ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on Transport Statistics

Informal Meeting on Transport Statistics through Pipelines

REPORT OF THE INFORMAL MEETING

ON TRANSPORT STATISTICS THROUGH PIPELINES

ATTENDANCE

1. The Informal Meeting on Transport Statistics through Pipelines was held in Geneva (Palais des Nations) from 3 to 4 April 2008.

2. Representatives of the following UNECE member States participated: Czech Republic, Denmark, Germany, Poland and Turkey. The UNECE secretariat, DG TREN and Eurostat from the European Commission were also represented.

ELECTION OF CHAIRMAN

3. The Meeting elected Mr. Erik GRIB (Denmark) as the Chairman.

ADOPTION OF AGENDA

4. The Meeting adopted the provisional agenda prepared by the secretariat.

REVIEW OF THE PRESENT STATISTICS OF TRANSPORT THROUGH PIPELINES

5. Delegates informed the Meeting on the availability of statistical data of transport through pipelines in their countries. It was also discussed the replies to the Pilot questionnaire on transport of gas through pipelines, circulated by the WP.6.

7. A member of the UNECE secretariat (Sustainable Energy Division) informed the Meeting of the UNECE activities related to gas. He indicated various sources of international statistical data on gas and underlined problems in obtaining reliable and harmonized data at the international level.

8. The Meeting discussed the present statistics about transport in oil pipelines and decided to propose to the WP.6 to keep for the time being the questionnaire of oil

pipelines as it is in the Common Questionnaire. Eurostat/IWG will present the outcome of the data collection via the Common Questionnaire at in the meeting of WP.6 in 2009.

9. With regard to transport of gas in pipelines it was decided to propose to WP.6 to include in the Common Questionnaire a new part related to gas pipelines, comparable to the existing questionnaire of oil pipelines.

10. The Meeting considered a draft pipeline chapter (4th edition of the Glossary of transport statistics) and proposed additional changes to the chapter (see annex to this report).

11. It was also proposed to update references to ISIC and NACE in D.III and to include new definitions for types of goods transported in pipelines (crude oil, refined oil, etc.).

12. An updated draft chapter will be discussed during the next session of WP.6 in May 2008 together with the other draft chapters of the Glossary.

Annex :

D

PIPELINE TRANSPORT

D.I/II. INFRASTRUCTURE/ TRANSPORT EQUIPMENT

D.I/II-01. **~~Oil pipelines~~ Pipelines**

~~Pipes for the movement of crude or refined liquid petroleum products by pumping.~~
A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids by pumping or compression.

Only units which actually carry out an activity during the reference period should be considered. "Dormant" units or those not yet having begun their activity are excluded.

D.I/II-02. **Pipeline Facility**:

New and existing piping, rights-of-way, and any equipment, facility, or building used in the transportation of gas, hazardous liquids, or carbon dioxide, or in the treatment of gas during the course of transportation.

D.I/II-03. Pipeline network

All ~~oil~~ pipelines in a given area.

Pipelines on the seabed are included.

D.I/II-04. Oil pipeline:

All parts of a pipeline facility through which oil or petroleum products move, including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks

D.I/II-05. **Gas Pipeline:**

All parts of the pipe conduit, complete with such equipment as valves, compressor stations, communications systems, and meters for transporting natural and/or supplemental gas from one point to another, usually from a point in or beyond the producing field or processing plant to another pipeline or to points of utilization.

D.I/II-06. Types of oil and gas pipelines

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D.I/II-03. Types of pipelines¶
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In general, pipelines can be classified in three main categories depending on its main purpose, the categories are as follows:¶
¶
1. Gathering Pipelines ¶
Group of smaller interconnected pipelines forming complex networks with the main purpose of bringing crude oil or natural gas from several nearby wells to a treatment plant or processing facility.¶
¶
In this group, pipelines are usually short, couple of hundred of meters, and with small diameters. Also sub-sea pipelines for collecting product from deep water production platforms are considered gathering systems.¶
¶
2. Transportation Pipelines (Trunk pipelines)¶
Mainly long pipes with large diameters, moving products (oil, gas, refined products) between cities, countries and even continents. These transportation networks include several compressor stations in gas lines or pump stations for crude and multiproducts pipelines.¶ ... [1]

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Deleted: **D.I/II-06. Pipeline network**¶
¶
All ~~oil~~ pipelines in a given area.¶
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The territory of the area in question includes that part of the seabed allocated to it under a concession.¶

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3. Distribution Pipelines

Composed of several interconnected pipelines with small diameters, used to take the products to the final consumer.

Basically, feeder lines to distribute gas to homes and businesses downstream, or pipelines at terminals to distribute final products to tanks and storage facilities are included in this group.

~~**D.I/II-03. Carrying capacity of an oil pipeline**~~

~~Maximum tonnage of products that the oil pipeline may move during the given period.~~

~~*The carrying capacity of an pipeline is generally measured in terms of "thousand barrels a day". In converting barrels to tones, the conversion factor for crude oil is: 1 tonne = 7.55 barrels (there is a slight variation according to the type of crude). For petroleum products conversion factor is: 1 tonne = 7.5 barrels.*~~

D.III. ENTERPRISES, ECONOMIC PERFORMANCE AND EMPLOYMENT

D.III-01. Enterprise

Institutional unit or smallest combination of institutional units that encloses and directly or indirectly controls all necessary functions to carry out its production activities[1].

The requirements of an enterprise are that it has one ownership or control. It can, however, be heterogeneous with regard to its economic activity as well as to its location.

~~**D.III-02. Oil pipeline enterprise**~~
~~**D.III-03. Public oil pipeline transport enterprise**~~

D.III-02. Pipeline transport enterprise

Enterprise formed to carry out in one or more places activities for the production of oil or gas pipeline transport services and whose main activities according to the value-added is transport by oil or gas pipelines.

In terms of activity classifications the following classes are involved:
-- ISIC/Rev.3[2]: 6030 - Transport via pipelines.
-- NACE/Rev.1[3]: 60.30 - Transport via pipelines.

D.III-03. Public pipeline transport enterprise

An oil or gas pipeline enterprise which is principally owned (more than 50 per cent of the capital) by the State or public authorities and their enterprises.

D.III-04 Employment

Average number of persons working during the given period in ~~an oil~~ a pipeline transport enterprise and persons working outside the enterprise but who belong to it and are directly paid by it.

D.III-05. Turnover

Total amount invoiced by the ~~oil~~ pipeline transport enterprise during the period under review. This corresponds to market sales of goods or services supplied to third parties. Turnover includes all duties and taxes on the goods or services invoiced by the enterprise with the exception of VAT invoiced by the unit vis-à-vis its customers. It also includes all other charges to the customers. Reductions in prices, rebates and discounts must be deducted, but not cash discounts.

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1 ISIC/Rev.3 - International Standard Industrial Classification of All Economic Activities, Statistical Papers, Series M, No.4, Rev.3, United Nations, 1990.

2 ISIC/Rev.3 - International Standard Industrial Classification of All Economic Activities, Statistical Papers, Series M, No.4, Rev.3, United Nations, 1990.

3 NACE/Rev.1 - Statistical Classification of Economic Activities in the European Communities, Official Journal, No. L 83, 3 April 1993.

Turnover does not include sales of fixed assets. Operating subsidies received from public authorities are also excluded.

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D.III-06. Revenues

Amounts expressed in monetary units which are entered in the accounts as credit to the oil pipeline transport enterprise.

D.III-07. Types of revenues

The main categories of revenues to be considered are:

Revenues from transport operations

Amounts received from the State or other public bodies
This category includes compensation receipts and other subsidies.

Other revenues
This category includes revenues not related to oil pipeline transport activities, e.g. financial revenues, etc.

D.III-08. Costs

The amount of available resources spent by the oil a pipeline transport enterprise in conjunction with an operation or service, or with a series of operations and services.

D.III-09 . Types of costs

The main categories of costs to be considered are:

- Labour costs
- *Including wages and salaries of active staff, pensions, various social charges, etc.*
-
- Material and service costs
- *Including purchases of other material and services supplied by third parties, but excludes energy consumption cost.*
-
- Energy consumption costs
-
- Taxes
-
- Financial charges
-
- Other costs
- *Including amounts allocated to depreciation and provisions, etc.*

D.III-10 . Value added

Gross output of the oil pipeline transport enterprise less the value of its intermediate consumption. Value added of domestic production of all oil pipeline transport enterprises in a country is equal to their contribution to the GDP of that country.

~~*It is understood that Value Added, in this context, is expressed in market prices.*~~

~~**D.III-11 . Tangible investment**~~

~~The outlay (purchases and own account production) of oil by pipeline transport enterprises on additions of new and used capital goods (commodities) to their stocks of fixed capital assets less their net sales of similar second-hand and scrapped goods.~~
~~*The contribution of all oil pipeline transport enterprises to the gross fixed capital formation of a country is equal to the total of their tangible investment less the balance between the purchase and sale of land.*~~

D.III-06. Investment expenditure on infrastructure

Expenditure on new construction, extension of existing infrastructure, including reconstruction, renewal and major repairs.

Expenditure on pumping and compression facilities is included.

D.III-07. Maintenance expenditure on infrastructure

Expenditure for keeping infrastructure in working order.

Expenditure on pumping and compression facilities is included.

D.IV/V. TRAFFIC/ TRANSPORT MEASUREMENT

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D.IV/V-01. ~~Oil pipeline~~Pipeline transport

Any movement of crude or refined liquid petroleum products or gases in a given ~~oil~~ pipeline network.

D.IV/V-02. National oil pipeline transport

Oil pipeline transport between two places (a pumping-in place and a pumping-out place) located in the same country or in that part of the seabed allocated to it. It may involve transit through a second country~~measured in tonnes (t)~~.

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D.IV/V-03. National gas pipeline transport

Gas pipeline transport between two places (an initial compression facility and a decompressing facility) located in the same country or in that part of the seabed allocated to it. It may involve transit through a second country ~~measured in million cubic meters Mm^3~~.

D.IV/V-04. International oil pipeline transport

Oil pipeline transport between two places (a pumping-in place and a pumping-out place) located in two different countries or on those parts of the seabed allocated to them. It may involve transit through one or more additional countries ~~measured in tonnes (t)~~.

D.IV/V-05. International gas pipeline transport

Gas pipeline transport between two places (an initial compression facility and a decompressiong facility) located in two different countries or on those parts of the seabed allocated to them. It may involve transit through one or more additional countries ~~measured in million cubic meters Mm3.~~

D.IV/V-06. Transport capacity of a pipeline

Maximum tonnage of product that the pipeline is able move during a given period.

D.IV/V-07. Goods transported by pipeline

Any gas or crude or refined liquid petroleum products moved by pipelines.

D.IV/V-08. Tonne-kilometre by pipeline

Unit of measure of transport which represents transport of one tonne of goods by pipeline over one kilometre.

The distance taken into account is the distance actually run.

~~**D.IV/V-09. Types of goods transported by oil**~~

~~**D.IV/V-10 Tonne-kilometre offered.**~~

~~Unit of measure representing the transport~~

~~**D.IV/V-10. Carrying capacity of an oil or gas pipeline**measured by the movement over one kilometre of a tonne of goods that can be transported by oil pipeline during the given period.~~

~~Maximum volume of products that can be transported by an oil or gas pipeline, measured in tonne kilometres (oil) or cubic metre kilometres (gas).~~

D.IV/V-11. Goods having left the country by ~~oil~~ pipeline (other than goods in transit by oil pipeline throughout)

Goods which, having been ~~pumped~~loaded into ~~an oil~~ a pipeline by pumping or compression in ~~the~~one country or that part of the seabed allocated to it, left the country by ~~oil~~ pipeline and were ~~pumped out~~ delivered in another country.

D.IV/V-12. Goods having entered the country by ~~oil~~ pipeline (other than goods in transit by oil pipeline throughout)

Goods which, having been ~~pumped~~loaded into ~~an oil~~ a pipeline by pumping or compression in another country or that part of the seabed allocated to it, entered the country by oil pipeline and were ~~pumped out~~ delivered there.

D.IV/V-13. Goods in transit by ~~oil~~ pipeline ~~throughout~~

Goods which entered the country by ~~oil~~ pipeline and left the country by ~~oil~~ pipeline at a point different from the point of entry, after having been transported across the country solely by ~~oil~~ pipeline.

Goods which entered and/or left the country in question by vessels ~~after pumping Into/pumping out of an oil~~before loading into by pumping or compression or after delivery from a pipeline at the frontier are included.

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The carrying capacity of a gas pipeline is generally measured in "million cubic metres per day".¶

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~~. The categories of goods carried by oil pipeline are those defined by the NST/R nomenclature (Standard Goods Nomenclature for Transport Statistics/revised - Eurostat) or CSTE nomenclature (Commodity Classification for Transport Statistics in Europe - UNECE)~~Unit of measure of transport which represents the transport of one cubic metre of gas by gas pipeline over one kilometre.¶
¶
. *The distance taken into account is the distance actually run.*¶

D.IV/V-14. Goods ~~oil~~ pipeline transport link

The combination of the ~~pumping in~~loading place by pumping or compression and the ~~pumping out~~delivery place of the goods transported by ~~oil~~ pipeline whichever itinerary is followed.

Places are defined by using international classification systems such as NUTS (Nomenclature of Territorial Units for Statistics - Eurostat).

D.IV/V-15~~. Pumping in~~15. Location of the initial pumping-in or compression station place

The place taken into account is the place at which the goods were first pumped-in or first compressed into a~~n oil~~ pipeline.

D.IV/V-16. Pumping-~~out~~out or gas delivery place

The place taken into account is the place at which the goods were pumped out ~~of an oil~~or gas delivered from a pipeline.

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D.VI. ENERGY CONSUMPTION

D.VI-01. Energy consumed for transport by oil pipeline

Final energy consumed for movement of products by oil pipeline.

D.VI-02. Tonne of oil equivalent (TOE)

Unit of measurement of energy consumption : 1 TOE = 0.041868 TJ.

Conversion factors adopted by the International Energy Agency (IEA) for 1991 are as follows:

-- Motor gasoline 1.070
-- Gas/diesel oil 1.035
-- Heavy fuel oil 0.960
-- Liquefied petroleum gas 1.130
-- Natural gas 0.917

The conversion factor used by the IEA for electricity is: 1 TWh = 0.086 Mtoe.

D.VI-03 Joule

Unit of measurement of energy consumption:
1 terajoule = 10^{12}J = 2.78 x 10^{5} kWh.
1 terajoule = 23.88459 TOE.

D.VI-04. Motor gasoline (petrol)

Light hydrocarbon oil for use in internal combustion engines, excluding those in aircraft.

Motor gasoline is distilled between 35oC and 215oC and treated by reforming, catalytic cracking or blending with an aromatic fraction to reach a sufficiently high octane number (>80 RON).

Calorific value: 44.8 TJ/1 000 t.

D.VI-05. Gas/diesel oil (distillate fuel oil)

Oil obtained from the lowest fraction from atmospheric distillation of crude oil.

Gas/diesel oil includes heavy gas oils obtained by vacuum re-distillation of the residual from atmospheric distillation. Gas/diesel oil distils between 200^{o}C and 380^{o}C, with less than 65 per cent in volume at 250^{o}C, including losses, and 80 per cent or more at 350^{o}C. The flash-point is always above 50^{o}C and their density is higher than 0.81. Heavy oils obtained by blending are grouped together with gas oils, provided that their kinematic viscosity does not exceed 25 cST at 40^{o} C.

Calorific value: 43.3 TJ/1 000 t.

D.VI-06. Liquefied petroleum gases (LPG)

Light hydrocarbons of the paraffin series which are derived solely from the distillation of crude oil.

The LPG comprise propane and butane or a mixture of these two hydrocarbons. They can be liquefied under low pressure (5-10 atmospheres). In the liquid state and at a temperature of 38oC they have a relative vapour pressure less than or equal to 24.5 bars. Their specific gravity ranges from 0.50 to 0.58.

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D.VI-07. Natural gas

Natural gas consists mainly of methane occurring naturally in underground deposits, associated with crude oil or gas recovered from coal mines (colliery gas).

D.VI-08. ~~Electric power~~ Liquefied natural gas (LNG)

To facilitate transportation over long distances, natural gas may be converted to liquid form by reducing its temperature to -160 degrees Celsius under atmospheric pressure. When gas is liquefied, it is called liquefied natural gas (LNG)

The density of LNG is between 0.44 and 0.47 tonnes per cubic meter, depending on composition

D.VI-09. Natural Gas Liquids (NGL):

NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include

ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate).

D.VI-10. Electric power

Energy produced by hydro-electric, geothermal, nuclear ~~and,~~ conventional thermal power stations and renewable sources etc excluding energy produced by hydro-electric pumping stations, measured by the calorific value of electricity (3.6TJ/GWh).

D.I/II-03. Types of pipelines

In general, pipelines can be classified in three main categories depending on its main purpose, the categories are as follows:

1. Gathering Pipelines

Group of smaller interconnected pipelines forming complex networks with the main purpose of bringing crude oil or natural gas from several nearby wells to a treatment plant or processing facility.

In this group, pipelines are usually short, couple of hundred of meters, and with small diameters. Also sub-sea pipelines for collecting product from deep water production platforms are considered gathering systems.

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