7th Regional JODI Training Workshop
8-10 October 2012, Rabat, Morocco

# Increasing Transparency of Oil/Energy Data:

## Cooperation, Harmonization, Dissemination

**Presented by Ms. Erica Robin(IEA)**
**Prepared by Mr. Jean-Yves Garnier (IEA)**

- Why is there a need for more cooperation?
  - The quality of energy statistics was declining in IEA/OECD countries
  - Similar developments in many other international organisations
- Stronger together: optimise resources
- What has already been done
- Next steps

# The symptoms (Early 2000s)

First Signs of Deterioration in Energy Statistics (OECD)

## Completeness

- More and more data are estimated
- More and more data are missing and/or confidential
- Less and less details, more aggregation (CHP, public vs. auto producers, …)

## Quality

- Efficiency of power plants > 100%
- Subtotals do not add up to totals
- Large statistical difference (>20%)
- Breaks in time series - no revisions in time series
- "Other sectors" often used as a balancing item

## Timeliness

- More and more time to collect, process, check and release data

# Complete Questionnaire – More Breaks – More Time Series

Supply and Consumption for Heat (TJ) - Tables 3 and 4

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Gross Production** | **443459** | **448383** | **430271** | **404831** | **407411** | **395300** | **416600** | **418943e** | **381577e** | **385800e** | **379551e** | **315920e** | **321022e** | **316222e** |
| Own use (-) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total Net Production** | **443459** | **448383** | **430271** | **404831** | **407411** | **395300** | **416600** | **418943e** | **381577e** | **385800e** | **379551e** | **315920e** | **321022e** | **316222e** |
| Imports (+) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Exports (-) | **122e** | **122e** | **122e** | **122e** | **122e** | **141e** | **141e** | **159e** | **145e** | **183e** | **146e** | **144e** | **152e** | **152e** |
| **Energy Supplied** | **443337** | **448261** | **430149** | **404709** | **407289** | **395159** | **416459** | **418784e** | **381432e** | **385617e** | **379405e** | **315776e** | **320870e** | **316070e** |
| Trans.+Distribut. Losses (-) | 29216 | 49439 | 42785 | 38858 | 41906 | 37259 | 40559 | 32411e | 30518e | 30153e | 29594e | 24631e | 25028e | 24653e |
| **Total Consumption (calc.)** | **414121** | **398822** | **387364** | **365851** | **365383** | **357900** | **375900** | **386373e** | **350914e** | **355464e** | **349811e** | **291145e** | **295842e** | **291417e** |
| **Total Consumption (obs.)** | **414121** | **398822** | **387364** | **365851** | **365383** | **357900** | **375900** | **386373e** | **350914e** | **355464e** | **349811e** | **291145e** | **295842e** | **291417e** |
| **Total Energy Sector** | **18288** | **15709** | **9408** | **9906** | **10698** | **9100** | **9700** | **8300e** | **6900e** | **6300e** | **6200e** | **5160e** | **5243e** | **5165e** |
| Coal Mines | 5598 | 5393 | 4396 | 4103 | 3986 | 3600 | 4000 | 2900e | 2820e | 2570e | 2529e | 2105e | 2138e | 2107e |
| Oil + Gas Extraction | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Patent Fuel Plants | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Coke Ovens | 1202 | 909 | 1305e | 1700 | 2198 | 2000 | 2100 | 1900e | 1550e | 1415e | 1392e | 1159e | 1178e | 1160e |
| Gas Works | 7239 | 6418 | 600e | 615 | 909 | - | - | - | - | - | - | - | - | - |
| BKB | 1348 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oil Refineries | 2901 | 2989 | 3107 | 3488 | 3605 | 3500 | 3600 | 3500e | 2530e | 2315e | 2279e | 1896e | 1927e | 1898e |
| Nuclear Industry | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Energy Non Specified | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total Industry Sector** | **97390** | **100848** | **85374** | **69108** | **67936** | **69850** | **70400** | **71570e** | **50330e** | **46030e** | **45298e** | **37701e** | **38309e** | **37736e** |
| Iron + Steel | 5246 | 3869 | 2520 | 2520 | 2081 | 2200 | - | - | - | - | - | - | - | - |
| Chemical + Petrochemical | 27989 | 24707 | 17761 | 18816 | 19343 | 18900 | 19900 | 19450e | 13680e | 12510e | 12311e | 10246e | 10411e | 10255e |
| Non Ferrous Metals | 703 | 967 | 645 | 762 | 557 | 550 | 550 | 585e | 410e | 375e | 369e | 307e | 312e | 307e |
| Non Metallic Minerals | 8177 | 3722 | 2696 | 1846 | 1817 | 2100 | 1850 | 2080e | 1465e | 1340e | 1319e | 1098e | 1116e | 1099e |
| Transport Equipment | 11811 | 10492 | 13511 | 12397 | 11958 | 11650 | 12350 | 12120e | 8520e | 7790e | 7666e | 6380e | 6483e | 6386e |
| Machinery | 6829 | 17438 | 15123 | 10375 | 9847 | 9900 | - | - | - | - | - | - | - | - |
| Mining + Quarring | 88 | 88 | 264 | 381 | 352 | 400 | 350 | 400e | 280e | 260e | 256e | 213e | 216e | 213e |
| Food, Beverages+Tabacco | 9789 | 13335 | 10639 | 5656 | 5422 | 5850 | 5600 | 5800e | 4080e | 3730e | 3671e | 3055e | 3104e | 3058e |
| Pulp, Paper + Printing | 2315 | 3927 | 3634 | 3195 | 3751 | 4150 | 3850 | 3700e | 2600e | 2380e | 2342e | 1949e | 1980e | 1950e |
| Wood + Wood Products | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Construction | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Textiles + Leather | 5539 | 3136 | 2315 | 1495 | 1612 | 1800 | - | - | - | - | - | - | - | - |
| Industry Non Specified | 18904 | 19167 | 16266 | 11665 | 11196 | 12350 | 25950 | 27435e | 19295e | 17645e | 17364e | 14453e | 14687e | 14468e |
| **Residential** | **298443** | **282265** | **292582** | **286837** | **286749** | **278950** | **295800** | **306503e** | **293684** | **303134** | **298313e** | **248284e** | **252290e** | **248516e** |
| **Comm. + Pub.Services** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Agriculture** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Sector Non Specified** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# The reasons for decreasing data quality

New developments make the tasks of statisticians much harder

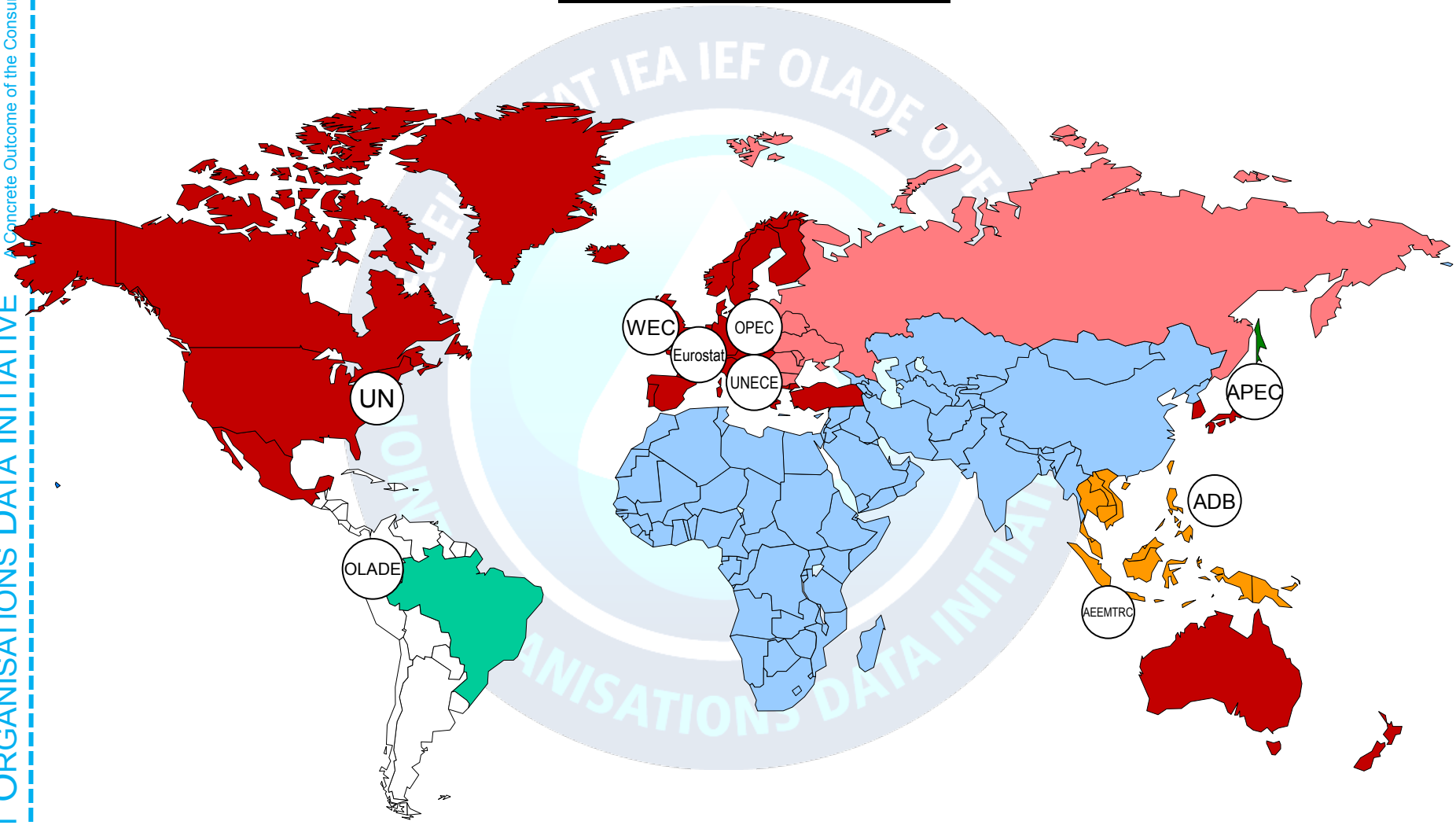
- Liberalisation of the market:
  From one company to hundreds
- Confidentiality (linked to liberalisation)
- More work passed to statistics offices:
  - More companies to survey (liberalisation)
  - Renewables (remote information)
  - Energy efficiency indicators (including socio-economic data)
  - Environment (estimation of GHG emissions, ….)
  - Etc.
- Resources do not follow work load:
  Statistics still have a low profile, budget cuts
- Fast turnover in staff: Lack of experience, continuity

# This concern happens at a time when:

- More and more important role in the global economy: Oil is the most traded commodity
- Gas market becomes more and more global
- Electricity market becomes more and more regional
- Fossil resources are depleting
- Excess capacities are shrinking (production, transformation, transport, stocks,…)
- The Kyoto Protocol has been ratified
- etc.

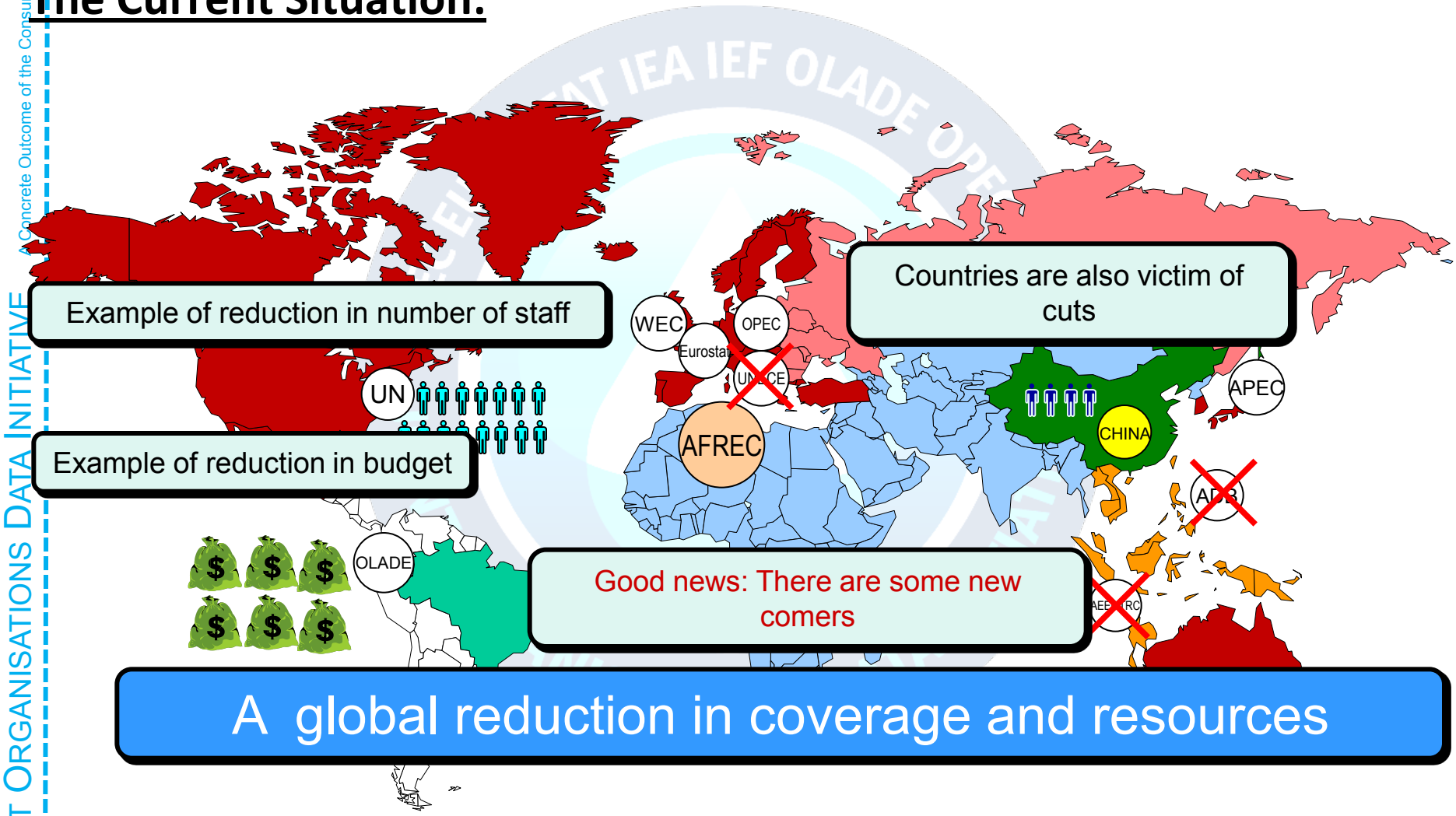
# The Problem was Shared by Many Organisations

## The Past Situation:

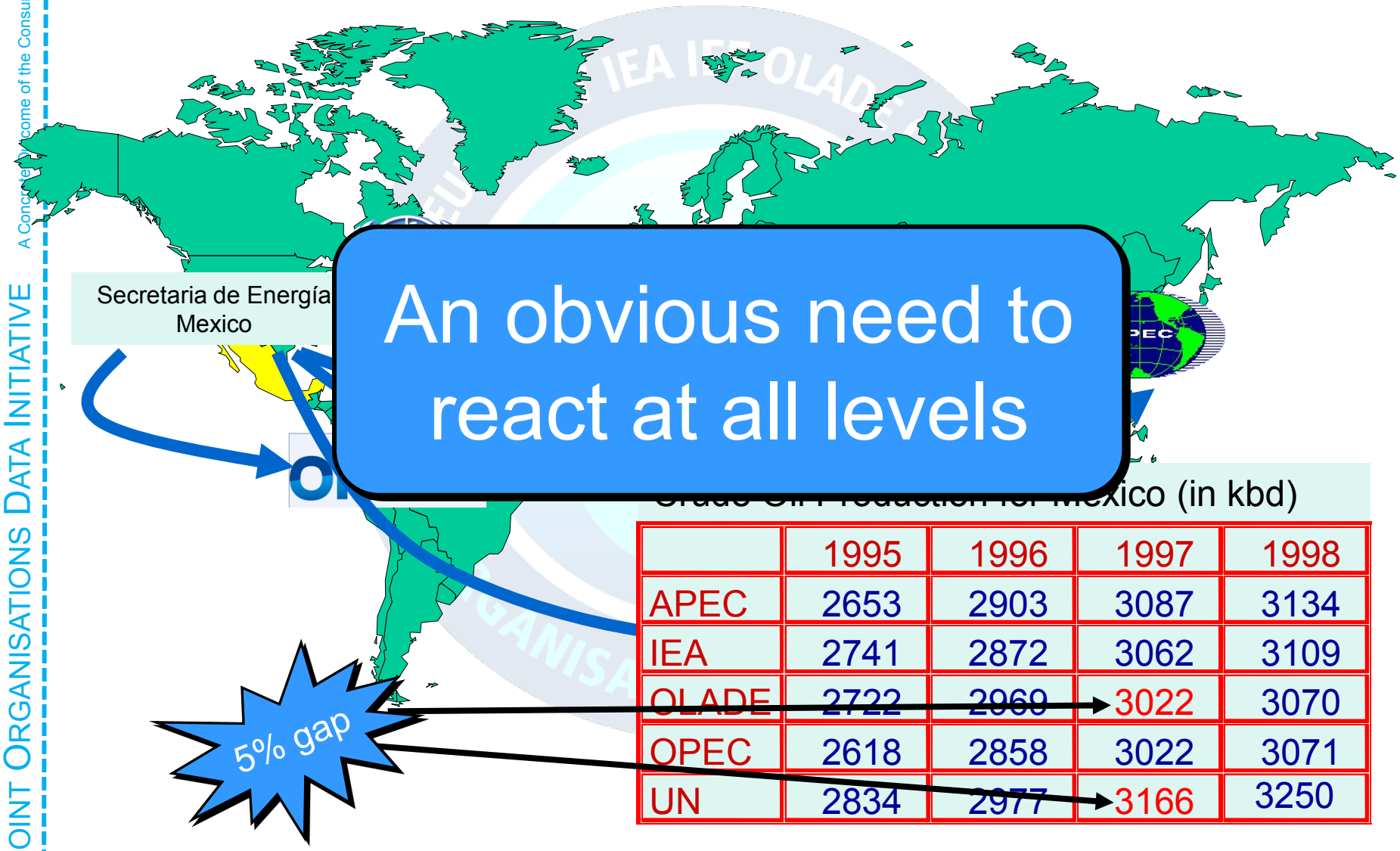


# The Problem was Shared by Many Organisations

## The Current Situation:



# Not Only the Lack of Resources But Also the Lack of Harmonization and Co-operation




Crude Oil Production for Mexico (in kbd)

| | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|
| APEC | 2653 | 2903 | 3087 | 3134 |
| IEA | 2741 | 2872 | 3062 | 3109 |
| OLADE | 2722 | 2969 | 3022 | 3070 |
| OPEC | 2618 | 2858 | 3022 | 3071 |
| UN | 2834 | 2977 | 3166 | 3250 |

# Organisations started to react

**IEA an example : A quick reaction in order to reverse the trends**

- **At the political level:**
  - Several presentations on the situation at the Governing Board
  - Transparency and statistics were also high on the agenda of the Ministerial Meeting in May 2005

Recognition/Commitment/Resources

Investment started to pay back:
More timely, more complete, more reliable

- **At the technical level:**
  - Release of an Energy Statistics Manual (together with Eurostat)
  - Training of statisticians from Member / Non-Member countries
  - A series of meetings with Member countries

Expertise/Recognition/Commitment

# The concern expressed by the IEA was echoed by several organisations

- At International Energy Forum Meetings
- By UNSD at the 36th Session of the UN Statistical Commission where energy was in the spotlight of the Commission
  - This led to the Ad-hoc Energy Group Meeting (23-25 May 2005, UN, New York) and the recommendation to establish the Oslo City Group and an Inter-Secretariat Working Group

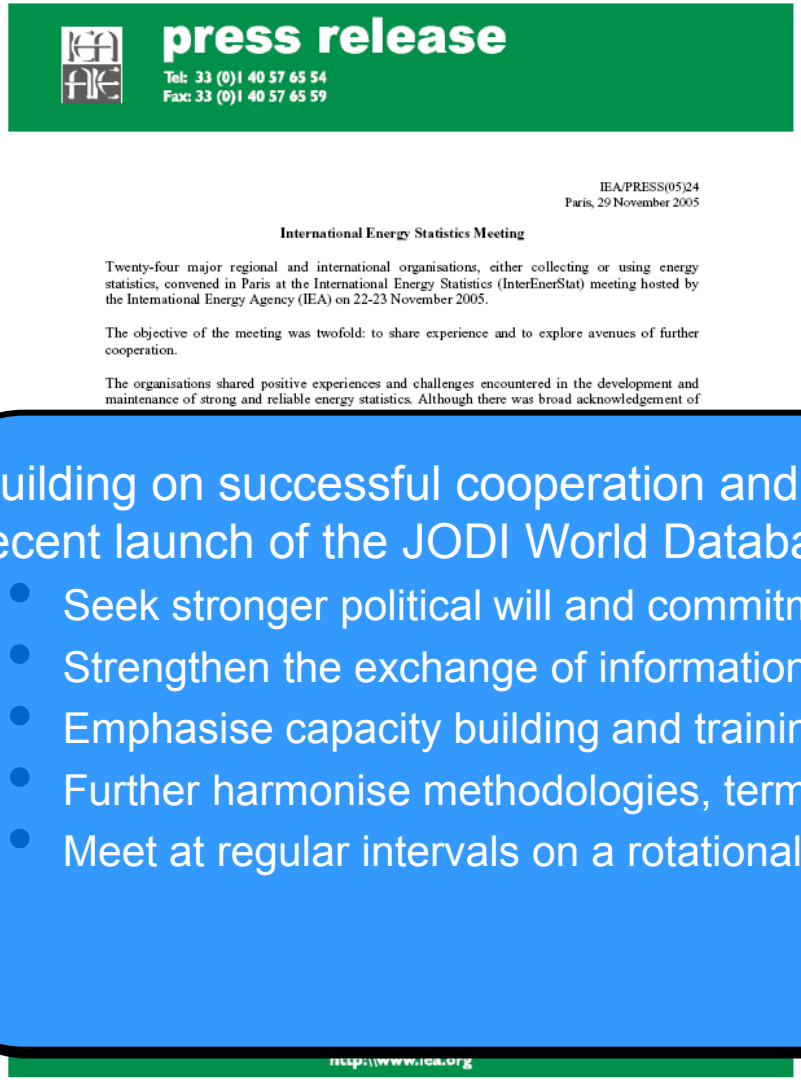
# Several encouraging initiatives for strengthening Harmonization and Co-operation

- The JODI - Joint Organisations Data Initiative
- APEC decided (in 2005) to align their annual questionnaires with those of IEA/Eurostat/UNECE
- AFREC established (in 2008) and working towards a similar statistics approach on 5 questionnaires

# The Momentum was there
# The IEA in consultation with UNSD decided to hold the 1st InterEnerStat Meeting

- November 2005
- Participants:
  - 24 major regional and international organisations.
    *Both data providers (IEA, UNSD, OPEC, Eurostat, FAO) and users (WB, IMF, UNFCCC,…)*
- Objectives:
  - To hear from each organisation what they do, what are their problems and their expectation for more co-operation
  - To pave the way for more harmonization and for strengthening bilateral and international co-operation

# Participants Agreed on a Communiqué



press release

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IEA/PRESS(05)24
Paris, 29 November 2005

**International Energy Statistics Meeting**

Twenty-four major regional and international organisations, either collecting or using energy statistics, convened in Paris at the International Energy Statistics (InterEnerStat) meeting hosted by the International Energy Agency (IEA) on 22-23 November 2005.

The objective of the meeting was twofold: to share experience and to explore avenues of further cooperation.

The organisations shared positive experiences and challenges encountered in the development and maintenance of strong and reliable energy statistics. Although there was broad acknowledgement of

Participating Organisations :

African Energy Commission (AFREC), Asian Pacific Economic Cooperation (APEC), African Petroleum Producers Association (APPA), EURELECTRIC, Eurogas, European Commission – Eurostat, European Environment Agency (EEA), Food and Agriculture Organisation (FAO), International Atomic Energy Agency (IAEA), International Energy Agency (IEA), International Energy Forum Secretariat (IEFS), International Monetary Fund (IMF), Intergovernmental Panel on Climate Change (IPCC), Organisation of Arab Petroleum Exporting Countries (OAPEC), Organisation of Economic Cooperation and Development (OECD), Latin American Energy Organisation (OLADE), Organisation of Petroleum Exporting Countries (OPEC), United Nations Economic Commission for Europe (UNECE), United Nations Framework Convention on Climate

Building on successful cooperation and harmonisation initiatives, such as the recent launch of the JODI World Database, participants agreed to:

- Seek stronger political will and commitment to increase quality of energy reporting;
- Strengthen the exchange of information and expertise;
- Emphasise capacity building and training;
- Further harmonise methodologies, terminologies and definitions; and
- Meet at regular intervals on a rotational basis to review progress.

# Two Clear Requests

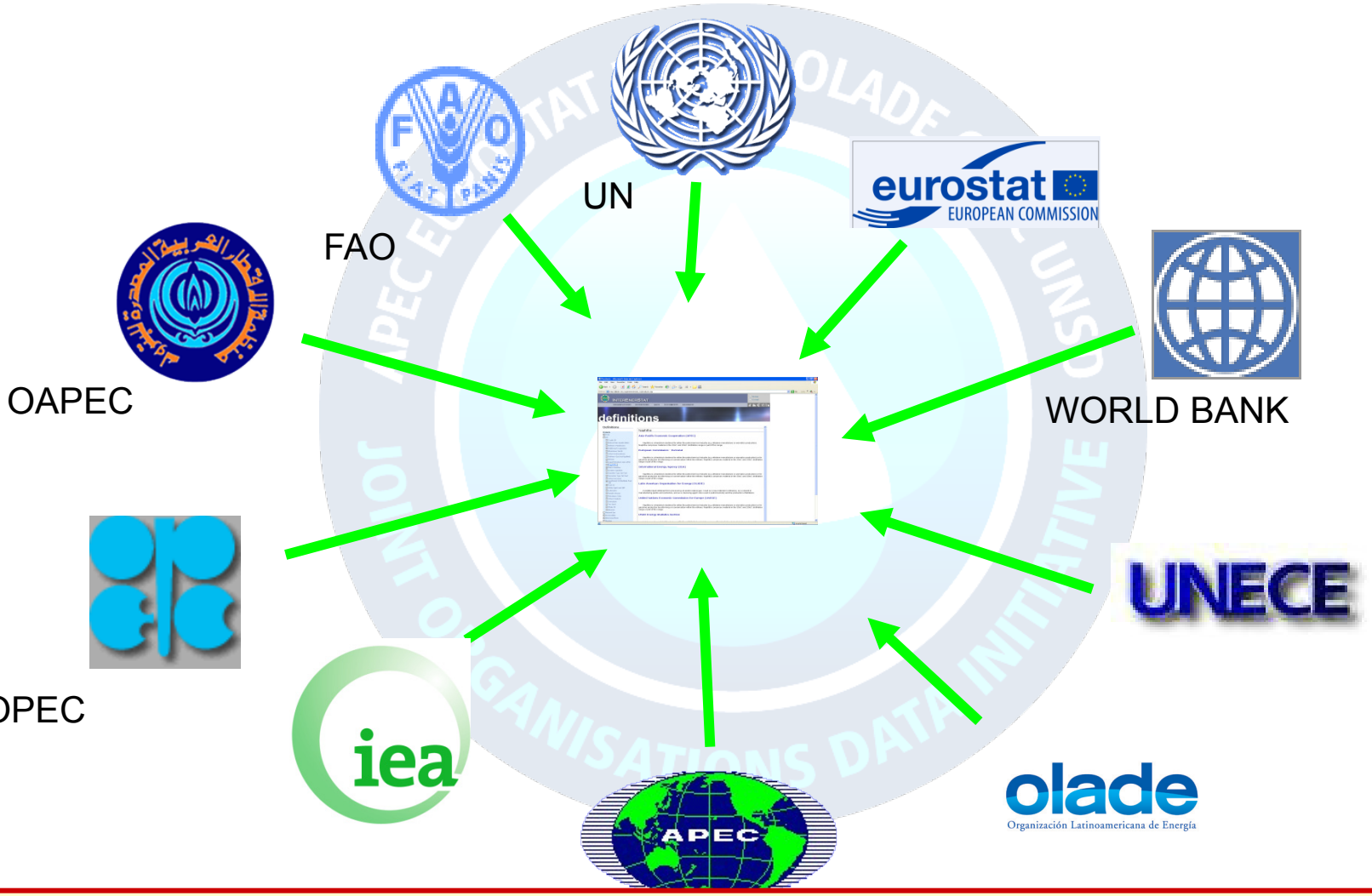
## Harmonisation

- Methodologies
- Definitions
- Units
- Conversion factors
- Harmonised demands and questionnaires
- Handbooks and manuals
- Training
- Quality framework

## Co-operation

- Building political awareness
- Harmonisation
- Joint Questionnaires
- Joint Training
- Common manuals
- Joint quality assessment
- Exchange of data

# Harmonisation: The first step was to collect from each organisation its own set of definitions



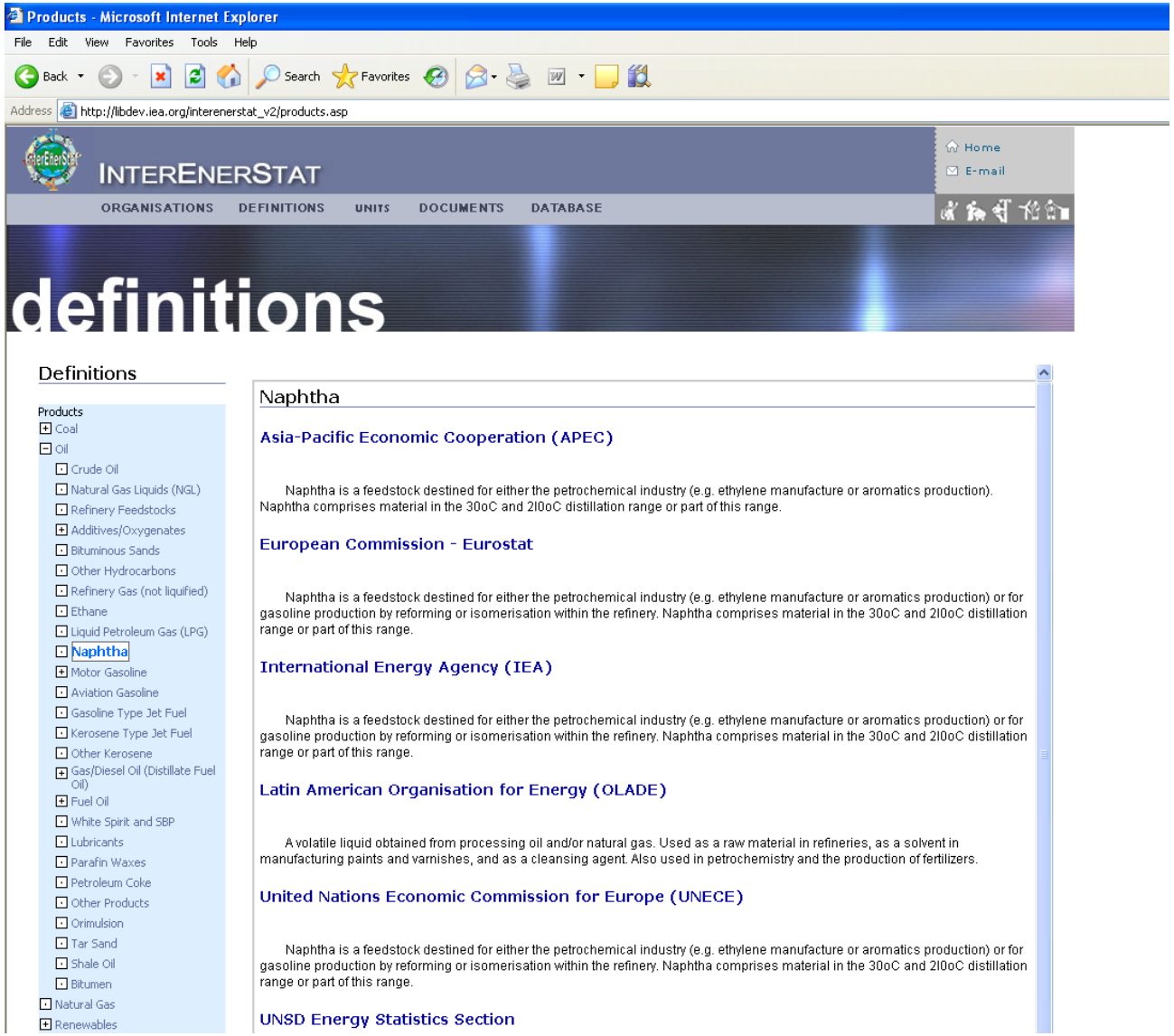

The 2nd step was to assemble them in a transparent way easy to access

# The 2nd InterEnerStat Workshop

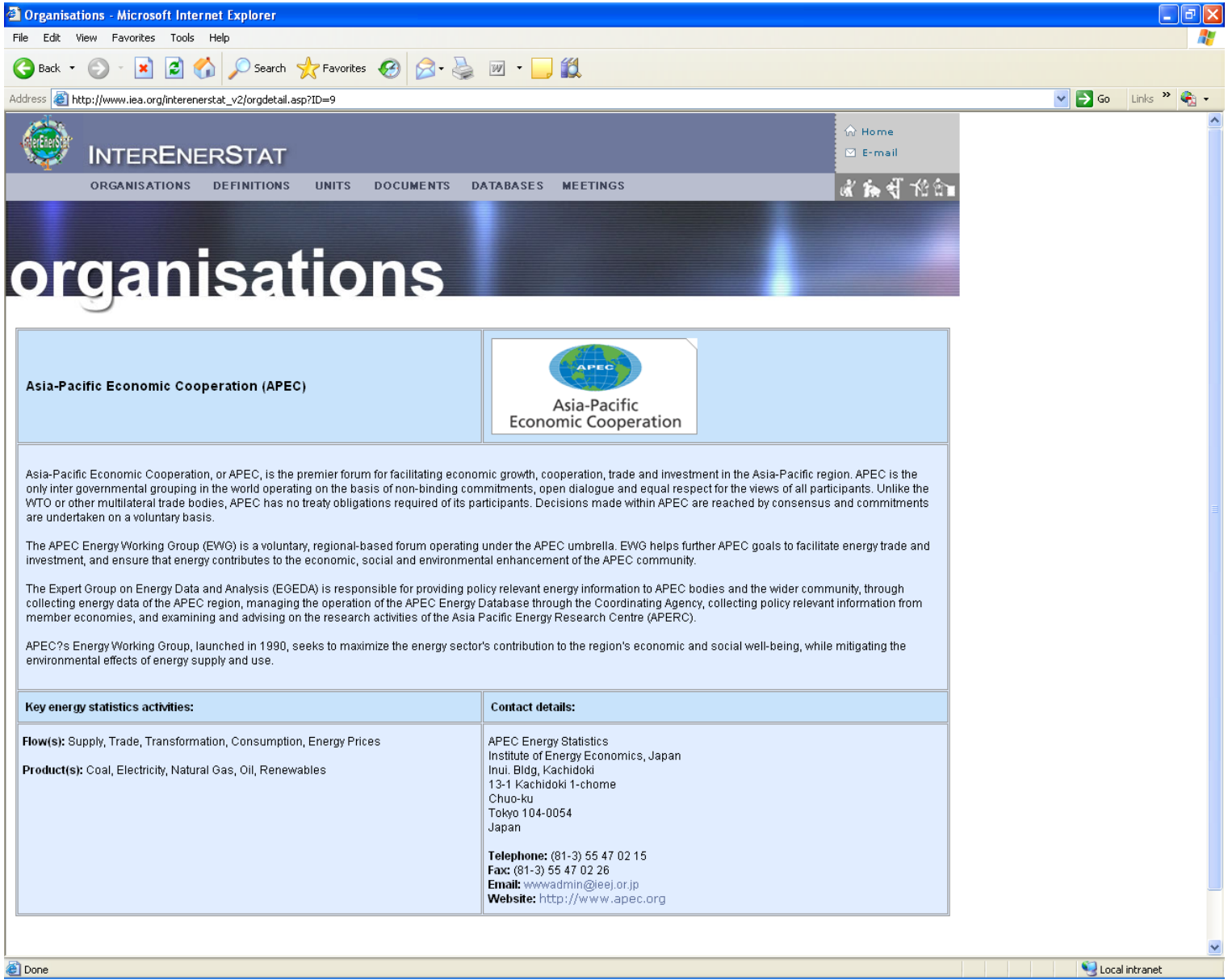
## 19-20 November 2007, IEA, Paris


- 22 international/regional organisations
- Both data providers and users
- Harmonisation of definitions
- Common training sessions
- A joint website

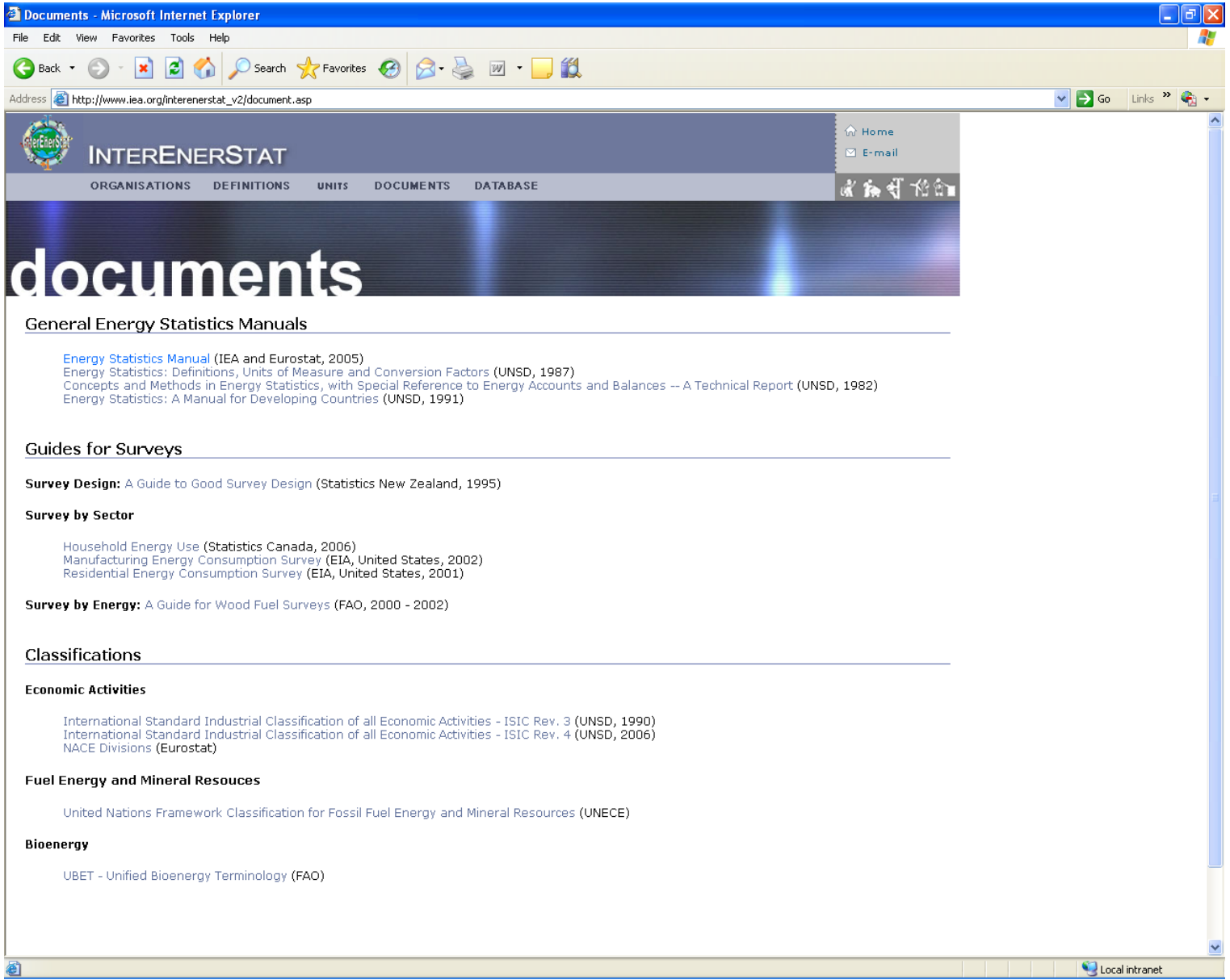
# An overview of the InterEnerStat website



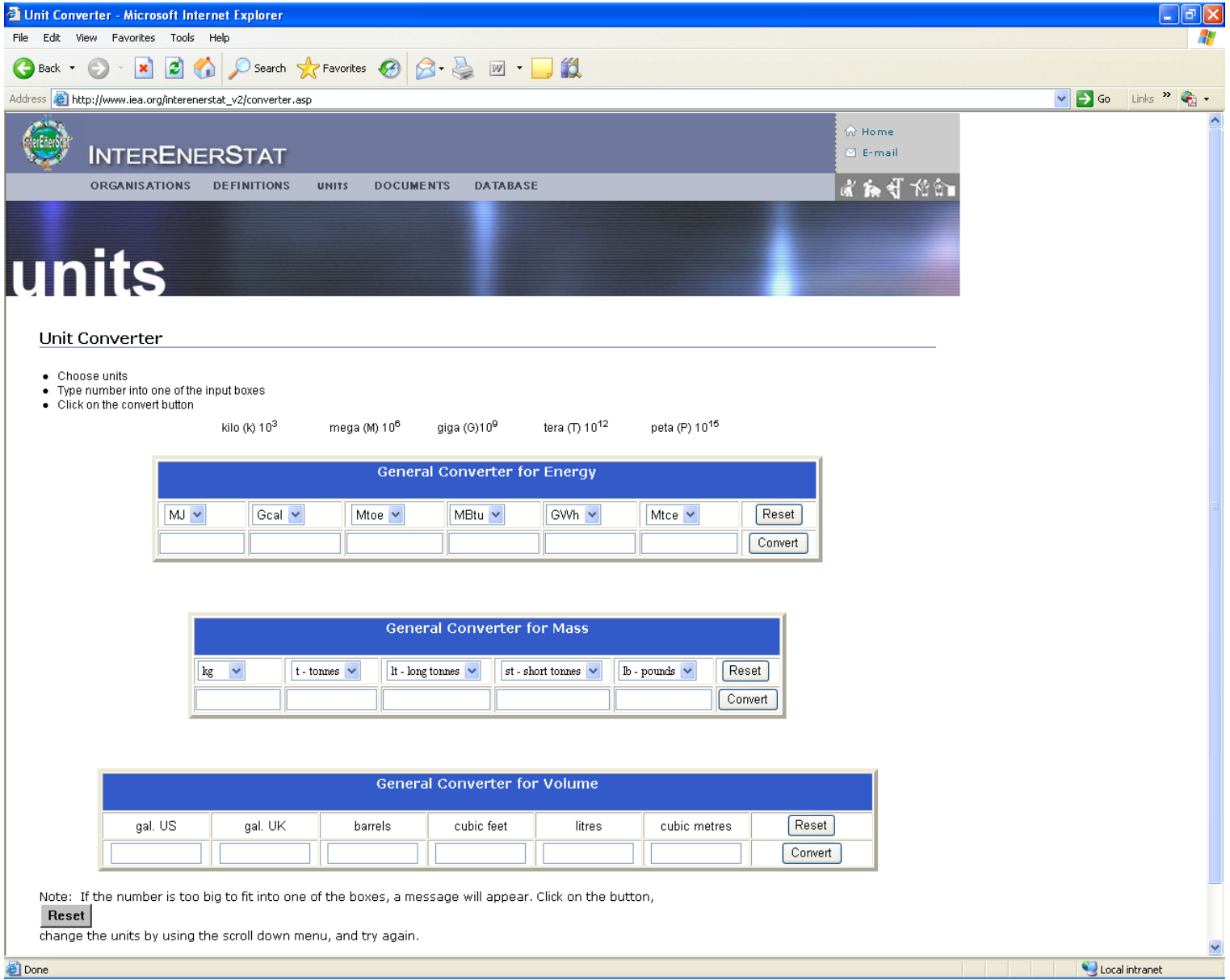
# An overview of the InterEnerStat website



# An overview of the InterEnerStat website



# An overview of the InterEnerStat website



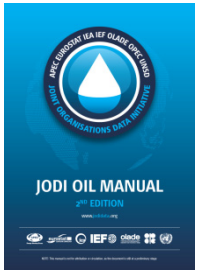
# The ultimate goal would be to have one questionnaire common to all countries and organisations


Dream or reality?

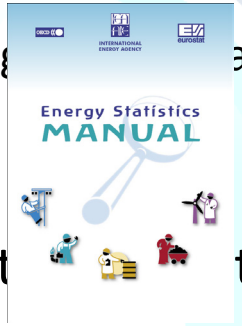
# Co-operation through an agreement on key points

| Term to be harmonized | Comments |
|---|---|
| Definitions | Not so easy – see crude oil production |
| Units | Easy in principle – conversion factors |
| Questionnaires | Related to definitions but also to level of detail |
| Methodology | Depending on convention adopted<br>e.g. TPES vs. TPER |
| Processing | Who processes what<br>(e.g. Mexico: APEC, OECD, OLADE, UNSD) |
| Quality checks/standards | Essential for sake of comparability/level of confidence |
| Dissemination | Should be easy…<br>… when all points have been agreed |

# Examples of Harmonization Programs




- JODI (APEC, Eurostat, IEA, IEFS, OPEC, OLADE, UNSD)
  - Jodi Manual
  - Jodi Training (Caracas, Johannesburg, [illegible])
- Joint IEA-Eurostat Manual
- UNSD has questionnaires compat[illegible] t[illegible] E[illegible] B[illegible] and UNECE questionnaires
- APEC has mostly adopted the joint IEA-Eurostat-UNECE questionnaires
- AFREC has started to use a WEC-IEA designed questionnaire




English


French


German


Russian

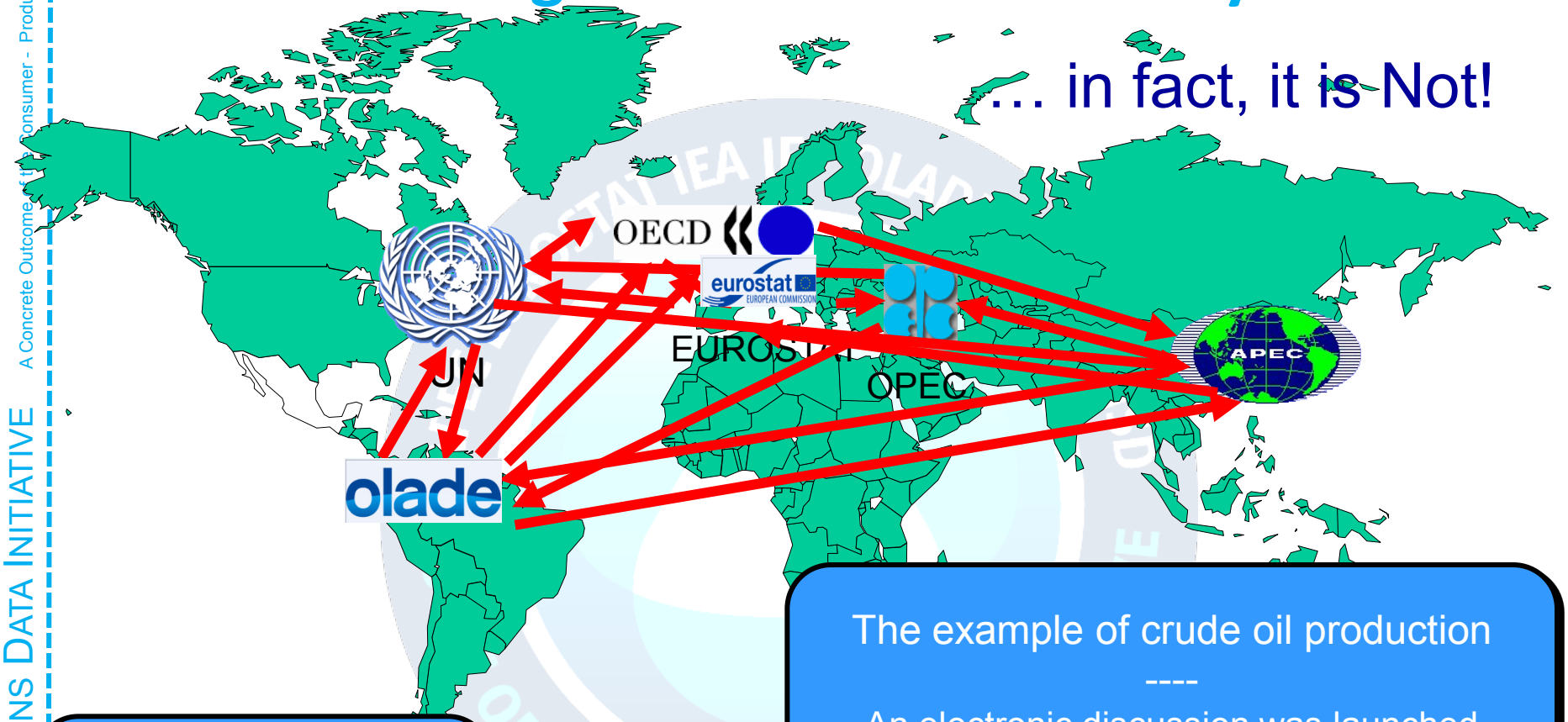
# Harmonization and Co-operation

The optimum would be for each organisations to collect data from its own member countries and economies and then to exchange the data when processed with the other organisations.


This means a general agreement on definitions, units and questionnaires

# Harmonizing definitions seems easy…

… in fact, it is Not!




Hundreds of emails and no real agreement on an harmonized definition…

The example of crude oil production

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An electronic discussion was launched between the 6 JODI organisations

# JODI: Only, a Partial Harmonization

APEC, Eurostat and IEA: Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is co-mingled with the commercial crude oil stream.

OLADE: This is a complex mixture of hydrocarbons of different molecular weight, in which there is a generally small fraction of compounds containing sulfur and nitrogen. The composition of the oil is variable and can be divided into three classes, according to the

**Crude Oil: Including lease condensate – excluding NGL**

d

phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

UNSD: Crude oil/petroleum: mineral oil consisting of a mixture of hydrocarbons of natural origin, yellow to black in color, of variable density and viscosity. Data in this category also includes crude mineral oils extracted from bituminous minerals (shale, bituminous sand, etc.). Data also includes lease (field) condensate which is recovered from gaseous hydrocarbons in lease separation facilities.

# JODI: A First Step towards Harmonization

| Agreement on | Yes | Partial | No |
|---|---|---|---|
| Definitions | | ✓ | |
| Units | ✓ | ✓ | |
| Questionnaires | ✓ | | |
| Methodology | ✓ | | |
| Processing | ✓ | ✓ | |
| Quality checks/standards | ✓ | ✓ | |
| Dissemination | ✓ | | |

# InterEnerStat could play a similar role for Energy as JODI for Oil

- The 1st formal meeting of the Inter-Secretariat Working Group translated ideas expressed in November 2005 into concrete actions
- Creation of an InterEnerStat web site to gather in a central place information on energy statistics in organisations – a forum to find information but also for discussion
- Close cooperation with the work of the Oslo City Group and UNSD International Recommendations for Energy Statistics

# A few words to conclude

- Harmonisation will not happen overnight. It needs time, effort, resources and commitment.
- Final agreement on product and flow definitions reached following recommendations from the expert and discussion with participating entities.
- Underlying principle: evolution not revolution. The main objective is to support energy policy and energy analysis.
- Another area for cooperation is to organise joint training sessions (open university) with on-the-shelf training material (experience of OLADE in on-line training very valuable)

# Thank you

For more information at

**www.jodidata.org**