**PEFA exercise instructions**

*Compiling a supply and use table*

Compile a supply and use table for the hypothetical situation below. In this scenario, the country uses both renewable and non-renewable natural energy inputs. The country also supplies and uses a variety of energy products (crude, coal, electricity, heat, etc) and also exports energy products.

1. The mining industry extracts 150 PJ of coal.
   * The mining industry loses 10 PJ of coal during extraction and transportation*.*
   * Eighty percent of the remaining coal is used by coal power plants; twenty percent is exported.
2. The coal power plant converts the coal from the mining industries to energy and heat, producing 75 PJ of electricity and 25 PJ of heat. Losses during transformation account for the rest of the coal supply*.*
3. In addition, according to the Ministry of Energy, 60 PJ of electricity are generated from renewable sources (50% from wind, 50% from solar).
4. The resulting electricity from solar, wind and coal is used as follows:
   * Agriculture 38 PJ

* Mining 15 PJ
* Manufacturing 20 PJ
* Electricity 32 PJ
* Households consume the rest of the electricity.

1. For heating:

* Households use 20 PJ of heat
* Electricity sector uses 2 PJ
* Mining uses the rest of heating

1. In addition to coal, 500 PJ of crude is extracted from domestic deposits.
   * 10 percent of crude is lost for various reasons during its extraction.
   * Crude is transformed into naptha (for plastics) and kerosene.
   * Eighty percent of the remaining crude is transformed by refineries into kerosene for use by households.
   * Twenty percent of the remaining crude is transformed into naptha for plastics*.*
2. According to the Ministry of Forestry, fuelwood is cut down by logging companies and households:
   * Logging companies cut down 50 PJ of fuel wood
   * Households also cut down 50 PJ of fuel wood.

All of the fuelwood is used by households for cooking.

*Deriving indicators*

*Calculate the following:*

* Gross energy input for the country
* Net domestic energy use by industry and for the country
* Using the below table for value added (in millions of dollars), calculate the energy efficiency of each industry in **MJ/$.**

|  |  |  |  |
| --- | --- | --- | --- |
| ISIC A | ISIC B | ISIC C | ISIC D |
| 3600.34 | 6264.16 | 13264.6 | 4153.73 |

*How would you explain or interpret these indicators?*