



Welcome to the Future of Clean, Reliable Transportation

In 2035, the North Carolina Ferry System is at the forefront of sustainable, non-fossil fuel transportation, serving the Outer Banks with innovative ferries, buses, and light electric vehicles. Our vision ensures seamless, eco-friendly travel for residents, visitors, and the surrounding community.

Fleet of the Future: The Sol

The **Sol** leads the charge in our fleet of advanced non-fossil fuel ferries.

Specifications:

- **Dimensions:** 180 feet long, 44 feet wide
- **Capacity:**
 - 40 cars
 - 2 buses
 - 300 passengers
- **Power Systems:**
 - Solar canopy generating **280 kWh**
 - **2000 kW battery bank**, accessible via a deep hull ramp
 - Two **750 kW outboard motors** (fore and aft), enabling 360° rotation
 - Two emergency **500 kW biodiesel generators** fueled by recycled cooking oil from the Outer Banks

The **Sol's black and gold colors** celebrate Appalachian State University's heritage while embodying innovation.

Pioneering Technologies

Ferries:

- Solar, wind, and biodiesel systems debuted with the **Frisco**, our first test ferry in the late 2020s.
- **Bidirectional tunnel hull design** reduces drag and improves energy efficiency.

Electric Buses:

- Buses act as **interchangeable batteries** with **1000 kWh** storage each, charging at the ports.
- Solar panels on bus roofs generate **8 kW**, further boosting renewable energy capacity.
- Multipurpose interiors convert into classrooms during off-seasons, serving the local community.

Ports:

- Solar canopies with **40% efficient cells** generate **2 MW** of power.
 - Two **3 MW wind turbines** supplement the energy supply.
 - **Mobile biodiesel generators** convert waste vegetable oil into fuel.
 - **Biogas** from sewage facilities complements biodiesel production.
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SuperPower Ports: Energy Hubs for the Community

The Outer Banks ferry ports are more than transportation hubs—they are self-sustaining power stations designed for resilience and community service.

- **Energy Storage:**
 - Parked buses and inactive ferries store excess energy.
 - **Disaster Recovery:**
 - Serve as staging areas during emergencies.
 - Provide backup power and debris reduction via **500 kW grinders**, creating compost for local agriculture.
 - **Local Benefits:**
 - Excess energy powers Coast Guard facilities, marinas, and community operations.
 - Public charging stations support the growing fleet of private electric vehicles.
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Commitment to Sustainability

Our efforts prioritize a greener, more resilient Outer Banks:

1. Transitioning entirely off fossil fuels.
 2. Building an energy ecosystem that supports local resilience.
 3. Creating multipurpose solutions that serve transportation, education, and recovery needs.
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Experience the Outer Banks, Sustainably

With ferries like the **Sol**, buses doubling as energy storage and classrooms, and ports producing energy for the most severe conditions, the NC Ferry System ensures sustainable transportation and community support, all while preserving the natural beauty of the Outer Banks for generations to come.

Join us in embracing the future of clean, renewable travel!
