

# The Anbaric Pipeline of Transmission Projects

## New England

December 2011

# About Anbaric Transmission

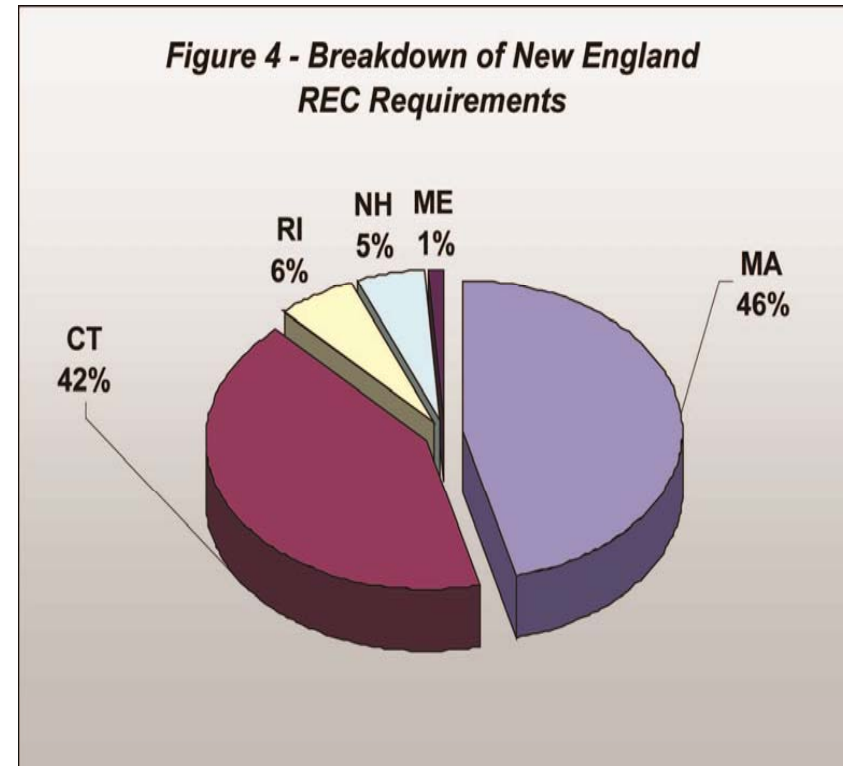
- New England Pipeline of projects
  - Green Line
  - Champlain Wind Link
  - Bay State Offshore Transmission System

# About Anbaric Transmission

- Independent Transmission Development Company
  - Incubator of innovative transmission projects that provide energy, capacity and access to renewable power for constrained markets
    - Specialize in HVDC submarine applications
    - Twelve substantial transmission projects with a variety of investors
    - One is in operation (Neptune), one in construction (Hudson).

# Demand for Renewable Energy of New England States

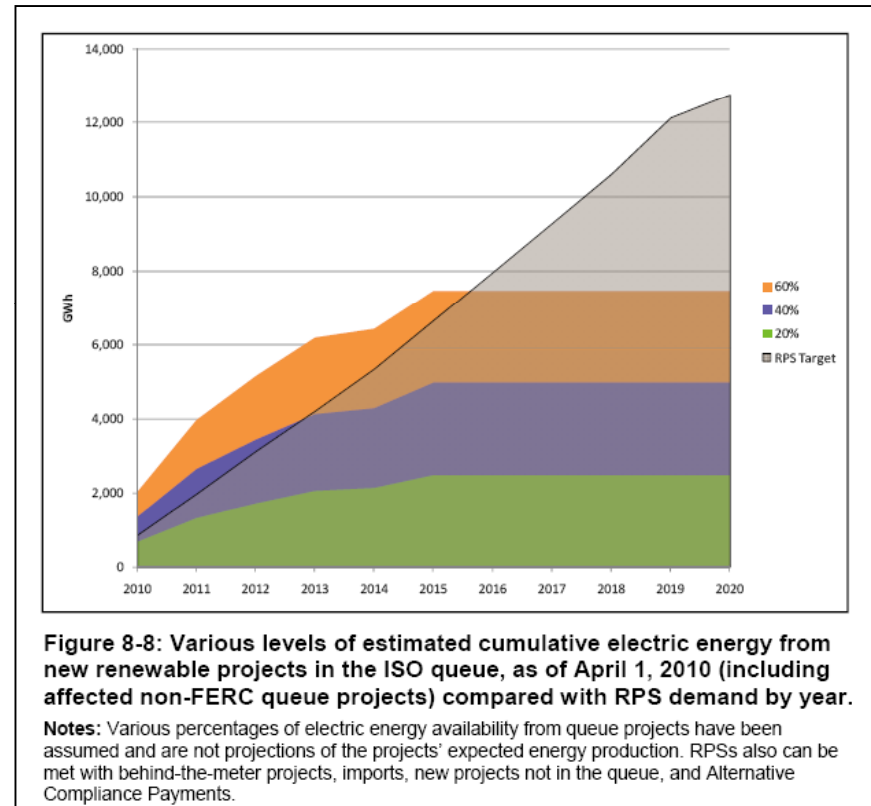
- Massachusetts's and Connecticut's RPS requirements account for 88% of the demand for renewable energy credits ("RECs") in New England
- Participation by these states in a regional procurement of RPS eligible resources in a NESCOE process would energize the New England renewable industry



Source: Report by ESAI prepared for NEITC.

# New England REC Demand/Supply Outlook

- ISO-NE's most optimistic scenario (60% completion of projects in the current ISO-NE generation queue) still shows a short fall in REC supply beginning in 2015/2016
- New resources beyond those in the current queue will be needed to meet demand of an estimated 500 MWs of wind projects per year
- Transmission needs to be built to enable new generation

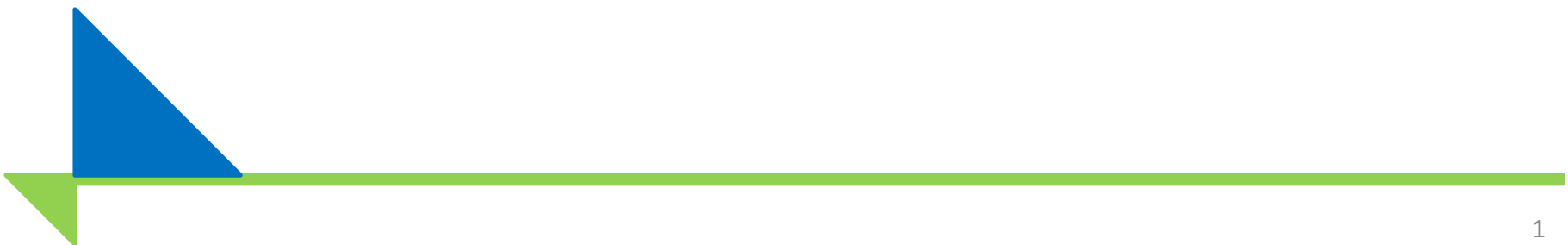


Source: ISO-NE 2010 Regional System Plan.

# GREENLINE

## Green Line Transmission Project

A 300kV/800MW HVDC Transmission System Between  
Haynesville, Maine and Boston, Massachusetts

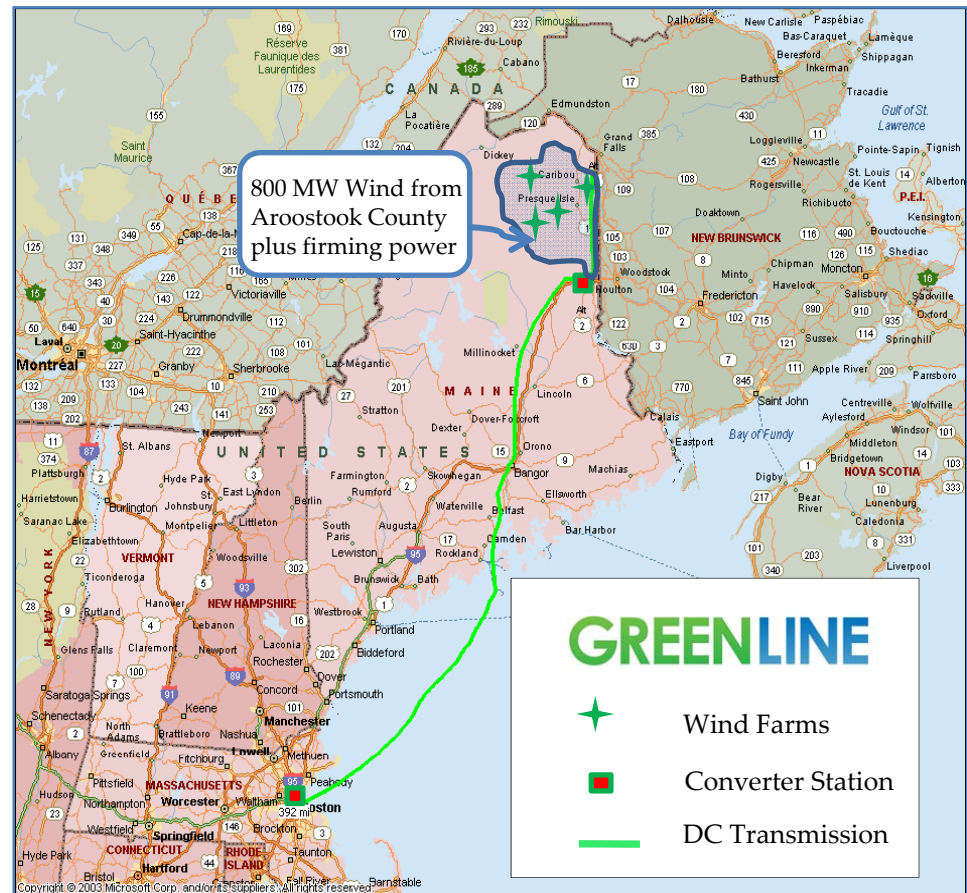


# Development Thesis

- Provides controllable transmission line for Northern Maine wind resources firmed up by other sources to provide an 800MW “baseload” injection into Salem, MA
  - Northern Maine has ample wind potential to fill Green Line’s 800MW capacity “when the wind blows”
  - “Firming energy” can come from other, competitive suppliers – hydro, nat gas, or imports.
  - Onshore wind + low-cost firming power means affordable electricity at the southern terminus of the project
- Incremental Benefit of Providing Enhanced Reliability to the NEMA Load Pocket and New England
  - Salem station scheduled for closure in 2015.
  - Green Line’s HVDC attributes makes it a potential capacity resources in NEMA.
  - The controllable HVDC connection between Maine and Boston/Salem will enhance reliability in the NE grid
- Combining New England wind + affordable firming power + capacity value at Salem would be an excellent offering in a competitive, NESCOE procurement.

# Project Summary

- **Size** - 300 kV DC - 800MW
- **Identified Route** - Haynesville, ME on the MEPCO 345kV line to Salem, MA
- **Rationale**
  - Most cost effective means to meet New England’s renewable portfolio standard requirements;
  - Provides connection for firming power from excess gas capacity in northern Maine or from hydropower and other generating resources in eastern Canada
- **Status** - Elective Transmission Upgrade interconnection requests filed with ISO-NE.





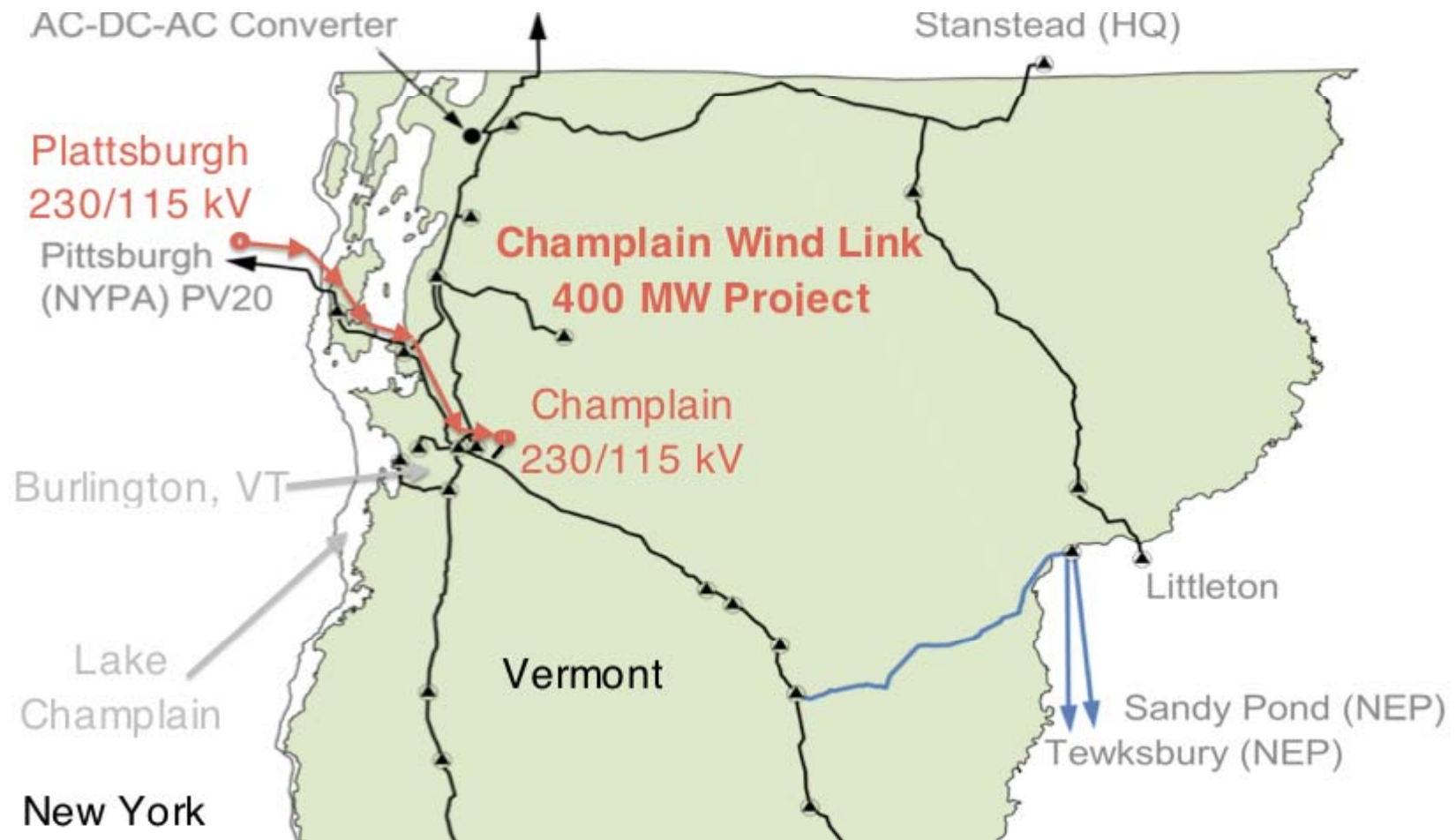
# CHAMPLAIN WIND LINK

A Controllable Transmission System  
Between Plattsburg, NY and  
Burlington, VT

# Development Thesis

- Provides alternative energy and capacity resources capable of economically replacing the closure of Vermont Yankee.
- Local and regional cooperation likely
  - Project can help solve identified reliability problems at no cost to regional rate payers and preclude the need for more expensive rate-based solutions now under consideration in New England
  - Project offers affordable NY generation capacity and energy at the Vermont border
- Helps New England economically meet regional demand for renewable energy
  - Relieving transmission constraints between northern New York and New England will allow NY wind to reach the New England markets;
  - New York wind could be complemented by system energy, hydro, nuclear or natural gas-fired generation to create an affordable bundle of delivered energy and capacity

# Project Geography

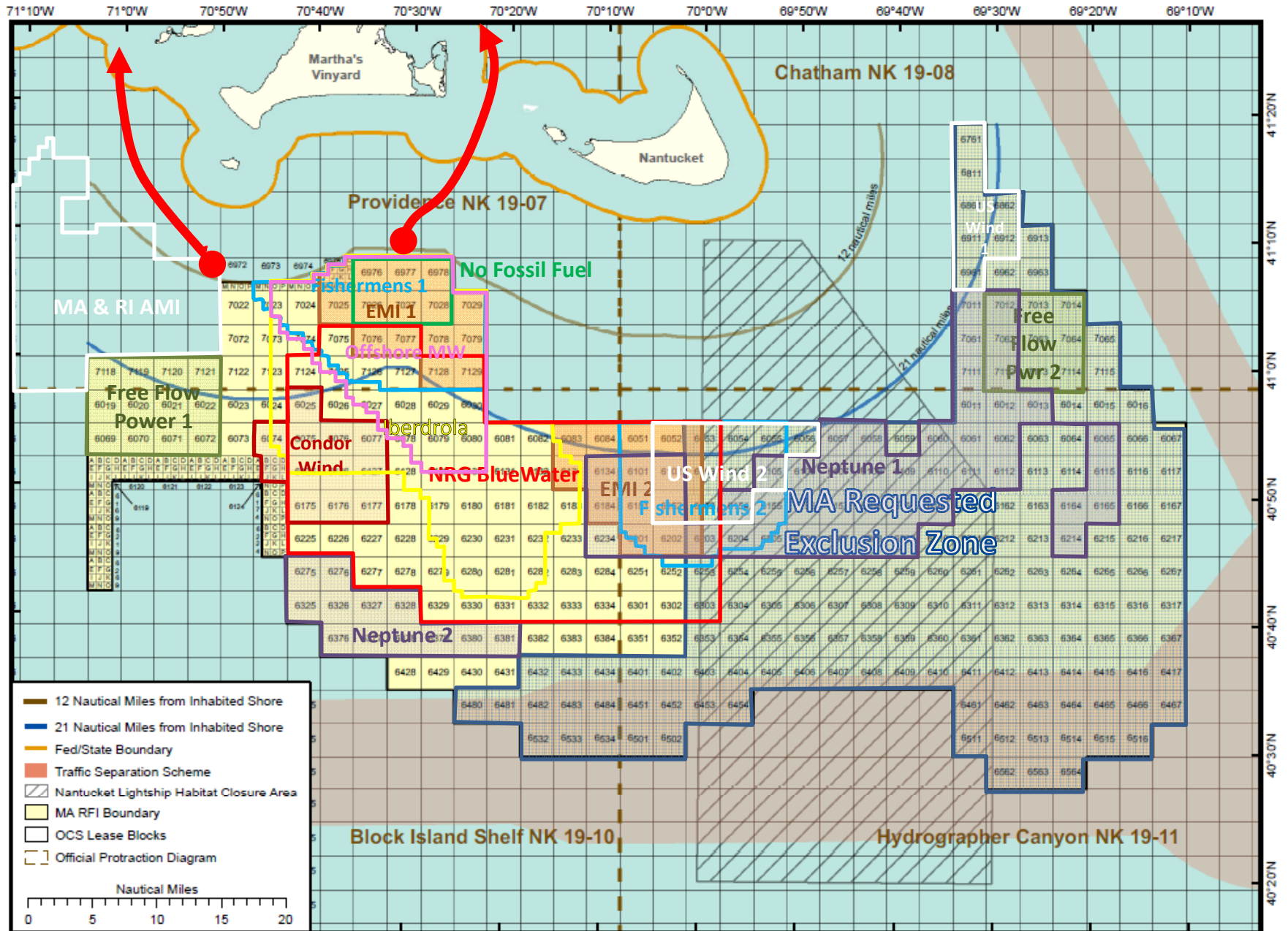


# The Bay State Offshore Renewable Energy Transmission System

# Development Thesis

- Offshore wind is going to take off in the Northeastern United States.
  - In New England, regional RPS requires 500MW of new wind be developed each year through 2020
  - Limited regional terrestrial wind and import options
- Massachusetts is one of several states seeking to develop an offshore wind industry.
  - One project is not enough to create an industry... multiple offshore projects developed in response to a series of competitive procurements would stimulate an industry.
  - Assuming a series of procurements reaching 2000MW, an offshore transmission system is more efficient than individual connections from each wind developer
  - But, Anbaric's focus on a single state -- Massachusetts -- avoids the pitfalls of larger offshore initiatives

# Massachusetts Request for Interest (RFI) Area



# Contact Information

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