S&P Global
Ratings

Green Evaluation

Hannon Armstrong's Sustainable Yield Bonds 2017-1

Entity:	Hannon Armstrong Sustainable Infrastructure Capital, Inc.
ICB subsectors:	Alternative Energy
Location (HQ):	U.S.
Financing value:	US$163.75 mil.
Amount evaluated:	100%
Evaluation date:	Oct. 19, 2017
Contact:	Obioma Ugboaja +1-212-438-7406 obioma.ugboaja@spglobal.com

Transaction Overview

On Oct. 18, 2017, Hannon Armstrong Sustainable Infrastructure Capital Inc. (HASI) issued US$163.75 million of sustainable yield bonds (HASI SYB 2017-1) due Dec. 20, 2057, to refinance its land leases, which support a portfolio of solar electricity generation projects. The company's portfolio consists of land holdings supporting 57 projects with close to 1,200 megawatts (MW) of capacity. All land holdings are in the U.S.

Green Evaluation Overview

Transparency

- Use of proceeds reporting
- Reporting comprehensiveness

86

Governance

- Management of proceeds
- Impact Assessment Structure

63

Mitigation

Sector	→ Net Benefit Ranking	→ Hierarchy adjustment	
Green Energy	Supplying the grid with low-carbon electricity		**85**

Adaptation

NA

100

E1

E2

E3

E4

0

Overall Score

E1/80

Weighted aggregate of three (Transparency + Governance + Mitigation)

Project Description

Hannon Armstrong will use proceeds of the bond to support its portfolio of land leases exclusively dedicated to various solar projects, including:

- Purchased land that is leased to utility-scale solar project developers under long-term fixed-lease agreements (100%).

The renewable projects are supported by high quality off-takers and consist of purchased power agreements, and a power hedge with a weighted average contract term of 19 years. The company, in accordance with its green bond policy framework, targets energy efficiency, renewable energy, water, and wastewater management projects. All of the projects are located in the U.S. and about 73% of the total asset value is located in California.

Scoring Summary

This transaction received an overall score of E1/80, the highest Green Evaluation score on our scale of E1 (highest) to E4 (lowest). This score is determined by taking a weighted average of factors, including our assessment of the transaction's Transparency (86), Governance (63), and Mitigation scores (85) that we assess as strong, above-average, and excellent, respectively. The excellent Mitigation score reflects the high contribution to systemic decarbonization that the project is expected to achieve.

Rationale

Summary

- The bond proceeds will be used to refinance land leases exclusively dedicated to various renewable solar projects.
- The transaction's positive impact on carbon savings, supporting a portfolio of renewable energy assets, scores favorably within our carbon hierarchy.
- Strong transparency is supported by annual disclosures of environmental impact through a third-party evaluation.
- The company's green bond policy framework, which defines the company's environmental objectives, supports a governance score that we view as above average.

Key Strengths And Weaknesses

Hannon Armstrong owns interest in lease revenues from 57 utility-scale solar projects. 100% of the total asset value reflects utility-scale solar projects that are located across eight states, with about 73% of the total asset value located in California.

We evaluated this transaction as equivalent to a portfolio of green energy projects based on the relative cost and location of the land assets for each type of renewable energy. We believe this approach is representative of the relative allocation of capital spent in support of the solar renewable technology and its related environmental impact. Our view is that land is a necessary component of a solar project and the lease revenue received by Hannon Armstrong is an ongoing operating expense of those renewable assets. We therefore consider the capital used to refinance the land purchases as capital spent on renewable projects. As such, we have evaluated this transaction in the same way we would evaluate other capital invested in a renewable energy project.

The land leases, which support the solar renewable projects, are very supportive of a green environment because the renewable generated electricity decarbonizes the environment by displacing fossil fuel-generated electricity.

Our fair assessment of the net benefit ranking of 42 for the solar investments reflects the regional grid's baseline carbon intensity of California, which is lower than the U.S. average. Of the total amount invested in solar, about 73% was spent in that state. S&P Global Ratings assumes that these renewable solar projects will displace relatively fewer emissions than similar projects in areas with a more carbon intense grid.

Hannon Armstrong has well-defined criteria for selecting its green financing projects. The company seeks to pursue investments that have a positive environmental impact, tied primarily to reducing greenhouse gas emissions and achieving other environmental benefits, such as reducing water consumption.

Our Governance assessment takes into account an inherent weakness: the company's lack of an independent third party to verify that the green bond proceeds are fully dedicated to the land assets.

However, Hannon Armstrong will have a third party analyze and certify the environmental impact of this transaction by determining an independent carbon score. The analysis estimates the metric tons of carbon dioxide saved by measuring the annual hourly megawatt hours avoided by Hannon Armstrong's green energy projects based on location-specific grid emissions. We then determined a carbon score by comparing the carbon dioxide saved to the project's total capital cost. This independent carbon score and the company's commitment to annual reporting promotes accountability, and results in a strong transparency score.

Project level scores

Sector	Technology	Location	Use of Proceeds (US$ Mil.)	Use of Proceeds treatment	Net Benefit Ranking
Green energy	Photovoltaic solar power generation	Arizona	7.7	Actual	49
		California	119.0	Actual	39
		Massachusetts	0.4	Actual	40
		Minnesota	5.3	Actual	49
		Mississippi	2.1	Actual	49
		New York	18.0	Actual	40
		North Carolina	3.0	Actual	49
		Utah	8.3	Actual	67
		Total	**163.8**		

Green Evaluation Process

86	63	85	Weighted aggregate of three (Transparency + Governance + Mitigation)	E1/80
Transparency	Governance	Mitigation		Overall score

Increasing Decarbonization Impact

Technology	Baseline carbon intensity	Net Benefit Ranking	→ Carbon hierarchy adjustment	Environmental Impact Score	Proceeds (US$ Mil.)
	Multiple U.S. states Extremely High ... Low				
Wind power					
Solar power		**42**	**Systemic decarbonization**	**85**	**163.75**
Small hydro					
Large hydro (excluding tropical areas)					
Energy management and control					
Unspecified					
Green transport without fossil fuel combustion			Significant decarbonization in sectors already aligned with a green economy		
Green buildings – new build					
Unspecified					
Energy efficiency (industrial and appliance efficiencies)			Alleviating emissions of existing carbon-intense industries		
Green transport with fossil fuel combustion					
Green buildings refurbishment					
Unspecified					
Nuclear			Decarbonization technologies with significant environmental hazards		
Large hydro in tropical areas					
Unspecified					
Coal to natural gas			Improvement of fossil-fueled activities' environmental efficiency		
Cleaner fuel production					
Cleaner use of coal					
Unspecified					

Technology	Baseline water stress	Net Benefit Ranking	→ Water hierarchy adjustment	Environmental Impact Score	Proceeds (US$ Mil.)
Water					

Scores may vary slightly from the actual due to rounding.

Our Green Evaluation Approach

Weighted aggregate of three:

Transparency + Governance + Mitigation or Adaptation = Green Evaluation

Common approach used amongst second opinion providers

Transparency
- Use of proceeds reporting
- Reporting comprehensiveness

Governance
- Management of proceeds
- Impact Assessment Structure

Unique to S&P Global Ratings

Mitigation
Buildings, industrial efficiencies, energy infrastructure, transport, and water

Net Benefit Ranking
eKPI's: Carbon, Waste, Water Use

Hierarchy Applied

Environmental Impact

Mitigation Score

Adaptation
Resilience capex such as flood defenses, asset protection etc.

Cost Benefit Ranking
Resilience benefit ratio:
Estimate of reduction in damages if event occurs

Resilience Level

Adaptation Score

Final Green Evaluation (E1 - E4 or R1 - R4)

eKPI – Environmental Key Performance Indicator