



# A Big Step Toward Energy Independence

At IIT , July 20, 2011

Paul McCoy



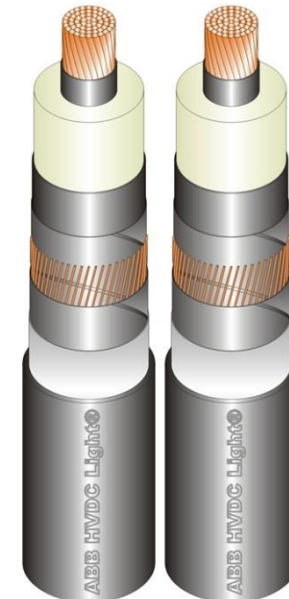
# AWC project overview



- AWC addresses the basic challenge of juggling variable load and variable production of a product that cannot be stored.
- Mid-Atlantic critically congested area
  - Deliver wind energy efficiently
  - Strengthen the regional grid
- 5 project phases
- Up to 7,000 MW of capacity

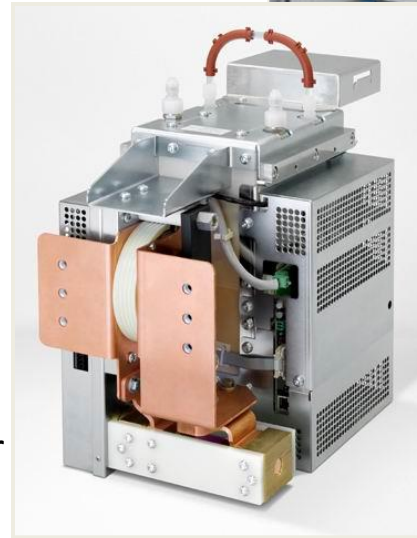
# AWC transmission system components

- Pushing the technical envelope with a multi-terminal HVDC network
  - Buried transmission cable
  - Terrestrial converter stations
  - Offshore converter hub platforms



# High voltage direct current (HVDC) technology

- Interconnected wind farms and converter electronics allow us to balance the variability of offshore wind with conventional power resources
- HVDC technology provides controllability of power flows – meaning that we can direct power to grid connection points where it is most valuable or most needed to support reliability
- Lower sensitivity to distance means that HVDC provides greater siting flexibility for wind farms
- Improvements in converter electronics are expected to reduce converter costs over time



Converter electronics

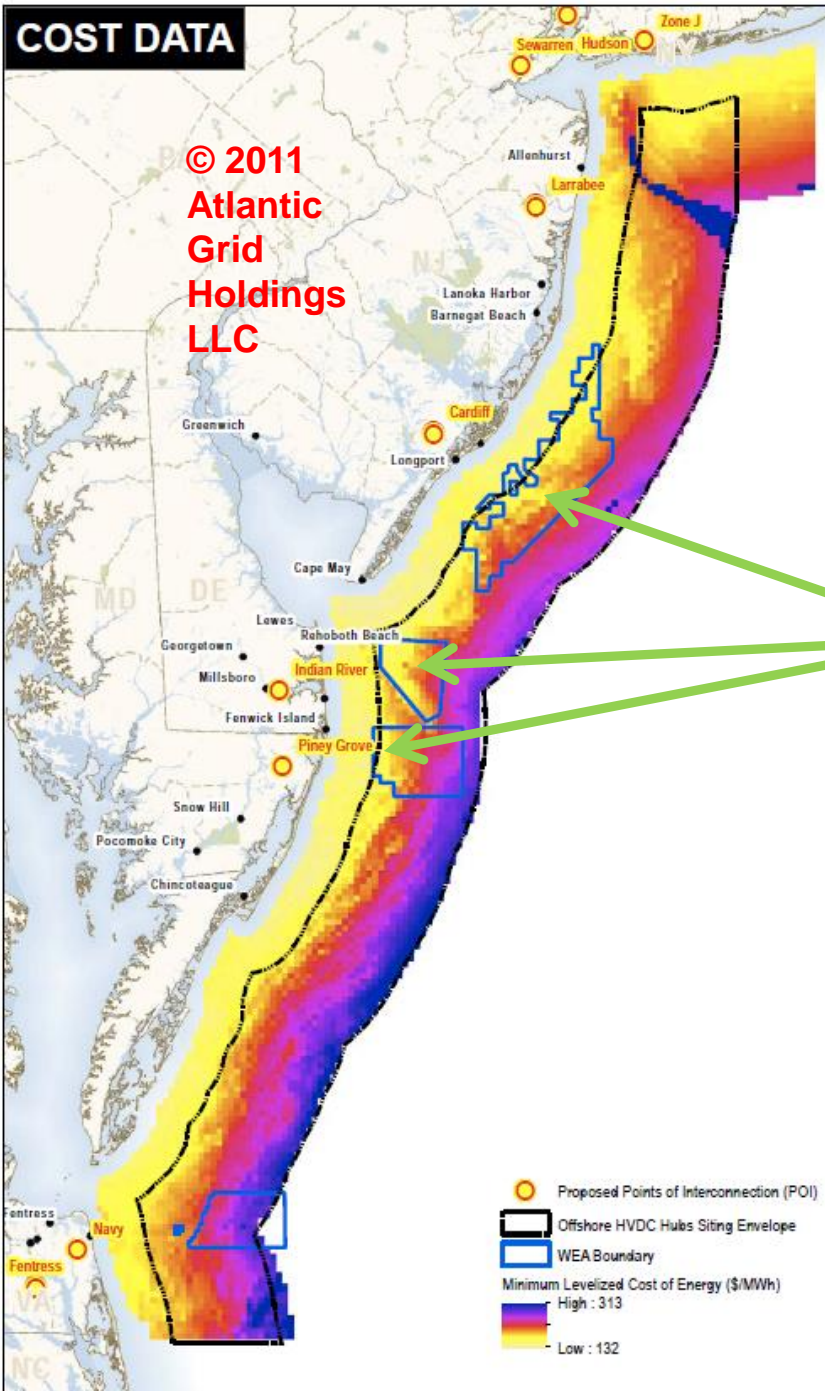


Part of a converter arm

Courtesy of Siemens

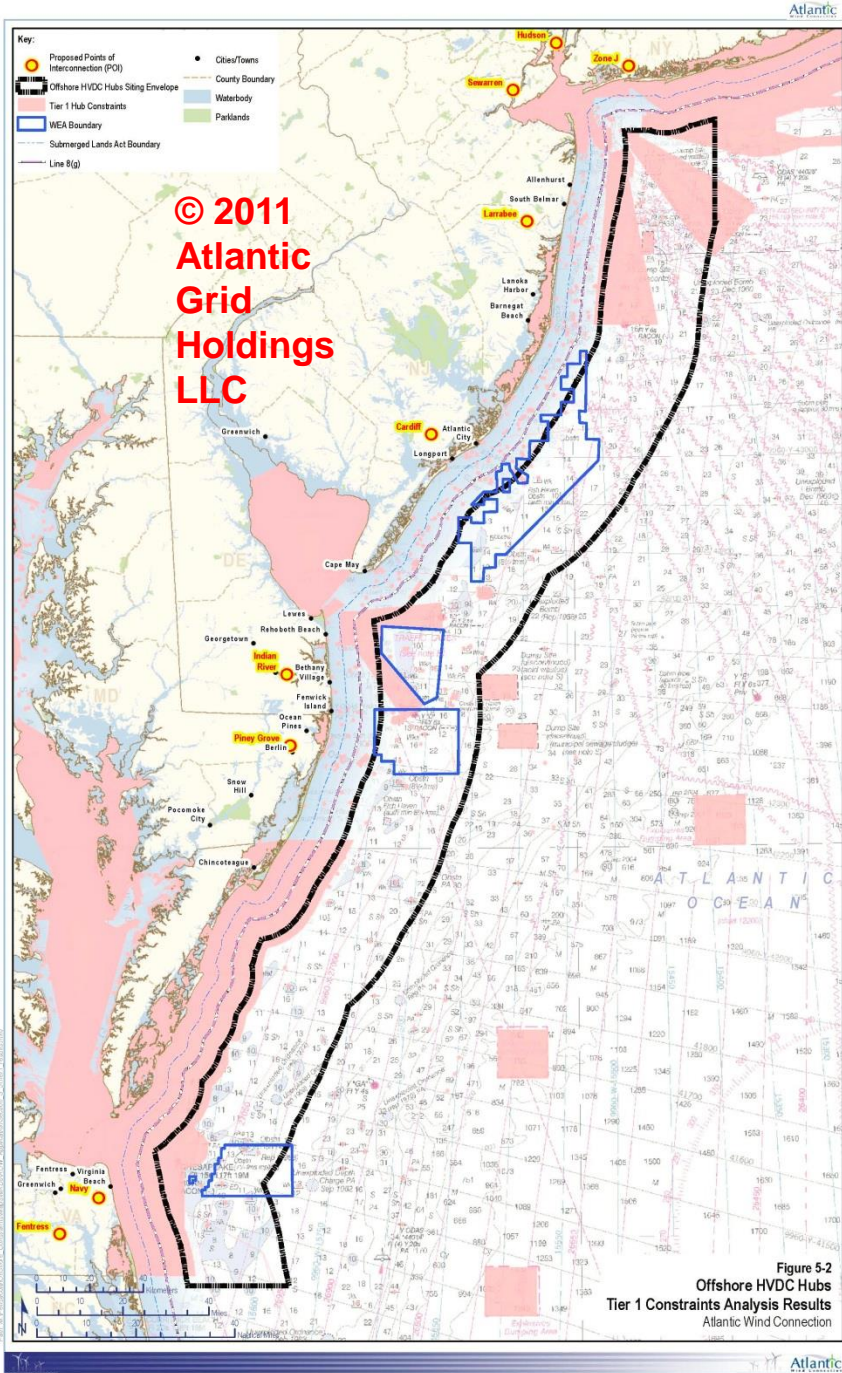


AWC modeled offshore wind energy production costs



- AWC hubs should be close to where wind farms will likely be built.
- The yellow areas are lower cost.
- Given current turbine sizes and cost, water depth drives projects towards the coast.

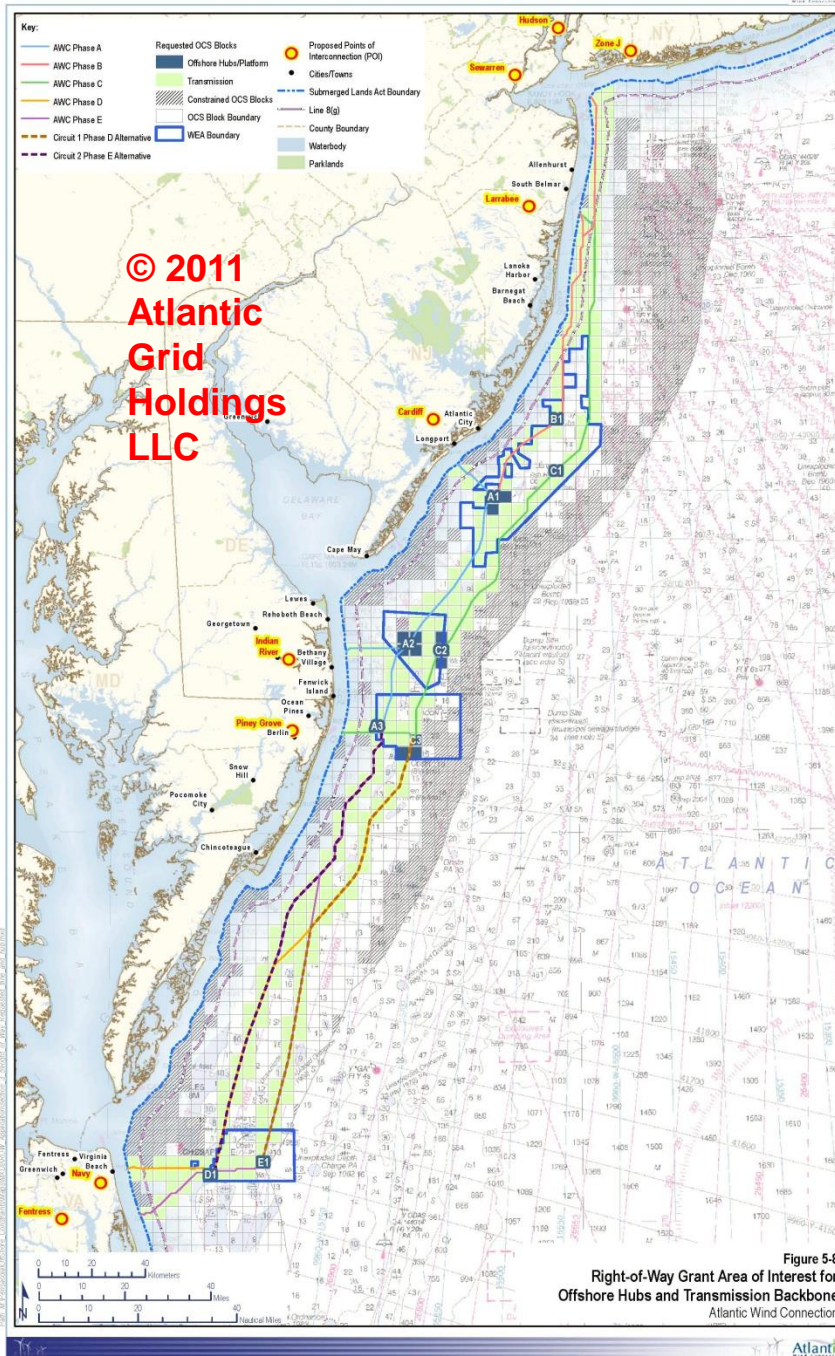
TIER I: uses  
and  
conditions  
that preclude  
wind  
development



- Use Conflict
  - Shipping Lanes / Navigational Channels
  - TSS
  - Submarine Cables
  - Dumping Grounds
  - Fish Havens / Shellfish Harvest & Management Areas
  - Dump Sites
- Air Space Designation
  - VA Capes Operating Area
  - Other Space Designated by FAA & NOAA & NAVY as prohibited, restricted and warning



AWC  
has filed  
with BOEM  
to obtain  
cable ROW  
and hub  
sites



AWC is an integrated system that can be built out in pieces over time.

AWC consists of hubs and cable segments built in phases in concert with offshore wind expansion. This approach results in efficient development of a regional offshore backbone network and predictable interconnection costs for offshore wind projects.







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