



Second-Party Opinion

Hanwha Energy USA Green Financing Framework

Evaluation Summary

Sustainalytics is of the opinion that the Hanwha Energy USA Green Financing Framework is credible, impactful and aligns with the four core components of the Green Bond Principles 2021. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds – Renewable Energy, Energy Storage System and Grids, and Green Hydrogen – are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that investments in the eligible categories are expected to support the clean energy transition in the US and advance the UN Sustainable Development Goals, specifically SDGs 7 and 9.



PROJECT EVALUATION / SELECTION Hanwha Energy USA’s Investment Committee will be responsible for reviewing and selecting eligible projects. Hanwha Group’s Global Investment Committee will give final approval for eligible assets under the Framework’s eligibility criteria. Hanwha Energy USA has environmental and social risk management processes in place, which are applicable to all allocation decisions made under the Framework. Sustainalytics considers these risk management systems to be adequate and the project selection process to be in line with market practice.



MANAGEMENT OF PROCEEDS Hanwha Energy USA’s Business Planning and Strategy Team will be responsible for managing proceeds from instruments issued under the Framework. The allocation of proceeds will be monitored and tracked using a dedicated ledger. Hanwha Energy USA intends to fully allocate bond proceeds within two years from issuance. Pending allocation, unallocated proceeds will be held in cash or market securities according to Hanwha Energy USA’s investment guidelines. This is in line with market practice.



REPORTING Hanwha Energy USA intends to report on the allocation of proceeds annually until full allocation in its dedicated green bond report, which will be available on the Company’s website. Allocation reporting will include the amount of allocated and unallocated proceeds and selected examples of projects financed, including project location and the amount allocated, where feasible. In addition, Hanwha Energy USA commits to disclose data on impact indicators. Sustainalytics views Hanwha Energy USA’s allocation and impact reporting as aligned with market practice.

Evaluation Date	May 31, 2022
Issuer Location	Irvine, USA

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Introduction

Hanwha Energy USA Holdings Corporation (“Hanwha Energy USA” or the “Company”) is a solar project development company affiliated with the Hanwha Group, which is a South Korea-based conglomerate operating in the chemical, aerospace, mechatronics, solar energy and finance sectors. Hanwha Energy USA was established in 2013 and is headquartered in Irvine, USA.

Hanwha Energy USA has developed the Hanwha Energy USA Green Financing Framework (the “Framework”) under which it intends to issue green bonds and use the proceeds to finance and refinance, in whole or in part, existing and future projects aimed at supporting the clean energy transition in the US and advancing Hanwha Energy USA’s sustainability strategy. The Framework defines eligibility criteria in three areas:

1. Renewable Energy
2. Energy Storage System and Grids
3. Green Hydrogen

A list of eligible projects and projected allocations for the 2022 green bond issuance is provided in Appendix 1.

Hanwha Energy USA engaged Sustainalytics to review the Hanwha Energy USA Green Financing Framework, dated May 2022, and provide a Second-Party Opinion on the Framework’s environmental credentials and its alignment with the Green Bond Principles 2021 (GBP).¹ The Framework has been published in a separate document.² The Framework updates and replaces Hanwha Energy USA’s 2019 Green Bond Framework, for which Sustainalytics provided a second-party opinion in July 2019.³

Scope of work and limitations of Sustainalytics’ Second-Party Opinion

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent⁴ opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework’s alignment with the Green Bond Principles 2021, as administered by ICMA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer’s sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.11, which is informed by market practice and Sustainalytics’ expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of Hanwha Energy USA’s management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. Hanwha Energy USA representatives have confirmed (1) they understand it is the sole responsibility of Hanwha Energy USA to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics’ opinion of the Framework and should be read in conjunction with that Framework.

¹ The Green Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>.

² The Hanwha Energy USA Green Financing Framework is available on Hanwha Energy USA’s website at: <https://174powerglobal.com/company/#green-bond>.

³ Sustainalytics’ 2019 Second-Party Opinion is available at: <https://www.sustainalytics.com/corporate-solutions/sustainable-finance-and-lending/published-projects/project/hanwha-energy-usa/hanwha-energy-usa-green-bond-second-party-opinion/hanwha-green-bond-framework-second-party-opinion-pdf>

⁴ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics’ hallmarks is integrity, another is transparency.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Hanwha Energy USA.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner. Upon twenty-four (24) months following the evaluation date set stated herein, Hanwha Energy USA is encouraged to update the Framework, if necessary, and seek an update to the Second-Party Opinion to ensure ongoing alignment of the Framework with market standards and expectations.

In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realised allocation of the bond proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Hanwha Energy USA has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Hanwha Energy USA Green Financing Framework

Sustainalytics is of the opinion that the Hanwha Energy USA Green Financing Framework is credible and impactful, and aligns to the four core components of the GBP. Sustainalytics highlights the following elements of Hanwha Energy USA's Green Financing Framework:

- Use of Proceeds:
 - The eligible categories -- Renewable Energy, Energy Storage System and Grids and Green Hydrogen -- are aligned with those recognized by the GBP.
 - Hanwha Energy USA has established a three-year look-back period for refinancing activities, which Sustainalytics considers to be in line with market practice.
 - The Framework allows for the financing of R&D expenditures. Sustainalytics notes that R&D investments may lead to environmental benefits but, in general, do not provide certainty on the specific impacts achieved. Hanwha Energy USA has confirmed that R&D expenditures will be limited to less than 10% of the total use of proceeds under the Framework. Therefore, Sustainalytics considers this to be aligned with market practice.
 - Hanwha Energy USA may finance operating expenses such as labour costs. However, the Company has confirmed to Sustainalytics that it will not finance general corporate expenses and that financing will be limited to expenditures directly linked to eligible assets. Sustainalytics views this commitment to be in line with market practice.
 - Under the Renewable Energy category, Hanwha Energy USA may finance or refinance the development, construction, installation, operation, procurement and maintenance of solar energy production units. This is in line with market practice.
 - Under the Energy Storage System and Grids category, Hanwha Energy USA may finance R&D, construction, manufacturing, installation, operation, maintenance and augmentation of battery storage systems and related facilities. The Company may also finance the installation and operation of utility-scale batteries.⁵ Sustainalytics considers these investments to be in line with market practice.
 - Under the Green Hydrogen category, the Company may finance projects that will facilitate the development of hydrogen-powered mobility solutions. This may include: i) hydrogen production

⁵ Utility-scale batteries are stationary batteries that can be connected to transmission and distribution networks or power-generation assets. International Renewable Energy Agency, "Utility-scale Batteries", at: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Sep/IRENA_Utility-scale-batteries_2019.pdf

- through water electrolysis powered by renewables, and ii) the manufacturing, operation, maintenance and R&D of hydrogen charging systems. Sustainalytics considers these investments to be in line with market practice.
- The Framework provides exclusionary criteria prohibiting the financing of projects, assets, expenditures and investments related to fossil fuel and nuclear energy. Sustainalytics positively views the exclusionary criteria as strengthening the Framework.
 - **Project Evaluation and Selection:**
 - Hanwha Energy USA's Investment Committee will be responsible for reviewing and selecting eligible projects. The Committee consists of various representatives from the Company's development, engineering, operating and management, legal, and project financing teams. The Investment Committee will review the eligible projects through a three-step approval process, which includes: i) the Pre-Deal Request Committee evaluates the economic feasibility and environmental impacts of projects; ii) the Deal Review Committee reviews and approves the main contracts; and iii) the Hanwha Group's Global Investment Committee conducts final reviews and approvals. After this final approval, the Company's Business Planning and Strategy team will regularly coordinate with the development team to monitor and ensure that project developments align with the Framework.
 - Hanwha Energy USA is committed to implementing environmental and social (E&S) risk assessment programmes in the early stages of development for every project to manage and mitigate the associated E&S risks with eligible projects. In addition, the Company also has internal processes in place for addressing health and safety risks, as well as negative E&S impacts associated with eligible projects. Sustainalytics considers these E&S risk management systems to be adequate and aligned with market expectation. For additional detail, see Section 2.
 - Based on the clear delegation of responsibility and presence of risk management systems, Sustainalytics considers this process to be in line with market practice.
 - **Management of Proceeds:**
 - Hanwha Energy USA's Business Planning and Strategy team will be responsible for the management of proceeds under the Framework. The Company will monitor and track the allocation of proceeds using a dedicated ledger which will include transaction details including: i) green bond details, including pricing date, maturity date, the principal amount of proceeds, coupon and ISIN; ii) the eligible green projects list, including the project category, project description, Company's ownership percentage, total project cost, the amount allocated and settled currency; and iii) amount of unallocated proceeds.
 - Hanwha Energy USA intends to fully allocate bond proceeds within two years from issuance. Pending full allocation, unallocated proceeds may be held in short-term liquid money instruments, such as cash and market securities as per the Company's investment guidelines. If an eligible project ceases to meet the eligibility criteria outlined in the Framework, the Investment Committee will replace such project with other projects that meet the Framework's eligibility criteria.
 - Based on the use of a formal ledger and the disclosure of temporary use of proceeds, Sustainalytics consider this process to be in line with market practice.
 - **Reporting:**
 - Hanwha Energy USA commits to publish an allocation report and an impact report as part of its separate green bond report, which will be available on the corporate website on an annual basis until full allocation. The allocation report will include allocated amounts and selected examples of projects financed. In addition, a description of the eligible green projects, including project location and amount unallocated, will be included in the report.
 - Regarding the impact report, Hanwha Energy USA will disclose data on impact indicators as well as calculation methodologies and key assumptions. Impact indicators will include installed capacity of renewable energy (in MW) and annual CO₂ emissions reduced or avoided (in tonnes). For the full list of impact metrics, please refer to Appendix 1: Green Bond / Green Bond Programme - External Review Form.
 - Based on the commitment to both impact and allocation reporting, Sustainalytics considers this process to be in line with market practice.

Alignment with Green Bond Principles 2021

Sustainalytics has determined that the Hanwha Energy USA Green Financing Framework aligns with the four core components of the GBP. For detailed information, please refer to Appendix 1: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Performance of Hanwha Energy USA

Contribution of Framework to Hanwha Energy USA's sustainability performance

As an affiliate company of the Hanwha Group providing solar photovoltaic systems in the USA, Hanwha Energy USA established commitments to promote affordable and clean energy and integrated sustainability considerations into its business model. As part of its commitment to providing sustainable energy, the Company has developed and sold approximately 1,500 MWDC of solar power projects and 550 MWh of Energy Storage Systems as of May 2022. The total installed capacity of the Company's solar power projects and Energy Storage Systems under development is approximately 5,500 MWDC and 7,800 MWh, respectively. In addition, the Company also aims to focus on project development businesses that supply electricity to communities from solar photovoltaic projects. Along with these projects, the Company also provides an energy storage solution and platform for renewable energy sources that helps in improving energy efficiency and addressing intermittency and curtailment issues associated with renewable energy sources. Moreover, Hanwha Energy USA plays an important role in implementing the Hanwha Group's sustainability strategy and commitment in the United States, including the Group's measures to reduce the Company's energy use and GHG emissions from its operations.⁶

Sustainalytics notes that, despite following some of the Hanwha Group's policies and objectives, Hanwha Energy USA operates independently from its parent company, Hanwha Group, which has primary businesses in the chemical, aerospace, mechatronics, solar energy, and finance sectors. Sustainalytics is of the opinion that the Framework is aligned with the Company's overall sustainability strategy and initiatives and will further the Company's action on its key environmental priorities. However, Sustainalytics also notes that the Company has not established publicly available quantitative, time-bound targets for future green financing and encourages the establishment of such targets through a company-wide sustainability strategy.

Well positioned to address common environmental and social risks associated with the projects

Sustainalytics recognizes that the use of proceeds from the Framework will be directed towards eligible projects that are expected to have positive environmental and social impacts. However, Sustainalytics is aware that such eligible projects could also lead to negative environmental and social outcomes. Some key environmental and social risks possibly associated with the eligible projects could involve land use and biodiversity issues associated with large-scale renewable energy projects, as well as issues involving occupational health and safety, and community relations.

Sustainalytics is of the opinion that Hanwha Energy USA can manage or mitigate potential risks through the implementation of the following:

- Hanwha Energy USA conducts an environmental study at the early stage of every project development, which includes assessing risks to water, wildlife, plants, ecosystems, cultural resources, noise or glare sensitive receptors, and socio-economic risks. The Company also coordinates with federal, state and municipal entities to identify and mitigate potential environmental risks associated with projects. Additionally, Hanwha Energy USA also implements the Hanwha Group's policies related to managing and mitigating potential environmental and social risks, including those related to the environment, workplace safety and health.⁷
- To mitigate health and safety risk, the Company ensures that engineering, procurement and construction contractors have stringent, documented health and safety protocols and strong safety records. In addition, under the Hanwha Group's policy for the environment, health and safety, the Company is required to identify workplace hazards, conduct safety training and establish a management system for preventing workplace incidents.⁸
- To protect the interests of local communities, the Company engages with communities and adjacent landowners to ensure their expectations are incorporated during the project design phase. In addition, the Company has a public involvement programme that includes feedback mechanisms such as public meetings, mailings and websites for communities to raise their project-related concerns.

Based on these policies, standards and assessments, Sustainalytics is of the opinion that Hanwha Energy USA has implemented adequate measures and is well positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

⁶ Hanwha Group, "Our Commitments", at: <https://www.hanwha.com/en/sustainability/our-commitment.html>

⁷ Hanwha Group, "Sustainable operations", at: <https://www.hanwha.com/en/sustainability/sustainable-operations.html>

⁸ Hanwha Energy, "Sustainability", at: <https://hec.hanwha.co.kr/eng/enSustainability.do#s2>

Section 3: Impact of Use of Proceeds

All three use of proceeds categories are aligned with those recognized by the GBP. Sustainalytics has focused on two below where the impact is specifically relevant in the local context.

Importance of increasing renewable energy capacity in the US

According to the Intergovernmental Panel on Climate Change, the transition to clean energy is crucial for mitigating climate change and achieving the Paris Agreement's goals.⁹ The US is the second-largest electricity consumer in the world, accounting for 16.8% of global electricity consumption in 2021.¹⁰ The electricity sector is the second-largest source of GHG emissions in the US, accounting for 25% of total American GHG emissions in 2019.¹¹ With fossil fuels accounting for 60% of the electricity generation in the US in 2020, there is significant potential for improvement in the share of energy generation from renewable sources.¹² The US Energy Information Administration estimates that the share of renewable energy sources in the US electricity generation mix will rise from 21% to 42% by 2050.¹³ Furthermore, renewable energy expansion and improvements in energy efficiency are estimated to have contributed to reducing GHG emissions from electricity generation in the US by 12% in 2019 from 1990 levels.¹⁴ While renewable energy contributed only 20% of total power generation in the US in 2020, about 58% of all new generating capacity added to US grids between 2014 and 2019 was based on renewable energy.^{15,16} To further increase renewable energy capacity, in 2021, the US federal government established targets to achieve 100% carbon-free electricity by 2035 and achieve a net zero economy by no later than 2050.¹⁷ Achieving these goals would therefore require a steep increase in the rate of renewable energy deployment in the country.¹⁸ At the end of 2020, the US had more than 100 GW of solar and 122.5 GW of wind power capacity,^{19,20} but will need to add as much as 70 GW to 100 GW each of solar and wind power every year to decarbonize the power sector between 2035 and 2050.²¹

In this context, Sustainalytics is of the opinion that Hanwha Energy USA's investments in renewable energy under the Framework are expected to support the clean energy transition in the US and have positive environmental impacts.

Importance of expanding the use of resilient energy storage systems in the US

Energy storage systems such as batteries help address inherent intermittency and curtailment issues associated with solar photovoltaic, wind and other alternative electricity generating systems, storing energy when it is available and release it when it is required.²² Furthermore, in addition to integrating intermittent wind and solar production, for example, battery solutions can also be used to make grids more efficient and resilient regardless of the power source.²³ Realizing the potential of energy storage systems, US utility companies plan to install 10,000 MW of new large-scale battery storage capacity in the US between 2021 and 2023, which is

⁹ IPCC, "Global Warming of 1.5°C", at: <https://www.ipcc.ch/sr15/>

¹⁰ International Energy Agency, "IEA Atlas of Energy", at: <http://energyatlas.iea.org/#/tellmap/-1118783123/1>

¹¹ US Environmental Protection Agency, "Sources of Greenhouse Gas Emissions", at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity>

¹² US Energy Information Administration, "Electricity Explained", at: <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

¹³ US Energy Information Administration, "EIA projects renewables share of U.S. electricity generation mix will double by 2050", (2021), at: www.eia.gov/todayinenergy/detail.php?id=46676

¹⁴ US Environmental Protection Agency, "Sources of Greenhouse Gas Emissions", at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity>

¹⁵ US Energy Information Administration, "Electricity Explained", at: <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

¹⁶ Bolinger, M. (2020), "Utility-Scale Wind and Solar in the U.S.: Comparative Trends in Deployment, Cost, Performance, Pricing, and Market Value", Lawrence Berkeley National Laboratory, at: https://emp.lbl.gov/sites/default/files/webinars/bolinger_webinar_december_8_2020_16x9.pdf

¹⁷ The White House, "FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies", at: <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>

¹⁸ Deloitte, "Renewable transition", at: <https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/us-renewable-energy-transition.html>

¹⁹ Solar Energy Industries Association, "Solar industry research data", at: <https://www.seia.org/solar-industry-research-data>

²⁰ US Department of Energy, "U.S. installed and potential wind power capacity and generation", at: <https://windexchange.energy.gov/maps-data/321>

²¹ Deloitte, "Renewable transition", at: <https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/us-renewable-energy-transition.html>

²² Kalyani, N. et al. (2021), "Energy materials: Applications and propelling opportunities", ScienceDirect, at:

<https://www.sciencedirect.com/topics/engineering/renewable-energy-storage#:~:text=Renewable%20energy%20storage%20batteries%20applied,to%20the%20grid%20when%20needed.>

²³ Deloitte, "Challenges and opportunities of battery storage", at: <https://www2.deloitte.com/nl/nl/pages/energy-resources-industrials/articles/challenges-and-opportunities-of-battery-storage.html>

10 times the 2019 capacity.²⁴ In the US, the installed capacity of large-scale battery storage was 1,650 MW in 2020.²⁵ According to the US EIA, battery storage capacity increased by 35% in 2020, having tripled between 2015 and 2020.²⁶ To further support the adoption of energy storage, in May 2022, the US Department of Energy launched a four-year USD 505 million initiative to lower barriers to grid energy storage and support small-scale, behind-the-meter pilots and large utility-scale demonstrations.²⁷ The initiative also aims to support the federal government's commitment to expand and modernize the American electricity grid to reliably transmit renewable energy and support the country's 2030 emission reduction targets under the country's NDC.^{28,29}

In this context, Sustainalytics is of the opinion that Hanwha Energy USA's investments in energy storage systems under the Framework are expected to contribute to increasing the resilience of the electricity grid and the growth of the renewable energy sector in the US.

Alignment with/contribution to SDGs

The Sustainable Development Goals were adopted in September 2015 by the United Nations General Assembly and form part of an agenda for achieving sustainable development by the year 2030. The bonds issued under the Hanwha Energy USA Green Financing Framework are expected to help advance the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7 Affordable and Clean Energy	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Energy Storage System and Grids	9 Industry, Innovation and Infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
Green Hydrogen	9. Industry, Innovation and Infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

²⁴ US Energy Information Administration, "U.S. large-scale battery storage capacity up 35% in 2020, rapid growth set to continue", at: [https://www.eia.gov/todayinenergy/detail.php?id=49236#:~:text=U.S.%20large%2Dscale%20battery%20storage,rapid%20growth%20set%20to%20continue&text=The%20United%20States%20continued%20a,reach%201%2C650%20megawatts%20\(MW\).](https://www.eia.gov/todayinenergy/detail.php?id=49236#:~:text=U.S.%20large%2Dscale%20battery%20storage,rapid%20growth%20set%20to%20continue&text=The%20United%20States%20continued%20a,reach%201%2C650%20megawatts%20(MW).)

²⁵ Ibid.

²⁶ US Energy Information Administration, "U.S. large-scale battery storage capacity up 35% in 2020, rapid growth set to continue", at: [https://www.eia.gov/todayinenergy/detail.php?id=49236#:~:text=U.S.%20large%2Dscale%20battery%20storage,rapid%20growth%20set%20to%20continue&text=The%20United%20States%20continued%20a,reach%201%2C650%20megawatts%20\(MW\).](https://www.eia.gov/todayinenergy/detail.php?id=49236#:~:text=U.S.%20large%2Dscale%20battery%20storage,rapid%20growth%20set%20to%20continue&text=The%20United%20States%20continued%20a,reach%201%2C650%20megawatts%20(MW).)

²⁷ Utility Dive, "DOE provides \$505M to advance long-duration energy storage fed by renewables", at: <https://www.utilitydive.com/news/doe-provides-505m-to-advance-long-duration-energy-storage-fed-by-renewable/623910/#:~:text=DOE%27s%20new%20Long%20Duration,said%20when%20the%20initiative%20was>

²⁸ Ibid.

²⁹ UNFCCC, "The United States of America Nationally Determined Contribution- Reducing Greenhouse Gases in the United States: A 2030 Emissions Target", at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf>

Conclusion

Hanwha Energy USA has developed the Hanwha Energy USA Green Financing Framework under which it may issue green bonds and use the proceeds to finance projects in the following categories: Renewable Energy, Energy Storage System and Grids, and Green Hydrogen. Sustainalytics considers that the projects funded by the green bond proceeds are expected to support the clean energy transition in the US and advance Hanwha Energy USA's sustainability strategy.

The Hanwha Energy USA Green Financing Framework outlines a process for tracking, allocating and managing proceeds, and makes commitments for the Company to report on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that the Hanwha Energy USA Green Financing Framework is aligned with the overall sustainability strategy of the Company and that the green use of proceeds categories are expected to contribute to the advancement of the UN Sustainable Development Goals 7 and 9. Additionally, Sustainalytics is of the opinion that Hanwha Energy USA has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects.

Based on the above, Sustainalytics is confident that Hanwha Energy USA is well-positioned to issue green bonds and that the Hanwha Energy USA Green Financing Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles 2021.

Appendix

Appendix 1: Green Bond / Green Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Hanwha Energy USA
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable:	Hanwha Energy USA Green Financing Framework
Review provider's name:	Sustainalytics
Completion date of this form:	May 31, 2022
Publication date of review publication:	
Original publication date <i>[please fill this out for updates]</i>:	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW *(if applicable)*

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (*if applicable*):

The eligible categories for the use of proceeds – Renewable Energy, Energy Storage System and Grids, and Green Hydrogen – are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that investments in the eligible categories are expected to support the clean energy transition in the US and advance the UN Sustainable Development Goals, specifically SDGs 7 and 9.

Use of proceeds categories as per GBP:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Renewable energy | <input type="checkbox"/> Energy efficiency |
| <input type="checkbox"/> Pollution prevention and control | <input type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation | <input type="checkbox"/> Clean transportation |
| <input type="checkbox"/> Sustainable water and wastewater management | <input type="checkbox"/> Climate change adaptation |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input type="checkbox"/> Green buildings |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBP | <input checked="" type="checkbox"/> Other (<i>please specify</i>): Energy Storage System and Grids and Green Hydrogen |

If applicable please specify the environmental taxonomy, if other than GBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

Hanwha Energy USA's Investment Committee will be responsible for reviewing and selecting eligible projects. Hanwha Group's Global Investment Committee will give final approval for eligible assets under the Framework's eligibility criteria. Hanwha Energy USA has environmental and social risk management processes in place, which are applicable to all allocation decisions made under the Framework. Sustainalytics considers these risk management systems to be adequate and the project selection process to be in line with market practice.

Evaluation and selection

- | | |
|---|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's environmental sustainability objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
|---|---|

- | | |
|--|---|
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input checked="" type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (<i>please specify</i>): |

Information on Responsibilities and Accountability

- | | |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

Hanwha Energy USA's Business Planning and Strategy Team will be responsible for managing proceeds from instruments issued under the Framework. The allocation of proceeds will be monitored and tracked using a dedicated ledger. Hanwha Energy USA intends to fully allocate bond proceeds within two years from issuance. Pending allocation, unallocated proceeds will be held in cash or market securities according to Hanwha Energy USA's investment guidelines. This is in line with market practice.

Tracking of proceeds:

- | |
|---|
| <input checked="" type="checkbox"/> Green Bond proceeds segregated or tracked by the issuer in an appropriate manner |
| <input checked="" type="checkbox"/> Disclosure of intended types of temporary investment instruments for unallocated proceeds |
| <input type="checkbox"/> Other (<i>please specify</i>): |

Additional disclosure:

- | | |
|---|---|
| <input type="checkbox"/> Allocations to future investments only | <input checked="" type="checkbox"/> Allocations to both existing and future investments |
| <input type="checkbox"/> Allocation to individual disbursements | <input type="checkbox"/> Allocation to a portfolio of disbursements |
| <input checked="" type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other (<i>please specify</i>): |

4. REPORTING

Overall comment on section (*if applicable*):

Hanwha Energy USA intends to report on the allocation of proceeds annually until full allocation in its dedicated green bond report, which will be available on the Company's website. Allocation reporting will include the amount of allocated and unallocated proceeds and selected examples of projects financed, including project location and the amount allocated, where feasible. In addition, Hanwha Energy USA commits

to disclose data on impact indicators. Sustainalytics views Hanwha Energy USA's allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (<i>please specify</i>): |

Information reported:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Allocated amounts | <input type="checkbox"/> Green Bond financed share of total investment |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Frequency:

- | | |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Impact reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (<i>please specify</i>): |

Information reported (expected or ex-post):

- | | |
|---|---|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input type="checkbox"/> Energy Savings |
| <input type="checkbox"/> Decrease in water use | <input checked="" type="checkbox"/> Other ESG indicators (<i>please specify</i>): installed capacity of renewable energy (MW), annual renewable energy production (MWh), renewable energy capacity connected (MW), installed capacity of hydrogen production (tonnes per day) |

Frequency

- | | |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Means of Disclosure

- | | |
|---|--|
| <input type="checkbox"/> Information published in financial report | <input type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents | <input checked="" type="checkbox"/> Other (<i>please specify</i>): green bond report |
| <input type="checkbox"/> Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review): | |

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- | | |
|--|--|
| <input type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Review provider(s):

Date of publication:

ABOUT ROLE(S) OF INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP

- i. Second-Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.
- ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.
- iii. Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. Green Bond Scoring/Rating: An issuer can have its Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

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In case of discrepancies between the English language and translated versions, the English language version shall prevail.

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Sustainalytics, a Morningstar Company, is a leading ESG research, ratings and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For more than 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. Sustainalytics also works with hundreds of companies and their financial intermediaries to help them consider sustainability in policies, practices and capital projects. With 17 offices globally, Sustainalytics has more than 1500 staff members, including more than 500 analysts with varied multidisciplinary expertise across more than 40 industry groups.

For more information, visit www.sustainalytics.com

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