FINDING OF NO SIGNIFICANT IMPACT
FOR
ELECTRIC DRIVE VEHICLE BATTERY AND COMPONENT MANUFACTURING INITIATIVE PROJECT
HONEYWELL INTERNATIONAL INC.
MASSAC COUNTY, ILLINOIS

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the *Final Environmental Assessment for Honeywell International Inc. Electric Drive Vehicle Battery and Component Manufacturing Initiative Project, Massac County, Illinois* (DOE/EA-1716). Based on the analyses in the Environmental Assessment (EA), DOE determined that its proposed action - awarding a federal grant to Honeywell International Inc. (Honeywell) for the construction of a manufacturing plant to produce a critical battery material, lithium hexafluorophosphate ($LiPF_6$) - would result in no significant adverse impacts. DOE further determined that there could be beneficial impacts to the local economy and to the nation's air quality and transportation industry from implementation of Honeywell's proposed project.

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act; Public Law 111-5, 123 Stat. 115), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program, is providing up to $2 billion in federal funding for competitively awarded agreements to facilitate the construction of U.S. manufacturing plants (including increases in production capacity at existing plants) to produce advanced batteries and electric drive components.

The federal action of providing funding for these projects, known as the Electric Drive Vehicle Battery and Component Manufacturing Initiative, requires compliance with the *National Environmental Policy Act of 1969* (NEPA; 42 U.S.C. §§4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). DOE prepared an EA to evaluate the potential environmental consequences of providing a grant for this proposed project under the initiative.

PURPOSE AND NEED: The overall purpose and need for DOE action pursuant to the Vehicle Technologies Program and the funding opportunity under the Recovery Act are to accelerate the development and production of various electric drive vehicle systems by building or increasing domestic manufacturing capacity for advanced automotive batteries, their components, recycling facilities, and electric drive vehicle components in addition to stimulating the U.S. economy. This and the other selected projects are needed to reduce the U.S. petroleum consumption by investing in alternative vehicle technologies. The proposed project will also meaningfully assist with the nation's economic recovery by creating manufacturing jobs in the U.S. in accordance with the objectives of the Recovery Act.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide a grant to partially fund Honeywell's proposed project – the construction of a manufacturing plant to produce a critical battery material, $LiPF_6$. The plant would be located on a 1,010-acre complex occupied by Honeywell in an unincorporated area of Massac County, near the City of Metropolis, Illinois. The existing Honeywell complex includes 16 buildings with 232,571 square feet (s.f.) of building space, of which 150,936 s.f. is manufacturing space. The proposed project would be constructed on a 10-acre parcel adjoining an existing 49.1-acre fenced-in restricted area adjacent to the existing Honeywell facility. It would involve the construction of a new 20,000 s.f., four-story high commercial $LiPF_6$ plant with new process equipment, piping, and feed storage containers; a 2,000 s.f. laboratory and control room; a 2,000 s.f. warehouse; and a 30,000-gallon above ground storage tank (AST). Additionally, underground firewater lines, a new access road, and a railroad extension or spur would be constructed. The access road would either be an extension of an existing road or a connection to the existing plant entrance road. The railroad may also be an extension of approximately 100-200 feet or a new spur. The construction of the access road and the rail extension or spur would take place within the proposed project site.

The proposed plant would be the only U.S. plant dedicated to commercial production of $LiPF_6$. The production of $LiPF_6$ would require processing hydrofluoric acid (HF), fluorine gas (F_2), phosphate, and other chemicals in a reactor to generate the $LiPF_6$ product. This process to produce the $LiPF_6$ would generate substantially smaller amounts of wastes and byproducts when compared to methods currently employed. The most common methods involve the use of phosphorus chloride to produce phosphorus pentafluoride (PF_5), which reacts with lithium fluoride (LiF) to create $LiPF_6$. Honeywell's process would use HF, phosphorus (P), and F_2 in a reactor to produce PF_5, and subsequently $LiPF_6$. The process produces the $LiPF_6$ in a crystallized form and HF that can then be recycled and reused in the process.

The overall project consists of two concurrent phases. Phase I, currently underway, involves the construction of a $LiPF_6$ Sample Plant in Buffalo, New York. The $LiPF_6$ from the Sample Plant would be sent to Li-ion battery customers so that the customers are able to calibrate their production plants and be ready to receive $LiPF_6$ from the proposed Phase II commercial $LiPF_6$ plant. Phase I was determined by DOE to be an independent action and categorically excluded from further NEPA review and, therefore, is not analyzed in the EA.

The plant would produce up to 1,500 metric tons of $LiPF_6$ on an annual basis using a Honeywell-developed process to prepare high-purity material as required for high quality Li-ion batteries. DOE would provide $27.3 million in financial assistance in a cost-sharing arrangement with Honeywell. The total cost of the project is estimated at $54.6 million, and would create 34 permanent jobs.

ALTERNATIVES CONSIDERED: In addition to the proposed project, DOE considered the No-Action Alternative as required under NEPA. Under the No-Action Alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE funding. This assumption establishes a baseline against which the potential environmental impacts of the proposed project are compared.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the No Action Alternative. DOE considered 17 environmental resource areas in the EA. However, not all areas were evaluated at the same level of detail. DOE focused more detailed analysis on areas that would require new or revised permits, have the potential for significant adverse environmental impacts, or have the potential for controversy. The areas DOE evaluated in more detail included: air quality and greenhouse gases (GHGs), noise, geology and soils, surface water and groundwater, vegetation and wildlife, wetlands, solid and hazardous wastes, transportation and traffic, and human health and safety. For these areas, DOE determined there would be minimal potential environmental impacts.

During the construction process, equipment used to construct the proposed plant would intermittently emit quantities of five criteria air pollutants: carbon monoxide, nitrogen oxides, sulfur dioxide, particular matter of 10 microns or less, and volatile organic compounds. In addition to tailpipe emissions from heavy equipment, ground surface disturbances during excavation and grading activities could potentially generate fugitive dust. Fugitive dust, such as dirt stirred up from construction sites, can affect both environmental quality and public health. The type and severity of the effects depend in large part on the size and nature of the dust particles. Construction personnel would implement appropriate mitigation measures, such as applying water to exposed surfaces or stockpiles of dirt, when windy or dry conditions promote problematic fugitive dust emissions. Adhering to mitigation measures and Best Management Practices (BMPs) would reduce the adverse impacts from fugitive dust emissions. DOE expects the overall impacts from fugitive dust emissions would be temporary in duration and of minor intensity.

The plant design for the proposed project is in the initial stages, thus, the actual emissions are currently unknown. However, based on general knowledge and the type of technology proposed, DOE does not expect that emissions would increase significantly beyond current emissions from Honeywell's existing facilities. Emissions are estimated based on the planned capacity for production of $LiPF_6$ and a 95 percent efficiency of the emissions control devices. For the proposed project, Honeywell plans to control emissions using dust collectors and potassium hydroxide (KOH) scrubbers, which have similar efficiencies to existing units.

The new manufacturing operations would require a modification of the facility's Title V permit to include all new air pollution sources. The current Metropolis plant is a major source of hazardous air pollutants and sulfur dioxide and has a Title V permit issued by the Illinois Environmental Protection Agency (IEPA). A construction permit and a minor modification to the Title V permit to add the new emissions points would be required. No major New Source Review would be required, as the changes would be accomplished under the current minor New Source Review process with IEPA. The facility is in compliance with its air operating permit, and there are no barriers to impede future compliance.

The carbon dioxide (CO_2) emissions from the proposed $LiPF_6$ plant are expected to be low. However, they would be reported along with the CO_2 emissions from existing operations, which currently exceeds the 25,000 metric tons per year of CO_2 threshold that would trigger reporting under the *Final Mandatory Reporting of Greenhouse Gases Rule*.

Typical construction noise would be generated. Operational noise outside the facility would come primarily from heating, ventilation, and air conditioning units, fans, pumps, compressors, coolers, vehicle traffic and the railroad.

Approximately ten acres of land would be graded for construction which would require paving and establishment of impervious surface to support the plant and associated infrastructure (i.e., entrance roads, parking, and stormwater management). Best management practices for sediment control would be implemented, so impacts would be localized and minor.

Potential surface water and groundwater contamination from construction equipment leaks could occur; however, adherence with the facility's stormwater pollution prevention plan (SWPPP) (which would be modified to accommodate the proposed project) and spill prevention, countermeasures and control (SPCC) Plan would minimize this risk.

Operation of the proposed plant would cause an increase in treated process wastewater discharges to the Ohio River by approximately 5,600 gallons per day (gpd), which would represent a less than 1 percent increase in the current maximum discharge of 4,000,000 gpd. In addition, stormwater discharges would increase as a result of the increase in impervious surfaces. The relatively small increase in discharge could cause minor impacts to the water chemistry and temperature of the river, which is considered an impaired water body. Impacts would be minimized through adherence with the facility's National Pollution Discharge Elimination System (NPDES) permit and associated SWPPP, which would be modified to accommodate the proposed plant. The NPDES permitting includes limits on the chemical composition and temperature of discharged water, thereby providing a regulatory mechanism to limit impacts. During operations, accidental spills of toxic substances, such as petroleum products, could be a potential source of surface water contamination. A minor potential for surface water contamination would exist; however, adherence with the facility's SWPPP (which would be modified to accommodate the proposed plant) and SPCC Plan would minimize this risk.

A direct adverse impact would occur to vegetation and wildlife from the loss of up to 10 acres of early successional forest. Construction activities would require site grading and removal of vegetation. This vegetation community, however, is not considered rare or of high value within the region; therefore, overall impacts from construction would be minor. Following construction, those areas temporarily disturbed within the 10-acre site would be either seeded or sodded with grass and maintained as grassy areas.

Construction of the proposed project could result in the unavoidable loss of isolated and jurisdictional wetlands. Any unavoidable disturbance to the 0.37-acre jurisdictional wetland or associated stream channel (considered jurisdictional "waters of the U.S." by the U.S. Army Corps of Engineers [USACE]) would require permitting with the USACE. Although the USACE does not regulate the approximate 0.21 acres of isolated wetlands, the Illinois Department of Natural Resources regulates isolated wetlands under the Illinois Interagency Wetland Policy Act of 1989. This Act has a goal of "no overall net loss of the State's existing wetland acres or their functional value." Impacts to these isolated wetlands would, therefore, require permitting with the Illinois Department of Natural Resources. Although final engineering design has not been completed, and acreage of wetland disturbance (if any) cannot

be determined, Honeywell would comply with any mitigation stipulations required as part of the Section 404 permitting process by the USACE and the Illinois Department of Natural Resources. Although direct impacts may occur as a result of construction of the proposed project, overall adverse impacts to wetland resources would be minor and localized.

Construction of the new building would likely generate solid waste from building materials. These materials could be land-filled offsite at a permitted solid waste landfill. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams. In-state or out-of-state landfills or recycling facilities would have the capability and capacity to accept these wastes. No demolition of structures would be required; therefore, there should not be an impact to existing structures where asbestos containing material and lead-based paint are present. Solid waste and sanitary waste generated during construction would be limited to common construction-related waste streams.

Proposed operations would require the use of hazardous and toxic materials, including F_2, HF, P, LiF and $LiPF_6$. Of these materials, P and LiF would be new chemicals at this location. One new, 30,000-gallon AST would be located outdoors to store P. LiF would be stored in containers inside the proposed plant. The plant would store HF in an approximately 2,400-gallon intermediate tank that would be located indoors. The rest of the HF inventory (three, 20,000-gallon tanks) would be located in the existing facility. The HF would be transported from the existing plant to the new plant via an aboveground 2-inch pipeline approximately 800 feet long. A pipeline, up to 12 inches in diameter and approximately 500 feet long, would transport F_2 from the existing plant to the new plant. Other materials would be stored indoors in 55-gallon drums or smaller containers.

The plant would generate less than 5 tons per year of solid waste and is estimated to generate 15,800 gpd of spent caustic material (5 percent KOH and the rest potassium fluoride and residual trace elements) from the exhaust vent emission scrubber. The spent caustic would be sent offsite for treatment and disposal. Waste materials would be sent offsite for recycling, or treated and disposed of at a hazardous waste disposal facility or landfill. As a large-quantity generator of hazardous waste, the facility is required to have a Preparedness and Prevention Program and a Resource Conservation and Recovery Act (RCRA) Contingency Plan and to train its employees on the safe and proper handling of hazardous waste. These existing Honeywell plans and training would be expanded to include the new plant. The existing facility must also adhere to conditions of its RCRA Part B Permit to ensure the maintenance and monitoring of the onsite solid waste management units to ensure that no release to the environment from these areas occurs.

Short-term but measurable adverse impacts to traffic are expected during the construction phase of the proposed project involving construction of the new plant the installation of the process equipment and piping, storage tanks, a new access road, a railroad extension or spur, and a 30,000 AST.

Construction-related vehicles would add to existing local traffic and would potentially cause minor congestion, higher traffic noise, and increased vehicle emissions along the routes. Construction delivery truck traffic would be sporadic throughout the day, arriving with

equipment or materials likely 10 times per week during the course of the project. The roads most impacted would be Route 45 and Interstate 24. Construction impacts to existing transportation resources would be minor, temporary and localized (i.e., limited to proximity of the project site). Construction traffic can be accommodated through the existing road network.

During plant operation, truck traffic would be expected to result in an increase of less than two trucks per week in and out of the property. The addition of 34 permanent employees, working shifts, would generate a minor long-term increase in privately-owned vehicle traffic. The additional vehicle traffic would be less than 1 percent of the current Annual Daily Traffic count on the road, and therefore would generate a negligible impact.

The project would introduce two new chemicals, P and LiF. P would be stored in a 30,000-gallon AST stored under a water blanket that would be located outdoors. The primary risk associated with the 30,000-gallon AST of P would be spontaneous combustion upon exposure to air, and in the event of a fire would produce irritating or toxic smoke; contact to the skin or eyes would cause burns. Exposure to LiF would cause skin and eye irritation; inhalation of dust can be toxic to lungs and mucous membranes. Neither P nor LiF are regulated toxic substances under 40 CFR Part 68; therefore, these chemicals would not be included in the facility's Risk Management Plan. The risk for a release from the proposed project would not increase the potential for exposure to offsite receptors from what currently exists at the existing facility. Honeywell may have to revise its Risk Management Plan and emergency response plan to incorporate the new plant.

The health and safety plans in place address potential hazards associated with handling materials as well as the emergency response actions to be followed in the event of a release, and spill containment and control if a spill of a liquid material should occur. Any safety and security issues associated with the proposed plant would be in compliance with applicable regulations and Honeywell's corporate policies. In addition, prior to startup, a hazard assessment would be performed for any new materials proposed to be used, to ensure that appropriate procedures and equipment would be provided to protect workers and appropriate employee training performed before handling of these materials.

Because hazardous materials and resulting wastes would be handled onsite, the potential risk of exposure would be greatest for Honeywell employees, who would be trained in proper safety procedures. The risk of exposure to the general population would be similar to what currently exists. Health and safety risks associated with onsite processes would be addressed in procedures developed to guide the safe handling of materials and wastes. The principal hazards associated with plant operations (exposure to from chemical handling and equipment operation) would be contained within buildings and secure areas of the property. A safety plan would be developed to address any safety hazards and would specify appropriate training on proper procedures and safety practices. With appropriate safety procedures in place and the use of personal protective equipment, the potential for an impact to the health and safety of workers would be minor.

The other environmental areas DOE evaluated for potential impacts were: land use, meteorology, socioeconomics, environmental justice, visual resources, cultural resources,

floodplains, and utilities and energy use. DOE determined that there would be no potential for adverse impacts for these resource areas or that the impacts would be negligible, temporary, or both. The EA gives the reasons DOE did not conduct more detailed evaluations of these areas.

Under the No-Action Alternative, the project would either be delayed, as Honeywell sought other funding sources, or abandoned altogether. If abandoned, the potential environmental consequences and benefits would not occur.

PUBLIC AVAILABILITY: DOE distributed the Draft EA on July 11, 2010, and advertised its release in the *Paducah Sun* on July 11, 12, and 13, 2010, and the *Metropolis Daily* on July 14, 2010. In addition, DOE sent copies for public review to the Metropolis Public Library. DOE established a 30-day public comment period that began July 11, 2010, and ended on August 11, 2010. DOE announced it would accept comments by mail, e-mail, and facsimile.

The Draft EA was distributed to various federal, state, and local agencies with jurisdiction or special expertise. DOE conducted formal consultations by mail with the responsible U.S. Fish and Wildlife Service in Marion, Illinois; the Illinois Department of Natural Resources in Springfield, Ilinois; and the Deputy State Preservation Officer, Preservation Services Division in Springfield, Ilinois. In each case, DOE received correspondence supporting a determination of no potential impacts to threatened or endangered species and critical habitat, and no potential impacts to properties listed on or eligible for inclusion in the *National Register of Historic Places*.

Copies of the Final EA and this FONSI will be sent to stakeholders that provided comments or consultation, and will be available at DOE's National Energy Technology Laboratory web site at http://www.netl.doe.gov/publications/others/nepa/ea.html.

COMMENTS: Comments were received from two entities: the IEPA and the U.S. Environmental Protection Agency (USEPA). The IEPA commented that the following permits may be required from the Division of Water Pollution Control; a permit for any sanitary sewers needed to serve the project and a construction site activity stormwater NPDES permit if there is more than one acre of disturbance. A permit from the Division of Public Water Supplies would be required for proposed water mains and elevated water storage tanks. Additionally, a permit would most likely be required from the Bureau of Air. IEPA also commented that Honeywell must properly dispose of or recycle solid and hazardous wastes.

The USEPA commented on the State of Illinois enforcement actions over the past several years including Clean Air Act (CAA), RCRA and Clean Water Act (CWA) violations, however, the proposed site for plant expansion has no history of industrial activity or contamination. The USEPA also commented that the USEPA and the IEPA have determined that this new facility will not exceed permissible emission standards and will not endanger the health and well being of the environment or people in the area of the facility. Additionally, the USEPA requested that wetland mitigation measures, consistent with U.S. Army Corps permitting requirements, be implemented.

MITIGATION REQUIREMENTS: Construction activities at the site would have a direct impact to wetlands. By mutual agreement of Honeywell and DOE, Honeywell will employ the following mitigation:

> Wetland mitigation would follow the USEPA and USACE Wetlands Compensatory Mitigation Rule which outlines standards clearly affirming the requirement for permit applicants to adhere to the "mitigation sequence" of "avoid, minimize and compensate" wetland impacts. Honeywell would demonstrate through the permitting process how wetland impacts were avoided and minimized; compensation for unavoidable impacts (in the form of restoration, enhancement, establishment, or preservation) would then be considered using a watershed approach. The USACE District Engineer would specify the appropriate ratio of compensatory mitigation (typically 1:1 or greater) and form of compensation for any unavoidable losses to wetlands during the permitting process.

DETERMINATION: On the basis of the evaluations in the Final EA and subject to the mitigation measures set forth above, DOE determined that its proposed action – providing a $27.3 million federal grant – and Honeywell's proposed project – constructing a manufacturing plant to produce a critical battery material, $LiPF_6$ – would have no significant impact on the human environment. The proposed project would have only minor impacts: increased air emissions; increased noise and traffic; impacts to soils, vegetation, wildlife and wetlands; increased potential for surface water and groundwater contamination; and generate hazardous waste. The project proponent would be required to adhere to applicable permit requirements during construction and operations. All other potential environmental impacts identified and analyzed in the EA would be negligible. Therefore, preparation of an environmental impact statement is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this 13th day of September 2010.

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