# Ford BlueOval SK Battery Park (Glendale, KY) Environmental Impact Assessment

111

Armin Alexander Niggemeyer (64388), Paul Lennart Rocke (63579), Tessa Mary Pohlschroeder (63726), Isabella Sophie Barth (65782), Valéria Miller (65134)

Agenda



1	Project Overview			
2	Company Overview			
3	Environmental Impact Assessment			
	3.1	Earth Assessment	5	
	3.2 Air Assessment		6	
	3.3 Water Assessment		7	
	3.4	Socio-Economic Assessment	8	
4	C	Conclusion	9	



#### Driving Decarbonization, the Blueprint for U.S. EV (electric vehicle) Leadership

Project Scope & Coverage

- Location: Glendale, Kentucky, U.S.
- Site area: 1,500 acres
- Workforce: 5,000 full-time jobs at full capacity
- Facilities: Two battery plants (adjacent), total 82 GWh annual capacity
- Investment: **\$5.8 billion**

#### **Strategic Impact**

- World's largest EV battery investment
- Key to Ford's U.S. electrification strategy.
- Spurs 8,000+ regional jobs through **supply chain & local development**.
- Contributes to U.S. decarbonization & EV adoption.

#### **Timeline Highlights**

- 2021: Project announced
- 2022 2024: Construction phase
- Q4 23 Q4 25: Equipment installation (Korean engineers on site)
- EOY 2024: Production begins in Plant #1
- **EOY 2025:** Site reaches full workforce and operational scale

#### **BlueOval SK Battery Park Location Map**



# **Company Overview**



## Project jointly owned, with U.S. government oversight and Korean technical input

Management Structure



Involvement Ford Motor Company		SK On Co., Ltd.	
Ownership	50% joint venture partner	50% joint venture partner	
Financing	Part of \$5.8B private capital investment	Part of \$5.8B private capital investment	
Implementation	Leads <b>site construction</b> and <b>physical development</b> of the Glendale facility	Supplies <b>equipment, technology, and skilled engineers</b> (500–1,000 Korean staff on site) for plant installation and training	
Operational Role	Will use the battery output for Ford's EV production; involved in engineering, planning, and supply chain integration	Provides proprietary lithium-ion battery technology and oversees technical processes	

# **Earth Assessment**



## Construction and operation cause cumulative impacts on soil integrity, habitat continuity, and land stability.

Construction Stage			Operational Stage		
Potentially Significant Impacts: Assessment*:			Potentially Significant Impacts: Assessmen		
	<b>1. Soil Erosion &amp; Degradation:</b> potentially severe impacts through Earthworks and grading activities	•••		<b>1. Soil Erosion:</b> soil erosion is expected to be minimal and limited to vehicle traffic on unpaved areas	
	<b>2. Land Use Transformation:</b> Permanent conversion of Prime/ Unique Farmland, with irreversible losses to ecosystem services.	•••	it is a second s	<b>2. Sinkhole Risk:</b> Karstic limestone bedrock increases long-term risk of subsurface collapse, with significant risks to infrastructure and safety	•••
	<i>3. Habitat Destruction:</i> Loss of 65.6 acres of endangered species (Indiana Bat and Northern Long-Eared Bat) habitat, riparian forest removal	•••	Ŵ	<i>3. Hazardous Waste Generation:</i> 288 million pounds of NMP scrap and other hazardous waste annually, with limited on-site circularity	•••
•	<i>4. Geological Risk:</i> Construction on shallow St. Louis Limestone increases sinkhole formation risk due to altered subsurface water flows	•••			

\*Preliminary assessment based on existing reports and measurements

Legend: • Positive Impact • Moderately Negative Impact • Negative Impact

# Air Assessment



## Construction causes temporary air impacts, operation requires sustained emission controls.

Construction Stage			Operational Stage			
Potentially Significant Impacts: Assess			Potentially Significant Impacts:		Assessment*:	
	<b>1. Dust and PM Emissions :</b> Fugitive dust (PM <sub>10</sub> /PM <sub>2.5</sub> ) from grading and rock crushing poses health risks	•••		<b>1. VOC and NO<sub>x</sub> Emissions:</b> Battery production and boilers emit regulated air pollutants; Title V applies	•••	
	<b>2. Diesel Exhaust:</b> NO <sub>x</sub> , PM <sub>2·5</sub> and CO from heavy construction equipment contribute to ozone and irritation	• • •		<b>2.</b> Indirect Emissions: Coal-based electricity use leads to upstream $CO_2$ , $SO_2$ and $NO_x$ emissions	•••	
**	<i>3. VOC Releases:</i> Asphalt paving and coatings cause short-term VOC emissions and thereby ozone precursor emissions	• • •		<b>3. Traffic Emissions:</b> Commuting and logistics cause minor additional emissions but stay within standards	•••	
)	<i>4. Noise Pollution:</i> Heavy machinery and vehicle traffic result in elevated noise levels, although impacts remain locally limited	• • •	<sup>t</sup> ær	<i>4. GHG Reductions through EV Deployment:</i> Battery output replaces ICEs, avoiding ~4.7 Mt CO <sub>2</sub> annually	•••	

\*Preliminary assessment based on existing reports and measurements

Legend: • Positive Impact • Moderately Negative Impact • Negative Impact

# Water Assessment



## Construction and operation cause cumulative impacts on freshwater bodies and groundwater.

Construction Stage			Operational Stage		
Potentially	Significant Impacts:	Assessment*:	Potentially	/ Significant Impacts:	Assessment*:
	<b>1. Removal of rivers and wetlands:</b> Permanent discharge of clean fill to create space for the factory	•••		<b>1. Use of freshwater:</b> Daily usage of 2.4 million gallons of freshwater from from the Hardin County Water District	•••
2	<b>2. Relocation of rivers and wetlands:</b> Permanent and temporary relocation of waterbodies to accommodate construction	•••		<b>2. Production of wastewater:</b> Production and discharge of 0.66 million gallons of freshwater per day	•••
	<i>3. Habitat Destruction:</i> 28,275 feet of streams and 16 acres of wetland will be impacted by the construction	•••	R	<b>3. Groundwater contamination:</b> Operational accidents can lead to unwanted spills and consequent toxic contamination	•••
	<b>4. Increased Stormwater runoff:</b> Due to construction rainwater is more likely to runoff and carry pollutants and chemicals	•••			

Legend: • Positive Impact • Moderately Negative Impact • Negative Impact

## **Socio-Economic Assessment**



#### Negative impact on housing affordability, positive impact on infrastructure and economy



Legend: 
Positive Impact 
Moderately Negative Impact 
Negative Impact



Diverse set of negative impacts for construction to consider, while positive impacts for operation expected to predominate

	Impact Dimension	Potentially Significant Impacts	Assessment*	Potential Prevention & Mitigation Measures
Construction Stage	Earth	<ul> <li>Soil Erosion &amp; Degradation</li> <li>Land Use Transformation</li> <li>Geological Risk</li> </ul>		<ul> <li>Implement a 10-year environmental monitoring program, including erosion control measures and site restoration</li> </ul>
	Air	<ul><li>Dust and PM Emissions</li><li>Noise Pollution</li></ul>		<ul><li>Apply dust suppression techniques e.g. water spraying</li><li>Limit construction work hours and install noise barriers</li></ul>
	Water	<ul> <li>Removal &amp; relocation of rivers Habitat Destruction</li> <li>Increased Stormwater runoff</li> </ul>		<ul> <li>Implement a wetland and habitat restoration plan with continuous water quality monitoring</li> </ul>
	Socio-Economic	<ul><li> Job creation</li><li> Infrastructure expansion</li><li> Pressure on housing market</li></ul>		<ul> <li>Develop housing affordability programs</li> </ul>
perational Stage	Earth	<ul> <li>Soil Erosion</li> <li>Sinkhole Risk</li> <li>Hazardous Waste Generation</li> </ul>		<ul> <li>Monitor soil conditions regularly through geotechnical sensors</li> <li>Implement a closed-loop waste management systems</li> </ul>
	Air	<ul><li>Direct &amp; Indirect Emissions</li><li>GHG Reductions</li></ul>		<ul> <li>Install renewable energy systems such as solar panels to reduce emissions</li> </ul>
	Water	<ul> <li>Use of freshwater</li> <li>Production of wastewater</li> <li>Groundwater contamination</li> </ul>		<ul> <li>Implement a closed-loop water recycling system</li> <li>monitor groundwater quality to prevent contamination from hazardous materials</li> </ul>
<b>O</b> Prelim	Socio Economic	<ul> <li>Job creation</li> <li>Skill development</li> <li>Worker safety</li> <li>existing reports and measurements</li> </ul>		<ul> <li>Enforce strict safety protocols and safety drills to ensure worker protection</li> <li>Allow unionization for all Ford plant employees         Legend: Positive Impact         Moderately Negative Impact     </li> </ul>