Texas Environmental Research Consortium

environmental improvement through research and science

RESOLUTION 1.69

Whereas the Texas Commission on Environmental Quality (TCEQ) has adopted a schedule to propose the State Implementation Plan (SIP) for the Houston-Galveston nonattainment area regarding the eight-hour ozone standard in November 2006 and to adopt this SIP in June 2007; and

Whereas there is a pressing need to improve the air quality models that the TCEQ relies on to complete the SIP as well as significant improvement regarding the emission inventories for volatile organic compounds and their related impacts on ozone levels; and

Whereas TERC's Executive Director and the Houston Advanced Research Center (HARC) has consulted with the Science Advisory Committee and the TCEQ's staff on the air quality research priorities that need to be completed to support development of the Houston-Galveston eight-hour ozone SIP.

Now, Therefore, Be It Resolved that the Board of Directors of the Texas Environmental Research Consortium hereby authorizes its Executive Director and HARC to engage persons and/or entities to timely complete four to six research projects at a cost not to exceed $850,000 to assure improvements in the relevant air quality models and the emission inventory for volatile organic compounds.

Be It Further Resolved that the Board of Directors approves Research Project H42 – Update 2006 relating to an updated assessment of the emission reduction opportunities of the Texas Emission Reduction Plan and the Low Income Repair Assistance Program, and directs HARC to engage persons and/or entities to timely complete this project.

Adopted and Approved this 15th day of December, 2005.

Bruce LaBoon, Chairman

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RESOLUTION 1.70

Whereas the Texas Environmental Research Consortium (TERC) completes an Annual Report each year which describes its priorities and accomplishments for the previous year; and

Whereas this report needs to be completed by February 15, 2006 so that it may be timely distributed to State leaders, community and business leaders, the Texas Commission on Environmental Quality and the Environmental Protection Agency; and

Whereas the budget includes funds for TERC to engage a professional writer to develop the Annual Report as has been TERC's practice since 2003.

Now, Therefore, Be It Resolved that the Board of Directors of the Texas Environmental Research Consortium hereby authorizes the Houston Advanced Research Center to engage Mr. Bill Dawson to develop TERC's 2005 Annual Report at a cost not to exceed $15,000, with support from its Executive Director and Research Management Organization..

Adopted and Approved this 15th day of December, 2005.

Bruce LaBoon, Chairman

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RESOLUTION 1.71

Whereas the Texas Environmental Research Consortium (TERC) is providing planning and financial support for the 2006 Air Quality Study II; and

Whereas this intensive study during the summer of 2006 will involve hundreds of scientists from across the country who will conduct an in-depth assessment regarding ozone and particulates, their precursors, and the chemical and meteorological conditions that impact these pollutants in the Houston-Galveston and the Dallas-Ft. Worth areas; and

Whereas Mr. Jim Thomas is leading the planning team for the 2006 Air Quality Study II through the University of Texas at Austin; and

Whereas TERC is jointly funding the Texas Air Quality Study II with the Texas Commission on Environmental Quality, the University of Houston and Lamar's Texas Air Research Center, including Mr. Jim Thomas' salary.

Now, Therefore, Be It Resolved that the Board of Directors of the Texas Environmental Research Consortium hereby authorizes the Houston Advanced Research Center to execute a contract with Mr. Jim Thomas at a cost not to exceed $35,000 to complete the necessary planning for this study.

Adopted and Approved this 15th day of December, 2005.

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Bruce LaBoon, Chairman

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RESOLUTION 1.72

Whereas the Texas Environmental Research Consortium (TERC) has received funding from the Texas Commission on Environmental Quality, the Meadows Foundation and the Houston Endowment to hold a series of forums and workshops on air quality issues and related technology concerns in 2006; and

Whereas TERC does not have adequate staff resources to plan and organize these forums and workshops; and

Whereas TERC may engage qualified professionals to cost effectively plan and organize the 2006 air quality forums and workshops.

Now, Therefore, Be It Resolved that the Board of Directors hereby directs its Executive Director to finalize a contract with Mrs. Anne Culver at a cost not to exceed $35,000 for the purpose of organizing these air quality forums and workshops.

Adopted and Approved this 15th day of December, 2005.

Bruce LaBoon, Chairman

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RESOLUTION 1.74

Whereas the Environmental Protection Agency (EPA) has and is in the process of verifying various technologies to reduce emissions form diesel fueled vehicles and equipment; and

Whereas there is the opportunity to potentially extend the verified technologies to a broader class of onroad/offroad engines and thereby maximize emission reductions; and

Whereas funding from the New Technology Research and Development Program for related assessments and laboratory tests could expedite extension of the verified technologies to additional engines that are needed to reduce emissions in Texas.

Now, Therefore, Be It Resolved that the Board of Directors of the Texas Environmental Research Consortium hereby authorizes the Houston Advanced Research Center to engage persons and/or entities to complete the required verification tests at a cost not to exceed $1,500,000.

Adopted and Approved this 15th day of December, 2005.

Bruce LaBoon, Chairman

Verification of NOx Reduction Technologies

The strategic plan has identified that a means to accelerate commercial acceptance of nitrogen oxide (NOx) reduction technologies is to perform verification testing on technologies that may be verified for other applications. In addition, there are currently new diesel engines being developed to meet EPA 2007 standards. A request for proposals (RFP) will be developed and issued to solicit potential projects addressing the following areas:

- Perform verification of existing verified technologies for other applications
- Develop engine retrofit kits for existing engines based on new engine technologies and perform verification of these

It is anticipated that $1,500,000 will be awarded for 7 to 12 projects ranging from $50,000 to $150,000.

Key deliverables from these projects include:

- Verified technologies for construction applications
- Verified technologies for freight applications

The solicitation will focus on companies that are currently working in the area. Technologies to be considered are those that:

- Are commercially ready, or are near commercially ready and are in the final stages of calibration
- Technologies that have been verified in other countries

It is expected that engine manufacturers and retrofit vendors that have been developing technologies to meet 2007 engine standards may have technologies that could be used to retrofit existing engines.

The New Technology Research and Development (NTRD) program provides funds for projects related to reductions of nitrogen oxide (NOx) and airborne particulates. Projects demonstrate technology that should be offered for sale as soon as practicable with a target of within five years after grant application. Verification/certification of the technologies will be coordinated with the EPA's and California's Environmental Technology Verification Programs.

NTRD grants provide incentives to expedite the commercialization of new and innovative emission reduction technologies that will impact and improve the air quality of Texas. The focus of NTRD funded projects is to develop and facilitate commercialization of technologies that could receive funding under the Texas Emissions Reduction Plan (TERP) incentive grants program.

Cost sharing is recommended to be required to ensure that the submitting organization is committed to commercialization of the technology. For verification/certification of commercially ready technologies, the recommendation is made to require a cost share of 20 percent.

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RESOLUTION 1.75

Whereas heavy duty diesel trucks are by far the largest source of NOx emission from diesel fueled vehicles and equipment in the Houston-Galveston and Dallas-Ft. Worth areas; and

Whereas significant emission reductions from these trucks will be necessary to attain the eight-hour ozone standards; and

Whereas the Environmental Protection Agency (EPA), through its SmartWay Program, is pioneering a set of practical and effective strategies that truckers may implement to significantly reduce the volume of diesel fuel used, which may also result in NOx emission reductions of 15 – 25%; and

Whereas EPA is willing to provide TERC up to $300,000 to support demonstration projects in Texas and other states with trucking entities to demonstrate the positive fuel economy and emission reduction impacts of the SmartWay Program; and

Whereas verification of the SmartWay package could facilitate broad-based participation in the SmartWay Program by trucking entities; and

Whereas this verification testing may be completed for approximately $200,000; and

Whereas NTRD support of related demonstration projects also would facilitate participation in the SmartWay Program Package in Texas and reduce NOx emissions from heavy duty diesel trucks.

Now, Therefore, Be It Resolved that the Board of Directors of the Texas Environmental Research Consortium directs its Executive Director and the Houston Advanced Research Center to pursue the SmartWay Program funding from the EPA for related demonstration projects and to execute a contract with a suitable laboratory to complete the necessary verification testing relative to the SmartWay Program at a cost not to exceed $200,000.

Be it Further Resolved that the Houston Advanced Research Center is authorized to expend up to another $250,000 in NTRD funds to support demonstration projects in Texas regarding the SmartWay Program.

Adopted and Approved this 15th day of December, 2005.

Bruce LaBoon, Chairman

Verification and Demonstration of SmartWay Technologies

The SmartWay[SM] Transport Partnership is a voluntary collaboration between U.S. EPA and the freight industry designed to increase energy efficiency while significantly reducing greenhouse gases and air pollution. SmartWay Transport Partners lead the way towards a cleaner, more efficient transportation future by adopting fuel-saving strategies that increase profits and reduce emissions -- a "win-win" opportunity for all.

The NTRD strategic plan has identified that nitrogen oxide reductions in the freight sector may be obtained through the implementation of various technologies developed under the SmartWay partnership. A project is proposed to demonstrate SmartWay technologies in the state of Texas.

A request for proposals will be developed and issued to solicit potential projects. It is anticipated that a total of $450,000 will be awarded for two projects.

One project will be funded at a maximum level of $200,000. This project will be to complete necessary verification testing relative to the SmartWay Program at a controlled test site.

The second project will be funded at a maximum level of $250,000. Cost sharing would be required to ensure that the submitting organization is committed to commercialization of the technology. For this field trial/initial deployment project, a minimum cost share of 30 percent will be required:

The objectives of the field trial/deployment project will be to:

1. Quantify the fuel economy benefits that result when a class 8 line haul tractor-trailer equipped with today's "best available technology" is retrofit with single wide tires and trailer aerodynamic equipment

2. Verify that the per-mile NOx reductions previously demonstrated and associated with fuel savings due to reduced aerodynamic and rolling drag, are robust across a range of engine designs

3. Add a refined highway drive cycle that EPA believes more closely simulates real-world highway driving, including transient mode operation typical when highway trucks travel through non-attainment areas.

4. Add a diesel oxidation catalyst to assess impacts of exhaust after treatment