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August 10, 2018

VIA EDGAR

United States Securities and Exchange Commission
Division of Investment Management
100 F Street, NE
Washington, D.C. 20549
Attn: Ray Bee and Anthony Burak

Re: Horizon Technology Finance Corporation
Registration Statement on Form N-2
File Number: 333-225698

Ladies and Gentlemen:

Horizon Technology Finance Corporation, a Delaware corporation (the "Company"), has today filed with the U.S. Securities and Exchange Commission (the "Commission") pre-effective amendment no. 1 ("Amendment No. 1") to its registration statement on Form N-2 (File No. 333-225698) (the "Registration Statement") and the prospectus contained therein, the "Prospectus"). On behalf of the Company, we hereby respond to the comments raised by the staff (the "Staff") of the Commission in a July 24, 2018 telephone conversation between Ray Bee and Anthony Burak of the Staff and Thomas J. Friedmann and Erin M. Lett of Dechert LLP, outside counsel to the Company, relating to the Registration Statement.

For your convenience, the Staff's comments are included in this letter, and each comment is followed by the applicable response. We will also provide under separate cover courtesy copies of Amendment No. 1, as filed and marked to show changes from the initial filing of the Registration Statement, which includes the necessary conforming changes in response to the Staff's comments.

Capitalized terms used in this letter and not otherwise defined herein shall have the meanings specified in the Registration Statement.

Legal Comments

Cover Page

1. **It appears that the use of leverage is a principal investment strategy of the Company. If true, include a cross reference to the relevant risk factors. Refer to Item 1.1.j of Form N-2.**

Response: The Company has modified its disclosure on the cover page of the Prospectus to note that information regarding the risks associated with the use of leverage is included within the “Risk Factor” section of the Prospectus.

Risk Factors – Risks Related to Our Business and Structure – We borrow money, which magnifies the potential for gain or loss on amounts invested and may increase the risk of investing in us (Page 18)

2. **The Company discloses that the modified asset coverage requirements would be effective with respect to the Company on the day immediately following stockholder approval of a proposal to do so. To the extent that the Company intends to seek such approval, please clarify the Company’s intentions.**

Response: The Company supplementally advises the Staff that it intends to hold a special meeting in the fall of 2018 at which the Company’s stockholders will be asked to approve a proposal to reduce the asset coverage requirements applicable to the Company. The Company has revised its disclosure throughout the Prospectus to reflect this intention and expects to file a proxy with respect to the proposed special meeting presently.

Risk Factors – Risks Related to Our Business and Structure – Our ability to enter into transactions with our affiliates is restricted, which may limit the scope of investments available to us (Page 28)

3. **The Company notes that where co-investment is not permitted, the Advisor’s allocation policy provides for investments to be allocated on a “random or rotational basis” to assure that all clients have fair and equitable access to such investment opportunities over time. Please advise the Staff supplementally when the Advisor’s allocation policy provides for investments to be allocated on a “random” basis and when on a “rotational” basis.**

Response: The Company supplementally advises the Staff that that the Advisor’s allocation policy does not specifically provide when the Company’s investments will be allocated on a “random” basis and when on a “rotational” basis. The Advisor’s fiduciary duties, however, obligate it to treat all of its clients fairly and equitably over time and its allocation policy is consistent with this obligation. The Advisor intends to continue to allocate investments to the Company in a manner consistent with this standard.

Management's Discussion and Analysis of Financial Condition and Results of Operations – Consolidated Results of Operations for the Years Ended December 31, 2017, 2016 and 2015 – Investment Income

4. **The disclosure notes that the decrease in the Company's investment income for the year ended December 31, 2017 as compared to the year ended December 31, 2016 was primarily due to the decrease in average size of the Company's investment portfolio. Include disclosure regarding why the size of the Company's investment portfolio decreased.**

Response: As requested, the Company has added disclosure stating that the Company's average investment portfolio decreased during the year ended December 31, 2017 compared to the year ended December 31, 2016 primarily as a result of prepayments of existing investments which occurred late in the 2016 fiscal year. These prepayments resulted in a lower beginning balance for the 2017 fiscal year, and investment growth did not occur until the last quarter of 2017.

5. **The fourth paragraph under "Investment Income" discusses overall total return of the portfolio in the first sentence. The remainder of the paragraph, however, discusses the calculation of the "yield on dollar-weighted average investments," which is repetitive of the previous paragraph. Please revise to describe the calculation of "overall total return".**

Response: The Company has revised its disclosure to clarify that the indicated paragraph relates to the Company's "overall total yield" rather than "overall total return".

Management's Discussion and Analysis of Financial Condition and Results of Operations – Recent Developments – Horizon Secured Loan Fund I LLC

6. **The disclosure states that the Company will provide capital to HSLF in the form of LLC equity interests. Revise the disclosure to accurately describe who is giving and receiving what.**
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Response: As requested, the Company has revised its disclosure to explain that the Company provides capital to HSLF (in the form of cash or of securities in portfolio companies) in exchange for LLC equity interests in HSLF.

Management's Discussion and Analysis of Financial Condition and Results of Operations – Contractual Obligations (Page 68)

7. This section states, “We regularly monitor our unfunded commitments and anticipated refinancings, maturities and capital raising, to ensure that we have sufficient liquidity to fund such unfunded commitments. As of March 31, 2018, we reasonably believed that our assets would provide adequate financial resources to satisfy all of our unfunded commitments.” Supplementally explain why the Company believes its assets would provide adequate resources to satisfy unfunded commitments.

Response: As of March 31, 2018, the Company had unfunded commitments of \$22.5 million, unrestricted cash of \$16.1 million and \$24.0 million of borrowing capacity available under the Key Facility. Based on the foregoing, the Company respectfully submits that it had adequate financial resources to cover the amount of its then outstanding unfunded commitments as of March 31, 2018.

Management (Page 95)

8. Please ensure that the present occupation of each director for the past five years is disclosed; if a directors is retired, so state.

Response: The Company has revised its disclosure accordingly.

Description of Our Securities (Page 119)

9. The table in this section provides that the “amount authorized” for the “2022 Notes” is 1,495,000. Please explain what is meant by this.

Response: The table discloses the number of notes, liquidation preference \$25.00 per note, outstanding. In Amendment No. 1, the Company has revised the table to disclose the outstanding aggregate principal amount of 2022 Notes.

Accounting Comments

General

10. In the event that the Company's Form 10-Q for the second quarter of 2018 is filed prior to the effective date of the Registration Statement, update the Registration Statement to include financial and operating information for the second quarter of 2018, including the applicable financial statements.

Response: The Company acknowledges the Staff's comment.

Portfolio Companies, Consolidated Schedule of Investments

11. Please consider whether any of the Company's investments are "restricted securities." If any investments are restricted securities, future filings should include the disclosures required by Rule 12-12, footnote 8 of Regulation S-X.

Response: The Company acknowledges the Staff's comment and undertakes to include the disclosures required by footnote 8 to Rule 12-12 of Regulation S-X in the financial statements for any future period in which the Company holds restricted securities.

12. Rule 12-12, footnote 9 of Regulation S-X requires that each investment whose value was determined using significant unobservable inputs include an indication of such. Currently, the Consolidated Schedule of Investments includes two related footnotes. Footnote 5 indicates which companies are public companies and footnote 14 notes that all investments, except those in public companies, are valued using significant unobservable inputs. Consider revising to make this more readily apparent so that readers do not need to "piece together" the two footnotes.

Response: The Company hereby undertakes to revise the footnotes to its Consolidated Schedule of Investments for future periods to have a single footnote indicating whether the fair value of the investment has been determined using significant unobservable inputs.

Notes to Financial Statements – Note 5, Transactions with Affiliated Companies (Page F-26)

13. Note 5 includes a table of transactions with affiliate companies. In the table, the various securities for Decisyon, Inc. have been aggregated on a single line. Revise the table to comply with Rule 12-14, footnote 1(a) of Regulation S-X, which requires that the securities be listed separately.

Response: The Company hereby undertakes to separately list the securities for Decisyon, Inc. in the financial statements for future periods.

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If you have any questions, please feel free to contact the undersigned by telephone at 617.728.7120 (or by email at thomas.friedmann@dechert.com). Thank you for your cooperation and attention to this matter.

Very truly yours,

/s/ Thomas J. Friedmann

Thomas J. Friedmann

cc: Daniel Trolio, Horizon Technology Finance Corporation
John C. Bombara, Horizon Technology Finance Corporation
