Agenda Date: 3/24/21
Agenda Item: 8D

STATE OF NEW JERSEY

Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

CLEAN ENERGY

IN THE MATTER OF THE CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING $500,000 – MERCK SHARP AND DOHME CORPORATION	)))))	ORDER DOCKET NO. QO21020093

Parties of Record:

Christopher J. Broome, PE, CEM, Associate Director of Global Energy, Merck
Stefanie A. Brand, Esq., Director, New Jersey Division of Rate Counsel

BY THE BOARD:[1]

The New Jersey Board of Public Utilities ("Board" or "BPU") through its New Jersey Clean Energy Program ("NJCEP") includes several individual Commercial and Industrial ("C&I") Energy Efficiency ("EE") Programs targeting the commercial and industrial market segments. Eligible applicants may receive rebates for a portion of the cost for installing energy efficient technologies such as lighting, HVAC, and other energy conservation measures. Incentives are also available for projects involving Distributed Energy Resources ("DER"). All proposed C&I EE financial incentives and rebates exceeding $500,000 require explicit Board approval. In the Matter of the Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for the 2009 through 2012 Clean Energy Program -- Revised 2012-2013 Programs and Budgets - Revised Rebate Approval Process, BPU Docket No. EO07030203, Order dated May 3, 2013.

The Large Energy Users Program ("LEUP") fosters self-investment in EE and combined heat and power projects for New Jersey's largest C&I customers. Incentives are awarded to customers that satisfy the program's eligibility and program requirements for investing in self-directed energy projects that are customized to meet the requirements of the customers' existing facilities, while advancing the State's energy efficiency, conservation, and greenhouse gas reduction goals.

[1] President Joseph L. Fiordaliso and Commissioner Robert M. Gordon recused themselves due to a potential conflict of interest and as such took no part in the discussion or deliberation of this matter.

By this Order, the Board considers the application of Merck Sharp and Dohme Corporation ("Merck") in Rahway, New Jersey, submitted on October 18, 2019. Merck submitted its application under the Fiscal Year 2020 ("FY20") LEUP, pursuant to the Energy Efficiency and Renewable Energy Program Plan Filing for FY20 dated June 20, 2019. The project is planned at two locations in Rahway: Building 800, 800 Underhill Place, Rahway, New Jersey and Building 75G, 126 East Lincoln Avenue, Rahway, New Jersey. Merck requests a total financial incentive of $1,421,988.06 to install energy conservation measures ("ECMs") as part of a project that will cost $2,894,834.00.

If approved, this application would provide different ECMs at the two project sites. At Building 800, the existing fume hoods in 20 different labs would have additional sensors installed to reduce exhaust rates to a lower level when researchers are not present near the fume hood. This will ensure that the fume hoods use less conditioned air while maintaining safety requirements. Additionally, variable frequency drives ("VFDs") will be installed on laboratory exhaust fans to match fan operation with ventilation need. Sensors will also be added to the exhaust system to sample exhaust air quality and ensure energy usage is optimized. Finally, numerous HVAC controls will be installed to allow for greater control over the system's supply temperatures and operations, leading to more efficient heating, cooling, airflow management, and hot water heating throughout the building. At Building 75G, VFDs will be installed on existing boilers to allow the fans speed to match the system load, and the existing motors will be replaced with VFD-compatible upgrades.

On an annual basis, this project would conserve 5,173,161 kWh of electricity and 122,339 therms of natural gas. It would also reduce peak demand by an anticipated 630.4 kW per year. The proposed project has an estimated annual energy cost savings of $541,731.62, as well as an estimated annual operational and maintenance savings of $7,023.00. Without incentives, the payback period is 5.28 years; when factoring in the incentives, the payback period is reduced to 2.68 years.

TRC Environmental Corporation, the Program Manager engaged by the Board to manage the NJCEP LEUP program, attested to the accuracy of certain information regarding the project and to the fact that the project application adheres to the current terms and conditions of the program. Further, TRC, in its role as the NJCEP Program Administrator, submitted its certification that the incentives were calculated in accordance with the program's policies and procedures, the listed amounts are the true and accurate estimated incentives for which the applicant is eligible, and the documentation supporting estimated energy savings inputs was located, reviewed, and made available to calculate the rebate amounts as required by the program's policies and procedures. Based on these certifications and on the information provided by TRC, Board Staff recommends approval of the above-referenced application.

After thorough review of the record and Staff's recommendation, the Board **HEREBY ORDERS** the approval of the aforementioned application for the total estimated incentive amount of $1,421,988.06 for Merck and **AUTHORIZES** issuance of a standard commitment letter to the applicant identified above, setting forth the terms and conditions of this commitment.

The effective date of this Order is April 3, 2021.

DATED: March 24, 2021

BOARD OF PUBLIC UTILITIES
BY:

MARY-ANNA HOLDEN
COMMISSIONER

DIANNE SOLOMON
COMMISSIONER

UPENDRA J. CHIVUKULA
COMMISSIONER

ATTEST:

AIDA CAMACHO-WELCH
SECRETARY

IN THE MATTER OF THE CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING $500,000 – MERCK SHARP AND DOHME CORPORATION

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The undersigned preparer attests that, to the best of their knowledge and belief, the above information is accurate and the subject project application adheres to the current terms and conditions of the Large Energy Users program.

Brian DeLuca	1/12/2021
Signature of Preparer	*Date*
Brian DeLuca	58699
Name of Preparer	*App#*

1. Application Number: **58699**

2. Application Received Date and Fiscal Year: **10/18/2019, FY20 Large Energy Users Program**

3. Compliance Filing: **FY2020 Compliance Filing dated 6/20/2019**

4. Customer Contact (name, company, address, phone #):

   Christopher J. Broome, PE, CEM
   Associate Director, Global Energy CoE
   Merck Sharpe and Dohme, Corp.
   126 E. Lincoln Avenue
   RY28-470F
   Rahway, NJ 07065
   732-267-0853

5. Project Name and Address:

   Fume Hood, Exhaust Fans and HVAC Controls Optimization
   Building 800
   800 Underhill Place, Rahway NJ 07065

   Boiler Draft Fan VFD Upgrade
   Building 75G
   126 East Lincoln Avenue
   Rahway, NJ 07065

6. Rebate amount: **$1,421,988.06**

7. Brief description of measures:

   <u>Building 800</u>

   Fume Hood Optimization: The existing 80 fume hoods across 20 labs have variable volume exhaust control valves which modulate the exhaust flow rate based on sash (opening shield) position. Merck plans to install additional sensors at each fume hood to further reduce exhaust rate to a lower level when researchers are not present near the fume hood, while maintaining safety requirements. Less conditioned supply air will be used resulting in energy savings.

   Exhaust Fan VFDs & Optimization System: Install VFDs on the laboratory exhaust fans and optimize fan staging, allowing exhaust fans to modulate to maintain their required plenum static pressures and stack velocities. Sensors will be added to the exhaust system to sample exhaust air quality and further reduce exhaust stack velocity to maintain acceptable VOC output.

   HVAC Controls Optimization: Various control strategies will be implemented and new sensors will be installed to optimize the HVAC system's supply temperatures and operation. Controls will be upgraded to allow the duct static pressure to reset based on damper position. The Air Handling Unit (AHU) controls will be upgraded to avoid simultaneous heating and cooling by

measuring the demand in each zone and optimizing discharge air temperature. Humidifier controls will be modified to maintain an average humidity above 40%, compared with 60% currently. Non-lab zone HVAC equipment controls will be upgraded to allow for airflow setback during non-occupied times; currently the HVAC equipment always operates in occupied mode.

The hot water supply temperature will be reset based on building hot water demand determined by feedback from sensors at the zone reheat valve and reheat coils on the AHUs. The sequence of operations for (3) existing hot water pumps will be upgraded to allow all pumps to operate together at lower speeds under certain conditions, which provides energy savings compared to the current strategy of operating a maximum of (2) pumps at higher speeds. Existing glycol pumps differential pressure setpoint will be reset to meet AHU preheat demand. An automated hot water system lockout control will stop supplying hot water when outdoor air exceeds 65 F, when the building does not require heating.

Building 75G

Boiler Draft Fan VFDs: Install VFDs on forced draft fans on (2) boilers to allow the fans speed to slow to match the system load. The existing 600 and 700 HP motors will be replaced with inverter duty motors that are compatible with VFD operations.

8. Annual Estimated Energy Savings:
5,173,161 kWh
630.4 kW peak demand
122,339 therms

9. Annual Estimated Energy Cost Savings: **$541,731.62**

10. Project cost: **$2,894,834.00**

11. Operational and Maintenance Savings: **$7,023.00**

12. Simple Payback Period: **5.28 years without incentive; 2.68 years with incentive**

Program Administrator Certification
(New Incentive Commitments > $500,000)

I, **Maura Watkins** , TRC Companies Quality Control, hereby certify that, I have reviewed the application referenced below and determined that, as required by the policies and procedures applicable to the program, (1) the equipment incentives for which the NJCEP Program Manager now seeks approval to commit NJCEP funds have been calculated in accordance with those policies and procedures, and (2) that the amount shown below is the true and accurate estimated incentive for which the applicant(s) is(are) eligible.

Additionally, for incentives based on estimated energy savings that are uniquely calculated, including the Pay for Performance Program, Large Energy Users Program, and the Combined Heat and Power Program, I also certify that I was able to locate and review documentation supporting the inputs used to calculate the rebate amount and evidencing the NJCEP Program Manager's evaluation of those inputs as required by the program's policies and procedures.

By: _____ Date: **01-12-2021**

Maura Watkins

Quality Control – TRC Companies

Application No.: **58699**

Applicant: **Merck Sharp & Dohme Corporation**

Payee: **Merck Sharp & Dohme Corporation**

Committed Amount: **$1,421,988.06**