SQL queries (World electricity analysis): -

---1. Comparison of access to electricity post 2000s in different countries

-- Rural

```
select y_country_name, avg(electricity) as rural_average_usage from

(select y_country_name, electricity  from rural_access

unpivot (electricity for years in (y_2000, y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) as N) as M

group by y_country_name
```

-- Urban

```
select y_country_name, avg(electricity) as urban_average_usage from

(select y_country_name, electricity  from urban

unpivot (electricity for years in (y_2000, y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) as N) as M

group by y_country_name
```

-- Total

```
select y_country_name, avg(electricity) as total_average_usage from

(select y_country_name, electricity  from total

unpivot (electricity for years in (y_2000, y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) as N) as M

group by y_country_name
```

-- 2. every country's performance with respect to the world average for every year. (Total)

```
select y_country_name, y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998,
y_1999, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020 from

(select A.*, B.region, B.incomegroup, B.specialnotes from Total as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.region is not Null or A.y_country_name like '%World%') as N
```

-- (Urban)

```
select y_country_name, y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998,
y_1999, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020 from

(select A.*, B.region, B.incomegroup, B.specialnotes from urban as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.region is not Null or A.y_country_name like '%World%') as N
```

-- (Rural)

```
select y_country_name, y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998,
y_1999, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020 from

(select A.*, B.region, B.incomegroup, B.specialnotes from rural_access as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.region is not Null or A.y_country_name like '%World%') as N
```

-- 3. income wise countries segmentation for electricity utilization (total)

```
select incomegroup, avg(y_2000) as y_2000, avg(y_2001) as y_2001, avg(y_2002) as y_2002,
avg(y_2003) as y_2003, avg(y_2004) as y_2004,

avg(y_2005) as y_2005, avg(y_2006) as y_2006, avg(y_2007) as y_2007, avg(y_2008) as y_2008,
avg(y_2009) as y_2009, avg(y_2010) as y_2010,

avg(y_2011) as y_2011, avg(y_2012) as y_2012, avg(y_2013) as y_2013, avg(y_2014) as y_2014,
avg(y_2015) as y_2015, avg(y_2016) as y_2016,

avg(y_2017) as y_2017, avg(y_2018) as y_2018, avg(y_2019) as y_2019, avg(y_2020) as y_2020 from

(select A.*, B.incomegroup from Total as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by incomegroup

order by avg(y_2000) Desc
```

-- (rural)

```
select incomegroup, avg(y_2000) as y_2000, avg(y_2001) as y_2001, avg(y_2002) as y_2002,
avg(y_2003) as y_2003, avg(y_2004) as y_2004,

avg(y_2005) as y_2005, avg(y_2006) as y_2006, avg(y_2007) as y_2007, avg(y_2008) as y_2008,
avg(y_2009) as y_2009, avg(y_2010) as y_2010,

avg(y_2011) as y_2011, avg(y_2012) as y_2012, avg(y_2013) as y_2013, avg(y_2014) as y_2014,
avg(y_2015) as y_2015, avg(y_2016) as y_2016,

avg(y_2017) as y_2017, avg(y_2018) as y_2018, avg(y_2019) as y_2019, avg(y_2020) as y_2020 from

(select A.*, B.incomegroup from rural_access as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by incomegroup

order by avg(y_2000) Desc
```

-- (Urban)

```
select incomegroup, avg(y_2000) as y_2000, avg(y_2001) as y_2001, avg(y_2002) as y_2002,
avg(y_2003) as y_2003, avg(y_2004) as y_2004,

avg(y_2005) as y_2005, avg(y_2006) as y_2006, avg(y_2007) as y_2007, avg(y_2008) as y_2008,
avg(y_2009) as y_2009, avg(y_2010) as y_2010,

avg(y_2011) as y_2011, avg(y_2012) as y_2012, avg(y_2013) as y_2013, avg(y_2014) as y_2014,
avg(y_2015) as y_2015, avg(y_2016) as y_2016,

avg(y_2017) as y_2017, avg(y_2018) as y_2018, avg(y_2019) as y_2019, avg(y_2020) as y_2020 from

(select A.*, B.incomegroup from urban as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by incomegroup

order by avg(y_2000) Desc
```

-- 4 A chart to depict the increase in the count of countries with greater than 75% electricity access in rural areas across different year

-- (total)

```
select SUBSTRING(years, 3,4) as years, sum(new) as country_count from

(select years, case when electricity > 75 then 1 else 0 end new from

(select A.*, B.region, B.incomegroup, B.specialnotes from Total as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and B.region is not null) as N

unpivot

(electricity for years in (y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998,
y_1999, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) m) o

 group by SUBSTRING(years, 3,4)

 order by SUBSTRING(years, 3,4)
```

-- (urban)

```
 select SUBSTRING(years, 3,4) as years, sum(new) as country_count from

(select years, case when electricity > 75 then 1 else 0 end new from

(select A.*, B.region, B.incomegroup, B.specialnotes from urban as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and B.region is not null) as N

unpivot

(electricity for years in (y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998,
y_1999, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) m) o

 group by SUBSTRING(years, 3,4)

 order by SUBSTRING(years, 3,4)
```

-- (rural)

```
select SUBSTRING(years, 3,4) as years, sum(new) as country_count from
(select years, case when electricity > 75 then 1 else 0 end new from
(select A.*, B.region, B.incomegroup, B.specialnotes from rural_access as A
full outer join metadata_country as B on A.y_country_code = B.country_code
where B.tablename is not Null and B.region is not null) as N
unpivot
(electricity for years in (y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998, y_1999, y_2000,
y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,
y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020)) m) o
group by SUBSTRING(years, 3,4)
order by SUBSTRING(years, 3,4)
```

--5 A way/KPI to present the evolution of nuclear power presence grouped by Region and income group.

-- income-wise electricity utilization by nuclear energy

```
select incomegroup,  avg(y_1990) as y_1990,  avg(y_1991) as y_1991,  avg(y_1992) as y_1992,
avg(y_1993) as y_1993,

avg(y_1994) as y_1994, avg(y_1995) as y_1995, avg(y_1996) as y_1996, avg(y_1997) as y_1997,
avg(y_1998) as y_1998,

avg(y_1999) as y_1999, avg(y_2000) as y_2000, avg(y_2000) as y_2000, avg(y_2001) as y_2001,
avg(y_2002) as y_2002,

avg(y_2003) as y_2003, avg(y_2004) as y_2004, avg(y_2005) as y_2005, avg(y_2006) as y_2006,
avg(y_2007) as y_2007,

avg(y_2008) as y_2008, avg(y_2009) as y_2009, avg(y_2010) as y_2010, avg(y_2011) as y_2011,
avg(y_2012) as y_2012,

avg(y_2013) as y_2013, avg(y_2014) as y_2014 from

(select A.*, B.region, B.incomegroup, B.specialnotes from nuclear as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by incomegroup

order by avg(y_2000) Desc
```

-- region-wise electricity utilization by nuclear energy

```
select region,  avg(y_1990) as y_1990,  avg(y_1991) as y_1991,  avg(y_1992) as y_1992,  avg(y_1993)
as y_1993,

avg(y_1994) as y_1994, avg(y_1995) as y_1995, avg(y_1996) as y_1996, avg(y_1997) as y_1997,
avg(y_1998) as y_1998,

avg(y_1999) as y_1999, avg(y_2000) as y_2000, avg(y_2000) as y_2000, avg(y_2001) as y_2001,
avg(y_2002) as y_2002,

avg(y_2003) as y_2003, avg(y_2004) as y_2004, avg(y_2005) as y_2005, avg(y_2006) as y_2006,
avg(y_2007) as y_2007,

avg(y_2008) as y_2008, avg(y_2009) as y_2009, avg(y_2010) as y_2010, avg(y_2011) as y_2011,
avg(y_2012) as y_2012,

avg(y_2013) as y_2013, avg(y_2014) as y_2014 from

(select A.*, B.region, B.incomegroup, B.specialnotes from nuclear as A
```

```
full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by region

order by avg(y_2000) Desc
```

-- income-wise electricity utilization by oil

```
select incomegroup,  avg(y_1990) as y_1990,  avg(y_1991) as y_1991,  avg(y_1992) as y_1992,
avg(y_1993) as y_1993,

avg(y_1994) as y_1994, avg(y_1995) as y_1995, avg(y_1996) as y_1996, avg(y_1997) as y_1997,
avg(y_1998) as y_1998,

avg(y_1999) as y_1999, avg(y_2000) as y_2000, avg(y_2000) as y_2000, avg(y_2001) as y_2001,
avg(y_2002) as y_2002,

avg(y_2003) as y_2003, avg(y_2004) as y_2004, avg(y_2005) as y_2005, avg(y_2006) as y_2006,
avg(y_2007) as y_2007,

avg(y_2008) as y_2008, avg(y_2009) as y_2009, avg(y_2010) as y_2010, avg(y_2011) as y_2011,
avg(y_2012) as y_2012,

avg(y_2013) as y_2013, avg(y_2014) as y_2014 from

(select A.*, B.region, B.incomegroup, B.specialnotes from oil as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by incomegroup

order by avg(y_2000) Desc
```

-- region-wise electricity utilization by oil

```
select region,  avg(y_1990) as y_1990,  avg(y_1991) as y_1991,  avg(y_1992) as y_1992,  avg(y_1993)
as y_1993,

avg(y_1994) as y_1994, avg(y_1995) as y_1995, avg(y_1996) as y_1996, avg(y_1997) as y_1997,
avg(y_1998) as y_1998,

avg(y_1999) as y_1999, avg(y_2000) as y_2000, avg(y_2000) as y_2000, avg(y_2001) as y_2001,
avg(y_2002) as y_2002,
```

```
avg(y_2003) as y_2003, avg(y_2004) as y_2004, avg(y_2005) as y_2005, avg(y_2006) as y_2006,
avg(y_2007) as y_2007,

avg(y_2008) as y_2008, avg(y_2009) as y_2009, avg(y_2010) as y_2010, avg(y_2011) as y_2011,
avg(y_2012) as y_2012,

avg(y_2013) as y_2013, avg(y_2014) as y_2014 from

(select A.*, B.region, B.incomegroup, B.specialnotes from oil as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null) as N

where incomegroup is not null

group by region

order by avg(y_2000) Desc
```

--6 A chart to present the production of electricity across different sources (nuclear, oil, etc.) as a function of time

```
select y_country_name, y_indicator_name ,y_1971, y_1972, y_1973, y_1974, y_1975, y_1976,
y_1977, y_1978, y_1979, y_1980,y_1981, y_1982, y_1983, y_1984, y_1985, y_1986, y_1987, y_1988,
y_1989,

 y_1990,y_1991, y_1992, y_1993, y_1994, y_1995, y_1996, y_1997, y_1998, y_1999,

y_2000, y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015 from

(select * from nuclear

union

select * from oil

union

select *, 8.25 as y_2015  from power_loss) as N
```

-- new table with all three composite data (rural, urban and total)

```
select * into composite from

(select A.*, B.region, B.incomegroup from rural_access as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and B.region is not null

union

select A.*, B.region, B.incomegroup from Urban as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and B.region is not null

union

select A.*, B.region, B.incomegroup from Total as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and B.region is not null) as N
```

--Average percent of the population utilize electricity (groups of countries)

```
select A.y_Country_Name, y_2000,

y_2001, y_2002, y_2003, y_2004, y_2005, y_2006, y_2007, y_2008, y_2009, y_2010,

 y_2011, y_2012, y_2013, y_2014, y_2015, y_2016, y_2017, y_2018, y_2019, y_2020, B.specialnotes
from Total as A

full outer join metadata_country as B on A.y_country_code = B.country_code

where B.tablename is not Null and region is null
```