

To Whom It May Concern:

The Vanguard Group, Inc. ("Vanguard") and its subsidiaries are committed to mitigating money-laundering and terrorist-financing. Vanguard hereby certifies that the Vanguard U.S. Funds ("Funds"), Vanguard Marketing Corporation ("VMC") a U.S. broker dealer, Vanguard National Trust Company ("VNTC") a federally chartered non-depository trust company, and Vanguard Fiduciary Trust Company ("VFTC") a Pennsylvania chartered non-depository trust company, have established and maintain a comprehensive anti-money laundering program ("AML program") reasonably designed to comply with all applicable Anti-Money Laundering rules and regulations of the Bank Secrecy Act as amended by the USA PATRIOT Act. The AML program consists of but is not limited to the following components:

- Written policies, procedures and controls designed to identify and report suspicious activity;
- A designated compliance officer;
- Assessment of money laundering, terrorist financing and sanctions risk
- An ongoing AML training program for appropriate employees;
- An independent testing function; and
- Policies and procedures to collect and refresh customer due diligence information

Vanguard has written Know Your Customer ("KYC") procedures that include a Customer Identification Program ("CIP") to identify and verify each customer and where required by applicable law to identify beneficial ownership of certain entity customers. Dealings with shell banks are prohibited.

Documentation is held by us for at least 5 years after termination of the relationship and may be made available upon where authorized by law enforcement or regulatory authority.

Vanguard also screens against sanctions lists administered by the United States Department of the Treasury's Office of Foreign Assets Control ("OFAC") and other applicable sanctions lists published by governments and supranational bodies including, but not limited to, the EU, Ireland, UK, Australia, Canada and Hong Kong. Vanguard takes reasonable steps to ensure that it does not accept or maintain relationships with any sanctioned country, person or entity named on such lists both at the outset of a new relationship and on a periodic basis throughout the relationship.

The Vanguard Group, Inc.