

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

SCHEDULE 13D

Under the Securities Exchange Act of 1934 (Amendment No. 6)

NXT ENERGY SOLUTIONS, INC

(Name of Issuer)

Common Shares

(Title of Class of Securities)

62948Q107

(CUSIP Number)

Mr. Michael Mork
132 Mill Street, Suite 204
Healdsburg, CA 95448
Telephone: (707) 431-1057

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

January 11, 2024

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box ☐.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See 240.13d-7(b) for other parties to whom copies are to be sent.

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) MCAPM, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(D) OR 2(E) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION California	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 19086991*
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 19086991*
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 22526321*	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 26.29*	
14	TYPE OF REPORTING PERSON (See Instructions) PN	

*The amounts in columns 8, 10, and 11 above include shares of common stock ("Common Stock") of NXT Energy Solutions, Inc. that will be issued upon conversion of convertible debentures (the "Debentures") recently purchased by MCAPM L.P and Michael Mork. The percentage amount reflected in item 13 is inclusive of the amount of Common Stock that will be received upon full conversion of the Debentures and is based on the outstanding Common Stock after giving effect to the conversion of the full amount of Debentures issued by the Issuer. For further details, please refer to Items 3, 4, 5, 6, and 7 below.

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) Mork Capital Management, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(D) OR 2(E) <div style="text-align: right;">[]</div>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION California	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 19086991*
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 19086991*
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14	TYPE OF REPORTING PERSON (See Instructions) IA	

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1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) Michael Mork									
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input checked="" type="checkbox"/> <input type="checkbox"/> (b) <input type="checkbox"/> <input type="checkbox"/>									
3	SEC USE ONLY									
4	SOURCE OF FUNDS (See Instructions) PF									
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(D) OR 2(E) <div style="text-align: right;"><input type="checkbox"/> <input type="checkbox"/></div>									
6	CITIZENSHIP OR PLACE OF ORGANIZATION California									
	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<table border="1"> <tr> <td>7</td> <td> SOLE VOTING POWER 3439330* </td> </tr> <tr> <td>8</td> <td> SHARED VOTING POWER 19086991* </td> </tr> <tr> <td>9</td> <td> SOLE DISPOSITIVE POWER 3439330* </td> </tr> <tr> <td>10</td> <td> SHARED DISPOSITIVE POWER 19086991* </td> </tr> </table>	7	SOLE VOTING POWER 3439330*	8	SHARED VOTING POWER 19086991*	9	SOLE DISPOSITIVE POWER 3439330*	10	SHARED DISPOSITIVE POWER 19086991*
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14	TYPE OF REPORTING PERSON (See Instructions) IN									

*The amounts in columns 7, 8, 9, 10, and 11 above include shares of common stock ("Common Stock") of NXT Energy Solutions, Inc. that will be issued upon conversion of convertible debentures (the "Debentures") recently purchased by MCAPM L.P and Michael Mork. The percentage amount reflected in item 13 is inclusive of the amount of Common Stock that will be received upon full conversion of the Debentures and is based on the outstanding Common Stock after giving effect to the conversion of the full amount of Debentures issued by the Issuer. For further details, please refer to Items 3, 4, 5, 6, and 7 below.

This Amendment No. 6 amends the Schedule 13D/A filed by the undersigned on November 17, 2023.

Item 2. Identity and Background

Below is information regarding the Reporting Persons:

- (a) This Schedule 13D/A is being filed on behalf of Mork Capital Management, LLC (“Mork Capital”), MCAPM, L.P., and Michael Mork, who are collectively referred to herein as the “Reporting Persons”.
- (b) The address of the principal business office of the Reporting Persons is 132 Mill St., Suite 204, Healdsburg, CA 95448.
- (c) Mork Capital serves as the investment adviser and general partner of MCAPM, L.P. which is a private investment fund engaged in the purchase and sale of securities. Michael Mork is the owner and Managing Member of Mork Capital. The principal occupation of Michael Mork is investment management.
- (d) During the past five years, none of the Reporting Persons have been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the past five years, none of the Reporting Persons have been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and, as a result of such proceeding, was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, Federal or State securities laws or finding any violation with respect to such laws.
- (f) Please refer to row 6 of the respective cover pages.

Item 3. Source and Amount of Funds or Other Considerations

Item 3 is hereby amended to reflect and include the following:

On November 8, 2023 (i) MCAPM, LP entered into a subscription agreement with NXT and received an aggregate principal amount of US \$900,000 of unsecured convertible debentures (the “Debentures”) of NXT, and (ii) Michael Mork entered into a subscription agreement with NXT and received an aggregate principal amount of US \$100,000 of the Debentures.

On January 11, 2024 (i) MCAPM, LP entered into a subscription agreement with NXT and received an additional amount of Debentures with a principal amount of US \$375,000.

These transactions were performed through a non-brokered private placement.

The Debentures bear interest at 10.0% per annum, with the ones obtained on November 8, 2023, becoming due and payable in full on November 8, 2025, and the ones obtained on January 11, 2024 becoming due and payable in full on January 11, 2026. The Debentures are convertible into NXT common shares (the “Common Shares”) at a conversion price of US\$0.1808 (CAD\$0.25) per Common Share, which provides MCAPM, LP and Michael Mork with the right to obtain an additional 7,605,088 Common Shares in aggregate (7,051,991 and 553,097 shares respectively). The Debentures can be converted to Common Shares only upon approval from NXT shareholders.

The cost to purchase the Debentures by MCAPM, LP came from MCAPM, L.P.'s working capital. The cost to purchase the Debentures by Michael Mork came from his personal assets.

Item 4. Purpose of Transaction

The purpose in acquiring the Debentures of the Issuer is to potentially profit from the appreciation in the market price of the shares.

Item 5. Interest in Securities of the Issuer

Item 5 is hereby amended and restated to read as follows:

(A) MCAPM, L.P.

- (a) Aggregate number of shares beneficially owned: 22,526,321
Percentage: 26.29%
- (b)
 - 1. Sole power to vote or to direct vote: 0
 - 2. Shared power to vote or to direct vote: 19,086,991
 - 3. Sole power to dispose or to direct the disposition: 0
 - 4. Shared power to dispose or to direct disposition: 19,086,991
- (c) On November 8, 2023, and January 11, 2024, MCAPM, L.P. entered into subscription agreements with NXT and received an aggregate principal amount of US \$1,200,000 of the Debentures (see Item 3 above) of NXT, which are convertible into a total of 7,051,991 NXT Common Shares.
- (d) Mork Capital Management, LLC serves as the investment adviser and General Partner of MCAPM, L.P. and as such has discretionary authority to vote and dispose of shares of the Issuer's common shares. Also, because Mr. Michael Mork is the owner and Chief Executive Officer of Mork Capital Management, LLC, he has the power to direct the affairs of both Mork Capital Management, LLC and MCAPM, L.P., including the voting and disposition of shares of the Issuer's common shares held in the name of MCAPM, L.P. Therefore, both Mork Capital Management, LLC and Mr. Michael Mork are deemed to share voting and disposition power with MCAPM, L.P. with regard to those shares.

(B) Mork Capital Management, LLC

- (a) Aggregate number of shares beneficially owned: 22,526,321
Percentage: 26.29%
- (b)
 - 1. Sole power to vote or to direct vote: 0
 - 2. Shared power to vote or to direct vote: 19,086,991
 - 3. Sole power to dispose or to direct the disposition: 0
 - 4. Shared power to dispose or to direct disposition: 19,086,991
- (c) Mork Capital Management, LLC has made no purchases of the Issuer's common shares for its own account. As investment adviser, it purchases and sells securities on behalf of its clients.
- (d) Mork Capital Management, LLC serves as the investment adviser and General Partner of

MCAPM, L.P. and as such has discretionary authority to vote and dispose of shares of the Issuer's common shares. Also, because Mr. Michael Mork is the owner and Chief Executive Officer of Mork Capital Management, LLC, he has the power to direct the affairs of both Mork Capital Management, LLC and MCAPM, L.P., including the voting and disposition of shares of the Issuer's common shares held in the name of MCAPM, L.P. Therefore, both Mork Capital Management, LLC and Mr. Michael Mork are deemed to share voting and disposition power with MCAPM, L.P. with regard to those shares.

(C) Michael Mork

- (a) Aggregate number of shares beneficially owned: 22,526,321
Percentage: 26.29%
- (b)
 - 1. Sole power to vote or to direct vote: 3,439,330
 - 2. Shared power to vote or to direct vote: 19,086,991
 - 3. Sole power to dispose or to direct the disposition: 3,439,330
 - 4. Shared power to dispose or to direct disposition: 19,086,991
- (c) On November 8, 2023, Michael Mork entered into a subscription agreement with NXT and received an aggregate principal amount of US \$100,000 of the Debentures (see Item 3 above) of NXT, which are convertible into a total of 553,097 NXT Common Shares.
- (d) Mork Capital Management, LLC serves as the investment adviser and General Partner of MCAPM, L.P. and as such has discretionary authority to vote and dispose of shares of the Issuer's common shares. Also, because Mr. Michael Mork is the owner and Chief Executive Officer of Mork Capital Management, LLC, he has the power to direct the affairs of both Mork Capital Management, LLC and MCAPM, L.P., including the voting and disposition of shares of the Issuer's common shares held in the name of MCAPM, L.P. Therefore, both Mork Capital Management, LLC, and Mr. Michael Mork are deemed to share voting and disposition power with MCAPM, L.P. with regard to those shares.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

The information in Items 3 and 4 is incorporated by reference herein.

Except as described in this filing, no contracts, arrangements, understandings, or relationships (legal or otherwise) exist between any Reporting Person and any person with respect to any securities of the Issuer, including, but not limited to, transfer or voting of any of the securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, divisions of profits or loss, or the giving or withholding of proxies. Except as described above, none of the Reporting Persons is a party to any arrangement whereby securities of the Issuer are pledged or are otherwise subject to a contingency the occurrence of which would give another person voting power or investment power over such securities.

Item 7. Material to Be Filed as Exhibits

<u>Exhibit No.</u>	<u>Description</u>
1	Joint Filing Agreement, dated January 11, 2023
2.	Unsecured Convertible Debenture Agreement between NXT Energy Solutions Inc. and Michael Mork dated November 8, 2023.
3.	Unsecured Convertible Debenture Agreement between NXT Energy Solutions Inc. and MCAPM, L.P. dated November 8, 2023

4. Unsecured Convertible Debenture Agreement between NXT Energy Solutions Inc. and MCAPM, L.P. dated January 11, 2024.

SIGNATURES

After reasonable inquiry and to the best of our knowledge and belief, we certify that the information set forth in this statement is true, complete, and correct.

Date: January 22, 2024

MCAPM, L.P.

/s/ Michael Mork

By: Michael Mork
General Partner

Mork Capital Management, LLC

/s/ Michael Mork

By: Michael Mork
Owner and Chief Executive

Michael Mork

/s/ Michael Mork

Michael Mork, Individual

EXHIBIT 1
JOINT FILING AGREEMENT

This Joint Filing Agreement, dated as of January 11, 2023 is by and among Mork Capital Management, LLC, MCAPM, L.P., and Michael Mork (collectively referred to herein as the "Filing Persons").

As required by Rule 13d-1 and Rule 13d-2 promulgated under the Securities Exchange Act of 1934 (the "1934 Act"), the Filings Persons hereby agree to file jointly a Schedule 13D and any amendments thereto relating to the aggregate ownership by each of the Filing Persons of any voting equity security of a class of NXT Energy Solutions, Inc. stock, and further agree that this Joint Filing Agreement shall be included as an exhibit to such joint filings. Each Filing Person agrees that the information set forth in such Schedule 13D and any amendments thereto with respect to such Filing Person will be true, complete, and correct as of the date of such Schedule 13D or such amendment, to the best of such Filing Person's knowledge and belief, after reasonable inquiry.

The undersigned further agree that each party hereto is responsible for the timely filing of such Schedule 13D and any amendments thereto, and for the completeness and accuracy of the information concerning such party contained therein; provided, however, that each Filing Person makes no representations as to the accuracy or adequacy of the information set forth in the Schedule 13D or any amendments thereto with respect to any other Filing Person. Each Filing Person shall promptly notify all of the other Filing Persons if any of the information set forth in the Schedule 13D or any amendments thereto shall become inaccurate in any material respect or if said person learns of information that would require an amendment to the Schedule 13D.

MCAPM , L.P.

/s/ Michael Mork

By: Michael Mork
General Partner

Mork Capital Management, LLC

/s/ Michael Mork

By: Michael Mork
Owner and Chief Executive

Michael Mork

/s/ Michael Mork

Michael Mork, Individual