* Export the following to shapefile:
  + ventyx.electric\_service\_territories\_20130422
    - 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\original\electric\_service\_territories.shp
  + ventyx.states\_and\_provinces\_20131030
    - 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\original\states\_and\_provinces.shp
  + Some of the subsequent tools will change these files directly, so to be safe, make a second copy of these in another folder:
    - F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\states\_and\_provinces.shp
    - F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\electric\_service\_territories.shp
* In ArcGIS:
  + Run the Integrate tool on both of the copied shapefiles (at the same time):
    - To a tolerance of 0.0005 decimal degrees
  + Extract outer borders from states and provinces as polylines to use as a reference dataset and simplify subsequent snapping :
    - Run Intersect tool on states\_and\_provinces.shp (only), with output type set to "POINT"
      * Produces points at nodes where state borders intersect each other
      * 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\states\_and\_provinces\_vertices.shp
    - Run Polygon to Line to convert states\_and\_provinces.shp to lines
      * 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\states\_and\_provinces\_boundaries.shp
    - Split Lines at Point on output from previous step, using nodes from Intersect as points
      * 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\states\_and\_provinces\_boundaries\_split\_at\_verts.shp
    - Dissolve the output from previous (no multipart)
      * these are the borders
      * 🡪F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\states\_and\_provinces\_borders.shp
  + Import states\_and\_provinces\_borders.shp , plus the Integrated versions of both states\_and\_provinces.shp and electric\_service\_territories.shp to a new geodatabase (to speed up processing)
    - F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\topology.gdb\electric\_service\_territories
    - F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\topology.gdb\states\_and\_provinces
    - F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\topology.gdb\states\_and\_provinces\_borders
  + Using the versions in the gdb, for both states\_and\_provinces and electric\_service\_territories run:
    - Snap Tool (to states\_and\_provinces\_borders feature class with EDGE and distance = 0.005 decimal degrees) (can snap farther than integrate because integrate affects all vertices, whereas snap only affects edges)
      * 🡪 changes are again made to the feature class … so no new output
  + Finally, run Intersect tool between the states\_and\_provinces and electric\_service\_territories feature classes (with an XY tolerance of 0.0005 decimal degrees) (same as Integrate above)
    - 🡪 F:\data\mgleason\DG\_Wind\Data\Analysis\Ventyx\0p0005\_integrate\topology.gdb\electric\_service\_territories\_states\_isect
  + Check results by calculating perimeter to area ratio
    - Ratios are all below 100, which is in the range of legitimate triangular polygons
  + Export to shapefile
    - 🡪Edit the field map to only include all of the original electric service territory fields but only st\_name, st\_abbr, st\_fips, and country from the states and provinces
  + Load to Postgres
    - 🡪ventyx. electric\_service\_territories\_states\_split\_20140224