MnCIFA Screening Memo for Board Approval

Project: Flow Environmental Systems Manufacturing Factory

Borrower: Hold Co. TBD Sponsor: Flow Environmental Systems Inc. Location: To be Determined Construction/Operational Jobs: 100/300	Total Project Cost: $19,225,000 Requested Loan Amount: $3,000,000 Other Funding: $3,000,000 Proposed Equity Investment in Factory: $13,225,000 Proposed Tenor: Construction + 5 years Interest Rate: 5-year Treasury + (175-300 bps)

EXECUTIVE SUMMARY

- MnCIFA is proposing a $3 million loan to Flow Environmental Systems Inc. ("Flow") to finance the refurbishment of a manufacturing facility that will produce up to 840 heat pumps annually. Flow's modular, all-electric systems provide efficient heating, cooling, and domestic hot water without generating greenhouse gas emissions.
- The facility will enable Flow to expand domestic production of clean, sustainable HVAC solutions that align with Minnesota's energy and climate goals by reducing fossil fuel dependence and supporting the transition to zero-emission building technologies.
- MnCIFA funds will contribute to the funding of heat pumps used in the building to make it a net-zero building. MnCIFA approving funds at this juncture derisks the project to private investors and allows them to bring in 6x private capital investors.
- Flow has not yet identified a final site location and is currently evaluating three potential sites, all located within the Minneapolis–Saint Paul area.
- Refurbishment of the factory will be financed through a combination of a $3 million loan from MnCIFA, up to a $3 million loan from other State of Minnesota sources, and a $13.2 million equity investment from Flow.
- In the past three years, Flow has moved from concept to market-ready systems, securing purchase orders from major corporate and government customers. Its growth will depend on scaling within a rapidly emerging $22 billion clean heating and cooling market.

Key Metrics

- **MnCIFA Risk Rating:** 3.250
- **MnCIFA Project Score**: 69

CLIMATE INNOVATION FINANCE AUTHORITY

Term Sheet Summary

- **MnCIFA Loan Amount**: $3,000,000
- **Tenor**: Six years (One year construction and 5-years tenor)
- **Interest Rate**: 5-year Treasury + 175-300 bps

WORKFORCE

- **Prevailing Wage**: Flow has already partnered with local unions and disadvantaged job placement agencies to meet prevailing wage requirements.
- **FTE Construction Jobs**: For initial construction, Flow expects 100-200 jobs in multiple trades, services, and supply chain.
- **FTE Permanent Jobs**: Within construction of the factory, Flow will anticipate hiring over 300 people

ENERGY SAVINGS

Factory Savings

- **How many BTUs (kWh) of energy will be saved annually?** Flow will install highly efficient electric only heat pumps for cooling, heating, and factory load testing. This will save 2,880,000 BTU annually.
- **How much will this save in energy costs for the applicant/consumers?** 240TR in heating and cooling will be saved or $234,126 annually
- **How much CO2 will be avoided during construction phase?** 1814 KG will be sequestered from the atmosphere and used internally within our heat pumps. No natural gas heating will be used. 79,200 KG of CO2 will be avoided during construction.
- **How much CO2 will be avoided annually over the life of the project?** 158,400 KG of CO2 per year using the EPA emission factor. Over 15 years, this will be 2,376 metric tons which offsets 2,639,296 lbs. of burning coal.

Savings from End Consumer

- **How much CO2 will be avoided by switching from gas fired boilers and chillers using high GWP refrigerants to the ANSWR heat pumps made in the proposed factory?** Approximately 200 million metric tons of CO2 will be avoided by ANSWR heat pumps produced by this factory over their useful lives of 30 years.
- **How much PFAS will be avoided over the life of the factory?** Some of the synthetic refrigerants are manufactured here in Minnesota with waste products dumped into landfills. Over 15 years, using CO2 refrigerant will avoid over 1,380 KG of PFAS (forever chemicals) from being discharged as fugitive gases into the air and drinking water creating serious health hazards for Minnesota residents.

- **Other considerations:** Having all-electric heating and cooling for the factory will allow for a local solar power installation to reduce impact on the community's electrical grid.