* Start with **dg\_wind.ventyx\_ests\_2011\_sales\_data\_backfilled**, which was created by joining ventyx electric service territories (split across state boundaries and edited to accommodate PGE weirdness in Bay Area of CA) to ventyx.electric\_utility\_rates\_2011 (which is the retail sales data for 2011), then backfilling service territories and parts of states with no service territories with state-level aggregate remainders from unjoined records in ventyx.electric\_utility\_rates\_2011
* For the service territories which were directly joined to the sales data (i.e., where source = 'Ventyx Sales Data Join') calculate rates in cents per kwh for each customer sector (res, ind, comm) by dividing revenue (in cents) by total sales (in kwh)
  + 🡪 dg\_wind.electricity\_rates\_2011\_backfilled
* For the remaining geometries in **dg\_wind.ventyx\_ests\_2011\_sales\_data\_backfilled**, backfill using the state level rates from eia.table\_4\_rates\_by\_state\_2011
  + 🡪 dg\_wind.electricity\_rates\_2011\_backfilled
* At this point, the service territories should be all filled with rates; however, there will be overlaps between territory polygons. Where overlaps occur, we want to take the average rate of the overlapping service territories’ rates. To do so, use the following process:
  + Export to shapefile and in ArcGIS, convert to a coverage, then back to a shapefile. This eliminates overlaps and produces a single polygon for each overlapping area
    - Coverage 🡪 S:\mgleason\DG\_Wind\Data\Analysis\electricity\_rates\rates\_cov
    - Shapefile 🡪S:\mgleason\DG\_Wind\Data\Analysis\electricity\_rates\ests\_no\_overlaps.shp
  + Delete all columns from the shapefile -- we only care about the geometry
  + Reload the shapefile as dg\_wind.est\_rate\_geoms\_no\_overlaps
  + Add spatial indices to the new table on st centroid and st point on surface
  + Run a spatial join using the intersection between centroids from the dg\_wind.est\_rate\_geoms\_no\_overlaps and the dg\_wind.original electricity\_rates\_2011\_backfilled, then aggregate rates of polygons intersecting the same centroid points using average
    - Use st\_pointonsurface() to ensure that points are inside the no overlap polygons
  + Assign the results of the spatial join aggregation to the geometries of dg\_wind.est\_rate\_geoms\_no\_overlaps, producing:
    - dg\_wind.electricity\_rates\_2011\_backfilled\_no\_overlaps
* Copy the data over to 🡪 wind\_ds\_data.annual\_ave\_elec\_rates\_2011