Data Warehouse Outline

STAR SCHEMA:
- 2 Fact Tables
    - Renewable Output – Renewable Electricity Dataset
    - Power Generation – Power Generation by Fuel Source Dataset
- 4 Dimension Tables
    - Date – Derived (Synthetic)
    - Geography – Renewable Electricity Dataset
    - Fuel Source – Power Generation by Fuel Source Dataset
    - Air Temperature – Average Mean Surface Air Temperature Dataset
- *Should we just modify the tables to have 1990 - 2023? For consistency reasons*

Fact Tables

RENEWABLE_OUTPUT (Primary)			
Attributes	Data Type	Key	Description
dateKey	INT	PK/FK	FK to DIM_DATE
geoKey	INT	PK/FK	FK to DIM_GEO
tempKey	INT	PK/FK	FK to DIM_TEMP
renewOutPct	DECIMAL(17, 15)	-	Renewable Electricity output as %

FUEL_GENERATION (Secondary)			
Attributes	Data Type	Key	Description
dateKey	INT	PK/FK	FK to DIM_DATE
fuelKey	INT	PK/FK	FK to DIM_FUEL_SOURCE
tempKey	INT	PK/FK	FK to DIM_TEMP
powGenGWH	INT	-	Power generation in

			Megawatt-hours (GWh) by fuel source

Dimension Tables

DIM_DATE			
Attributes	Data Type	Key	Description
dateKey	INT	Primary	Surrogate Key (Auto-INC)
calendarYear	INT	-	Year

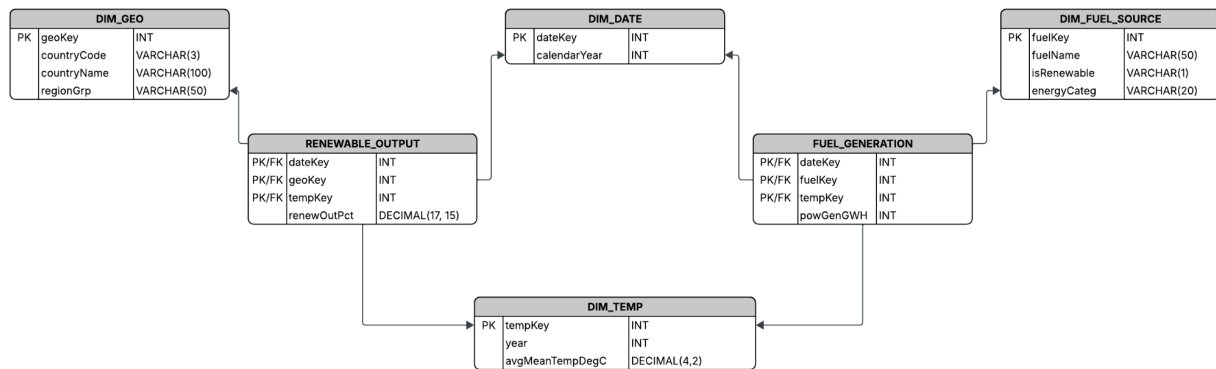| DIM_GEO			
Attributes	Data Type	Key	Description
geoKey	INT	Primary	Surrogate Key (Auto-INC)
countryCode	VARCHAR(3)	-	Country Code (PH, USA, etc.)
countryName	VARCHAR(100)	-	Full Country Name
regionGrp	VARCHAR(50)	-	Denormalized high-level grouping (Arab World, Sub-Saharan Africa, etc.)

DIM_FUEL_SOURCE			
Attributes	Data Type	Key	Description
fuelKey	INT	Primary	Surrogate Key (Auto-INC)
fuelName	VARCHAR(50)	-	Energy Source Name
isRenewable	VARCHAR(1)	-	Yes (Y) or No (N)
energyCateg	VARCHAR(20)	-	Broad Categorization (Fossil, Renewable,

			Nuclear, etc.)

DIM_TEMP			
Attributes	Data Type	Key	Description
tempKey	INT	Primary	Surrogate Key (Auto-INC)
year	INT	-	Year
avgMeanTempDegC	DECIMAL(4, 2)	-	Average Mean Surface Air Temperature in Celsius

SCHEMA VISUALIZATION:

APPLICATION TO REPORTS:

1. Energy Mix Comparison with Other Countries
   - Fact Table(s): RENEWABLE_OUTPUT
   - Dimension Table(s): DIM_DATE & DIM_GEO

2. Energy Generation vs. Weather
   - Fact Table(s): FUEL_GENERATION
   - Dimension Table(s): DIM_DATE, DIM_FUEL_SOURCE, & DIM_TEMP

3. Seasonal Energy Patterns
   - Fact Table(s): FUEL_GENERATION
   - Dimension Table(s): DIM_DATE & DIM_FUEL_SOURCE

4. Trends in Renewable vs. Non-Renewable Energy Sources in the Philippines (2000 - 2020)
   - Fact Table(s): FUEL_GENERATION
   - Dimension Table(s): DIM_DATE & DIM_FUEL_SOURCE

5. Philippines' Total Energy Generation and Mix Composition
   - Fact Table(s): FUEL_GENERATION
   - Dimension Table(s): DIM_DATE & DIM_FUEL_SOURCE