order of millions of tons. During 2022, they also initiated work on opportunities for climate compensation in the form of wetland restoration².

The calculations of CO_2 emissions from contracting work have been done according to the methodology within LFM30 – Local Roadmap Malmö³. The results show that the choice of material is the most dominant source of CO_2 emissions in pipeline projects and that it is possible to make large savings with conscious choices. After material selection, it is the choice of fuel for transport and excavation work that gives the greatest effect on greenhouse gas emissions.

According to estimates from Sydvatten, the total climate footprint in 2022(2021) represented 5,016 tCO₂e (5,804 tCO₂e), corresponding to $0.065 \text{ kgCO}_{2e}/\text{m}^3 (0.074 \text{ kgCO}_{2e}/\text{m}^3)$ distributed water. Of this, the overwhelmingly majority was scope 3 emissions associated with the production of chemicals used by Sydvatten (88%). Only 7% was scope 2 emissions related to use of electricity, with the rest mostly related to transport of goods and waste. The footprint in 2022 was 14% lower than in 2021, largely due reduced emissions from production and transport of chemicals. Further details on emissions sources and levels can be found in Sydvatten's comprehensive climate report.

As part of the work towards climate neutrality, Sydvatten is looking for contexts where so-called residual products can be put to good use. Thus, Sydvatten has lime products that can be reused and replace other conventionally produced lime products when liming arable land and wetlands. More than half of the waterworks sludge is used as process stabilization in biogas plants.

Sydvatten works actively, partly through its research department and in collaboration with other research institutes, with risk analyses and continuity plans in several areas related to physical climate risks following from increased precipitation and higher temperatures, e.g., microbiological barrier analyses, including QMRA (quantitative microbiological risk analysis) linked to drinking water and food safety, risk analyses within maintenance and investment projects to identify and manage process risks, and continuity plans.

Sydvatten is also heavily engaged, together with the relevant municipalities, in the active management of protected areas surrounding the raw water sources. This includes support of research and knowledge exchange, both nationally as well as internationally.

² Aquatic environments can function as greenhouse gas (GHG) sources and sinks based on their environmental state and management. Land use, surrounding vegetation, pollution, human activities, hydrologic regime, and climate can influence the emissions profile of freshwater peatlands, marshes, swamps, lakes, streams, rivers, and tidal wetlands. While restoration of wetlands and floodplains are effective measures, stronger priority should be given to protecting existing natural wetlands and floodplains. From: https://siwi.org/wp-content/uploads/2022/10/the-essential-drop-to-reach-net-zero chapter-5 draftpdf.pdf ³ An initiative in which building operators work together towards a climate -neutral building and construction sector, set goals and develop methods and tools to get there. See https://lfm30.se (in Swedish).



Green finance framework

Based on this review, this framework is found to be aligned with the 2021 versions of Green Bond Principles⁴ and the 2023 version of the Green Loan Principles⁵. For details on the issuer's framework, please refer to the green finance framework dated March 2023.

Use of proceeds

For a description of the framework's use of proceeds criteria, and an assessment of the categories' environmental impacts and risks, please refer to section 2.

Selection

Sydvatten has designed and implemented a process to ensure that only projects and assets a ligned with the criteria set out in the green finance framework and table 1 below will be selected as eligible projects and assets for its green financing. Sydvatten's Green Finance Committee, a committee of Sydvatten's management team including the CSO, CTO and CFO, will oversee the process. The process of including projects and assets into the portfolio of eligible green projects follows the steps below:

- 1. Sydvatten's finance unit and communication and sustainability unit evaluates eligibility of proposals according to the eligibility criteria specified in the framework and removes assets and projects that do not meet the criteria.
- 2. Sydvatten's finance unit presents the potential green assets and projects to the Green Finance Committee, which verifies eligibility and give final approval. The CSO, who has many years' experience working with water management and climate change issues, holds veto power.
- 3. Eligible projects and assets are booked into the Green Financing Register.

Sweden has extensive national regulations when it comes to stakeholder engagement in projects. All of Sydvatten's projects are in Sweden so screening for controversial projects is part of the investment decision making process of Sydvatten. Sydvatten further states that they even go beyond what is required by regulation.

If, for any reason, a financed eligible project or asset ceases to meet the eligibility criteria, it will be removed from the pool of projects financed with proceeds from green finance instruments issued by Sydvatten.

Management of proceeds

Sydvatten will establish a Green Finance Register for green finance instruments issued by Sydvatten for the purpose of monitoring the eligible projects and assets and the allocation of net proceeds from green finance instruments to eligible projects and assets. Furthermore, the purpose of the Green Financing Register is to ensure that an amount equal to the Green Financing net proceeds only supports the financing or refinancing of green assets and expenditures. Sydvatten will over the duration of the outstanding green finance instruments build up and maintain an aggregate amount of projects and assets in the green finance register that is at least equal to the aggregate net proceeds of all outstanding green finance instruments. There may be periods when the total outstanding net proceeds of green finance instruments exceed the value of eligible projects and assets in the green finance register. Any such portion will be held in accordance with Sydvatten's normal liquidity management policy (liquidity at a bank account). The Green Finance Register will form the basis for impact reporting.

For the avoidance of doubt, Sydvatten ensures that eligible projects and assets will not be double counted as green eligible projects when financed by several green finance instruments at the same time.

⁴ The Green Bond Principles are published by the International Capital Markets Association ("ICMA").

⁵ The Green Loan Principles are published by the Loan Market Association ("LMA"), Asia Pacific Loan Market Association ("APLMA") and the Loan Syndications and Trading Association ("LSTA") respectively.

Reporting

To enable investors, lenders, and other stakeholders to follow the development of the projects and assets funded by green financing, an annual investor report will be made available on Sydvatten's website ("Green Finance Report"). The Green Finance Committee will be responsible for the reporting. All projects financed will be listed. The reporting will be on portfolio basis but information about specific projects may be outlined. Reporting may not be linked to individual bonds.

The first report will be made available for investors approximately 12 months after the issuance of Sydvatten' in a ugural bond transaction under the framework. The Green Finance Report will include an allocation report and an impact report. The Green Finance Report will be published a nnually as long as there are green financing outstanding. However, in case Sydvatten has green financing outstanding in a form of bank loans, Sydvatten may report necessary annual details related to such bank loans directly to its lenders, as may be described in respective loan documentation.

The allocation report will, to the extent feasible, include the following components:

- Total amount of green financing outstanding
- Share of proceeds used for financing and re-financing as well as share of proceeds used for eligible categories
- Share of unallocated proceeds (if any)
- Types of temporary unallocated funds placements (if any)
- Examples and case studies of the relevant eligible green projects and assets

The impact report will include the environmental impact of the green eligible projects and assets financed under the framework. The impact report may, to some extent, be aggregated due to large number of eligible green assets and depending on data availability, calculations will be made on a best effort basis. The impact report will be based on the below listed metrics, and the reporting will always include descriptions of methodologies used:

- Sustainable water management: Water provided to municipalities (m³); net average energy consumption in production and distribution (kWh/m³); length of distribution network (km); production capacity (m³/s); number of inhabitants in municipalities (1000'); annual GHG emissions from operations (CO₂e)⁶; examples and project description of investments made.
- Climate change adaptation: Examples and project description of investments made; expected impact from the specific investments and projects made.
- Renewable energy: Annual renewable energy generation (MWh); annual GHG emissions avoided (CO₂e).

In reporting on avoided GHG emissions, Sydvatten will use the same grid factor as used when reporting emissions.

An independent external party, appointed by Sydvatten, will on an annual basis provide a review of the allocation and impact report. The external review will be publicly available on Sydvatten's website.

⁶ All three scopes are covered. Scope 3 covers emissions from production of process chemicals, transport of process chemicals, transport of residual products, own car in service, business trips, external supplier, management of residual products, external, and purchased IT equipment.

2 Assessment of Sydvatten's green finance framework

The eligible projects under Sydvatten's green finance framework are shaded based on their environmental impacts and risks, based on the "Shades of Green" methodology.

Shading of eligible projects under Sydvatten's green finance framework

- The Sydvatten green finance framework is a pplicable for, but not limited to, issuance of debt instruments such as green bonds, green hybrid bonds, green commercial papers, green loans and other types of debt instruments where an amount equal to the net proceeds will be applied to finance or re-finance, in part or in full, new and/or existing, expenditures and assets with clear environmental benefits, in accordance with the eligibility criteria described in table below. Sydvatten's expectation is that the majority of the proceeds will be for sustainable water management and climate adaptation with projects often fulfilling both water management and adaptation goals at the same time. Renewable energy projects are expected to receive of the order of 10% of the proceeds initially. Approximately 60% of the proceeds will be for new financing according to Sydvatten.
- Financing and refinancing of capital expenditures (with no specific age restriction) and operational expenditures (with up to three-year lookback period before the issuance of any green financing), such as research and development costs, can qualify.
- Sydvatten will not finance nuclear or fossil fuel projects through green finance instruments.

Category	Eligible project types	Green Shading and considerations
Sustainable water managemen	Investments, projects and R&D to promote sustainable and reliable access to drinking water. This includes: It Construction, extension, upgrade and operation of water collection, treatment and supply facilities with a net average energy consumption for abstraction and treatment equals to or lower than 0.36 kWh/m ³ to secure the future need for sustainable drinking water. Examples of projects: • Construction of freshwater mains	 ✓ Access to clean and safe drinking water is important and expected to become more challenging under climate change.

- Construction of reservoirs
- Investment in UV facilities for treatment of drinking water
- Rehabilitation of quick filters .
- Renovation of freshwater pipes

✓ The eligibility criterion is considerably stricter that the criterion in the EU Taxonomy (0.5 kWh/m^3) for this activity.

Climate Investments to make water-related infrastructure more resilient to change impacts of climate change and information support systems. adaptation

Dark Green

✓ Climate change a daptation is extremely important for necessary infrastructure with very long lifetimes such as drinking water facilities.

Examples of projects:

Research and development projects to improve the • sustainability properties of water management.

energy

°C

°C

Renewable Investments to secure Sydvatten's access to clean energy. This includes investments in renewable energy such as solar energy technologies (Photovoltaic (PV) systems, concentrated solar power

(CSP) and solar thermal facilities) and wind power technologies.

Examples include:

• Construction of solar energy parks at Vombverket and Ringsjöverket.

Dark Green

- ✓ Renewable energy is key to the green transition to a low carbon energy future.
- ✓ Screening of controversial projects is part of the investment decision of Sydvatten. As all projects are in Sweden, Sydvatten follows the extensive national regulations. According to the issuer, this means that there will not be any controversial projects included in the green bond pool.

Table 1. Eligible project categories



More on supply of drinking water in Sweden

In Sweden, each person uses an average of 140 litres of drinking water per day, while the corresponding consumption in Denmark and several other European countries is around 100 litres per person per day. In Sweden, water consumption could be reduced significantly, without giving up comfort, through new habits and behaviour.



3 Terms and methodology

This note provides CICERO Shades of Green's second opinion of the client's framework dated March 2023. This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Shades of Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

'Shades of Green' methodology

CICERO Shades of Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris a greement. The shades are intended to communicate the following:

	Shading	Examples
°C	Dark Green is allocated to projects and solutions that correspond to the long- term vision of a low-carbon and climate resilient future.	-Ò́,- Solar power plants
°C	Medium Green is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	Energy efficient buildings
°C	Light Green is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	For Hybrid road vehicles

The "Shades of Green" methodology considers the strengths, weaknesses and pitfalls of the project categories and their criteria. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised, including potential macro-level impacts of investment projects.

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. CICERO Shades of Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green finance framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



Assessment of alignment with Green Bond Principles

CICERO Shades of Green assesses alignment with the International Capital Markets' Association's (ICMA) Green Bond Principles. We review whether the framework is in line with the four core components of the GBP (use of proceeds, selection, management of proceeds and reporting). We assess whether project categories have clear environmental benefits with defined eligibility criteria. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed. The selection process is a key governance factor to consider in CICERO Shads of Green's assessment. CICERO Shades of Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Shades of Green places on the selection process. CICERO Shades of Green assesses whether net proceeds or an equivalent amount are tracked by the issuer in an appropriate manner and provides transparency on the intended types of temporary placement for unallocated proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. °C

Appendix 1: Referenced Documents List

Document Number	DocumentName	Description
1	230131 Sydvatten Green Finance Framework	Sydvatten's Green finance framework dated March 2023
2	Sydvatten_strategiskplan_2018_	Strategic Plan 2018-2022
3	Hallbarhets-och-arsredovisning-2021	Sustainability and annual report 2021. See: https://sydvatten.se/app/uploads/2022/04/Hallbar hets-och-arsredovisning-2021.pdf for Swedish version
4	Klimatbokslut-2021	Climate report 2021
5	Klimatbokslut-2022	Climate report 2022
6	Verksprocesser_eng_LU_web_nov-2021	Description of Sydvatten in English



Appendix 2: About CICERO Shades of Green

CICERO Shades of Green, now a part of S&P Global, provides independent, research-based second party opinions (SPOs) of green financing frameworks as well as climate risk and impact reporting reviews of companies. At the heart of all our SPOs is the multi-award-winning Shades of Green methodology, which assigns shadings to investments and activities to reflect the extent to which they contribute to the transition to a low carbon and climate resilient future.

CICERO Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Shades of Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Shades of Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

