**ni\_find\_nearest\_nodeB\_to\_nodeA\_using\_nn** – this function finds the closest node of nodeset B to each node in nodeset A. The resulting output table will contain all the attributes of the nodes of nodeset A, as well as:

* Geometry of each node of nodeset A
* PR Key of each node of nodeset A
* Geometry of closest node of nodeset B, to node of nodeset A
* PR Key of closest node of nodeset B, to node of nodeset A
* A straight line between node of nodeset A, and the closest node to it from nodeset B
* The straight line distance between node of nodeset A, and the closest node of nodeset B

**Parameters:**

1) nodeset\_A\_table\_name: string – table name of node set A

2) nodeset\_A\_prkey: string – unique key of node set A

3) nodeset\_A\_geometry\_column\_name: string – column name containing point geometry of nodeset A

4) nodeset\_B\_table\_name: string – table name of node set B

5) nodeset\_B\_prkey: string – unique key of node set B

6) nodeset\_B\_geometry\_column\_name: string – column name containing point geometry of nodeset B

7) output\_table\_name: string – name of the resulting output table

8) add\_to\_geometry\_columns: boolean – indicates whether you wish the output table to be added to the geometry\_columns table, once it has been created.

**e.g. SELECT \* FROM ni\_find\_nearest\_nodeB\_to\_nodeA(‘nodeset\_A’, ‘gid’, ‘geom’, ‘nodeset\_B’, ‘gid’, ‘geom’, ‘closest\_nodeB\_to\_each\_nodeA’, false);**

**SELECT \* FROM ni\_find\_nearest\_nodeB\_to\_nodeA('OS\_WaterPumpingStations', 'gid', 'geom', 'OS\_ElectricitySubStations', 'gid', 'geom', 'closest\_substation\_to\_each\_pumping\_station', false)f( node\_A\_geom geometry, node\_A\_id integer, node\_B\_geom geometry, node\_B\_id integer, node\_AB\_line geometry, st\_distance numeric, gid integer, oid\_ varchar (254), objectid numeric(10,0), unique\_ref numeric(10,0), "name" varchar(254), easting numeric, northing numeric, county varchar(254), postcode varchar(254), geom geometry);**

**Figure.1** illustrates running this operation for the water pumping stations and electricity sub stations in the UK:

The blue dots are the water pumping stations and the yellow dots are the closest electricity sub station to each water pumping station. The red line denotes to which pumping station each sub station is providing power.

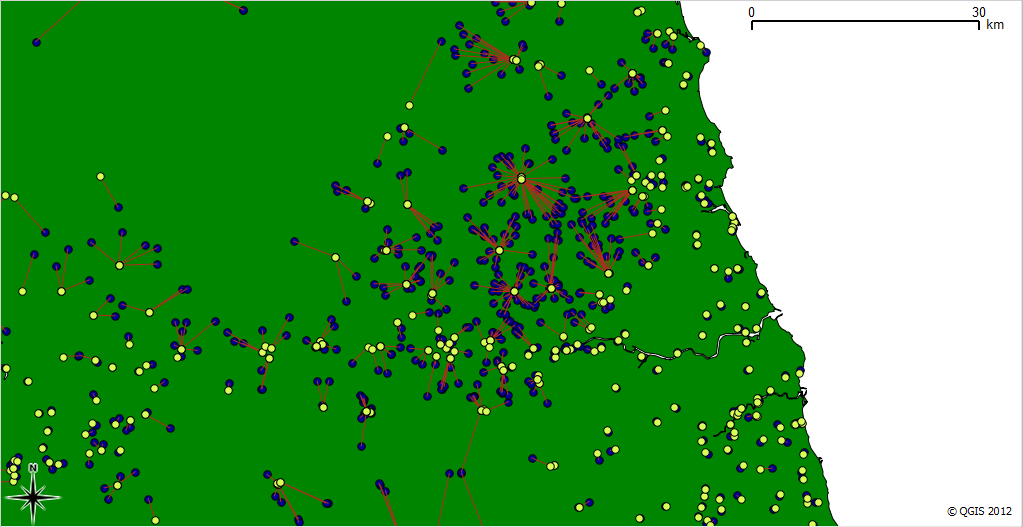


Figure.1 – calculating closest substation to each water pumping station