

7th Regional JODI Training Workshop

8-10 October 2012, Rabat, Morocco


Increasing Transparency of Oil/Energy Data:

Cooperation, Harmonization, Dissemination

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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, Frequent, More Broad & More Timely 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

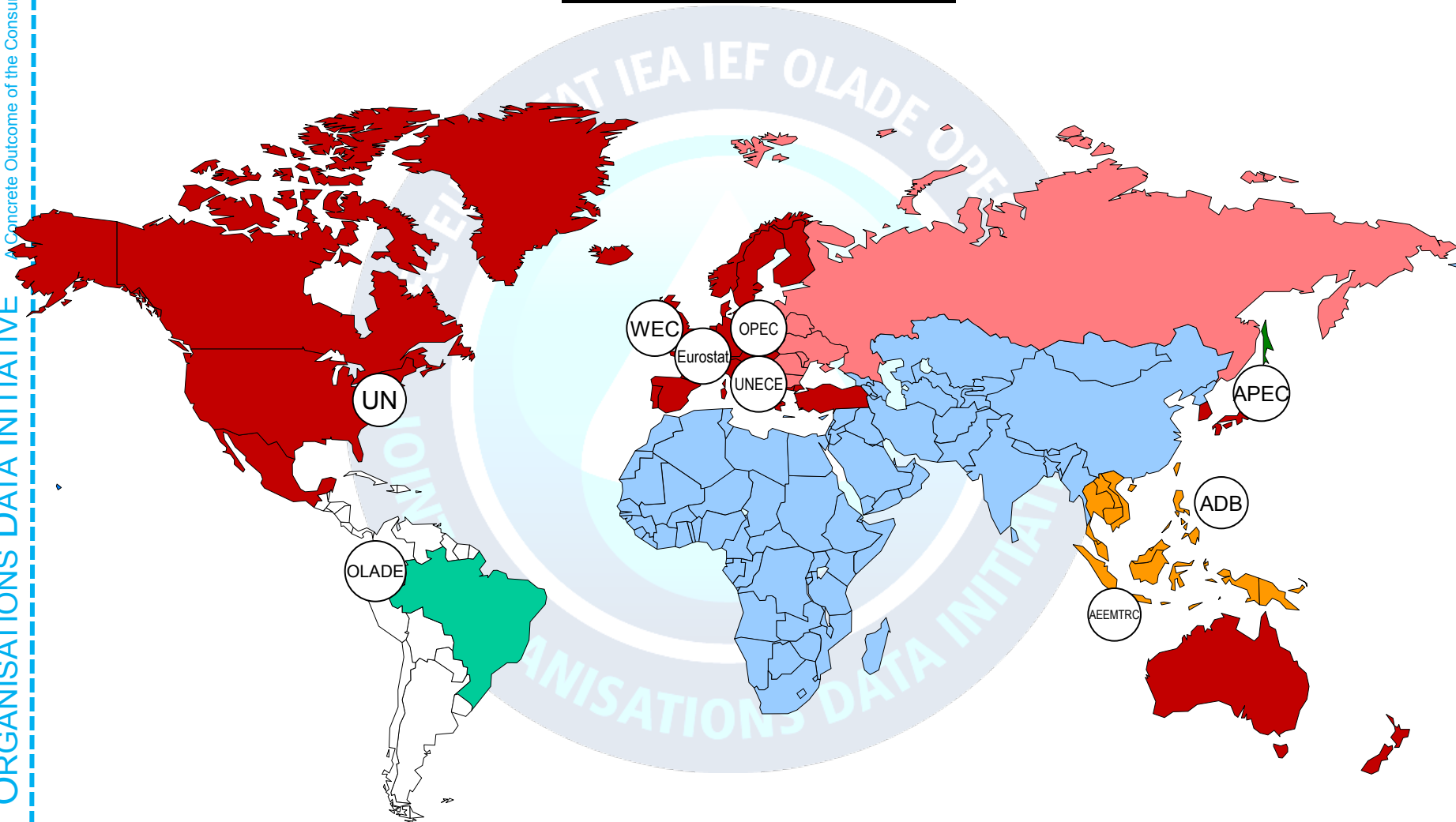
- Liberalisation of the market:
From one company to hundreds
- Confidentiality (linked to liberalisation)
- More work passed to statistics offices:
 - More companies to survey (liberalisation)
 - Renewables (remote information)
 - Energy efficiency indicators (including socio-economic data)
 - Environment (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.

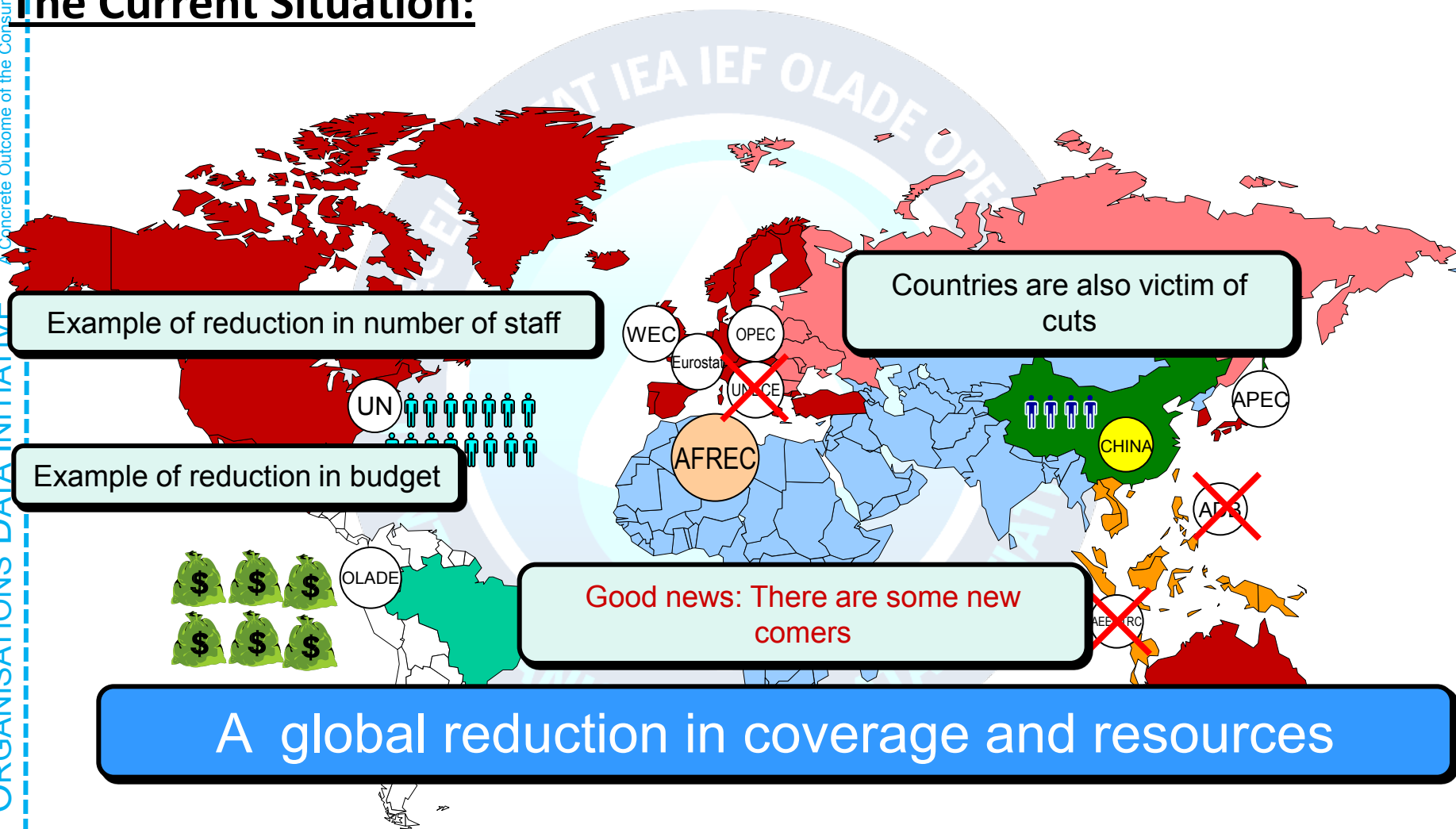
The Problem was Shared by Many Organisations

The Past Situation:

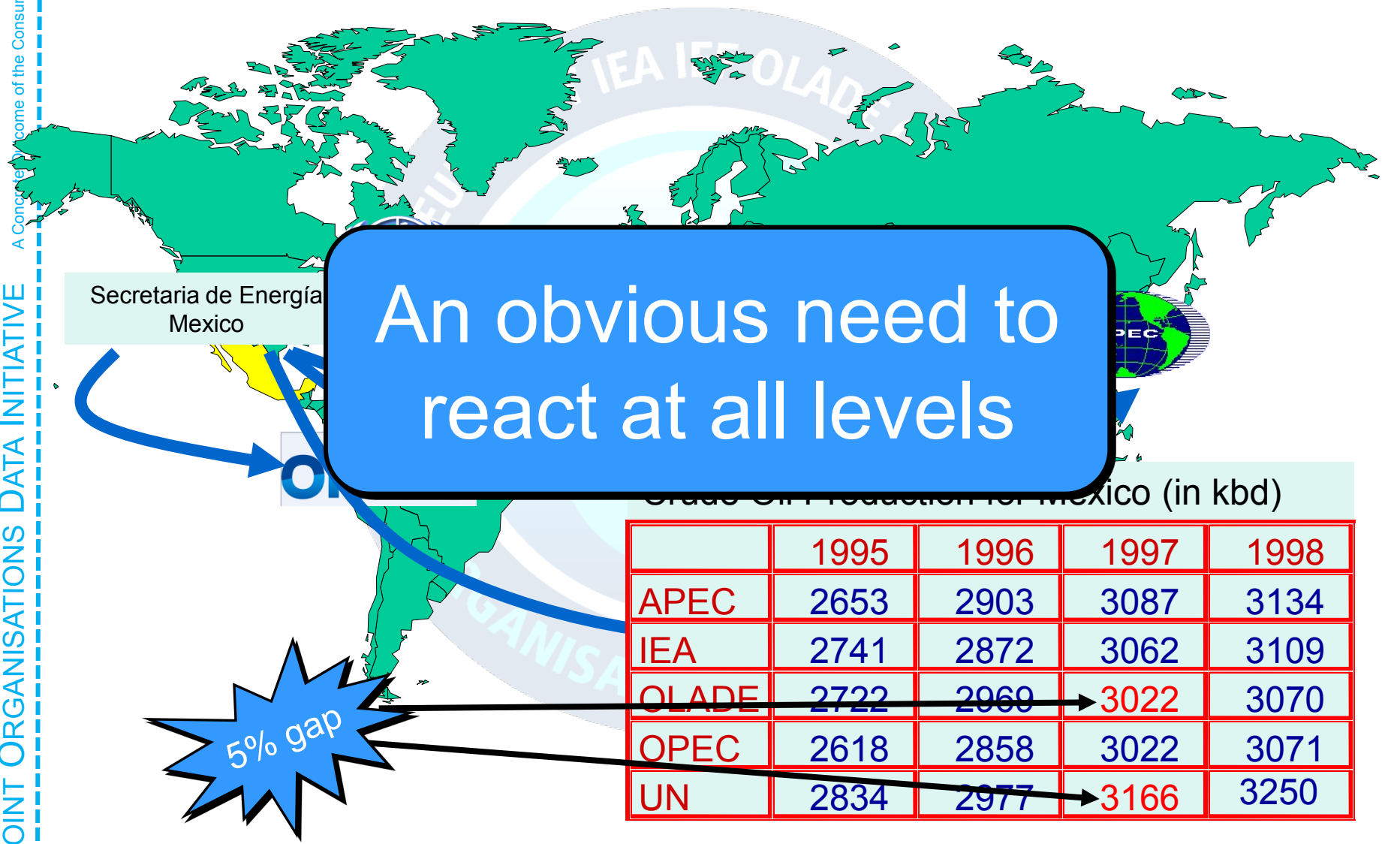


The Problem was Shared by Many Organisations

The Current Situation:



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



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.

<http://www.iea.org>

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

The screenshot shows a Microsoft Internet Explorer browser window displaying the InterEnerStat website. The address bar shows the URL: http://libdev.iaea.org/interenerstat_v2/products.asp. The website header includes the InterEnerStat logo and navigation links: Home, E-mail, ORGANISATIONS, DEFINITIONS, UNITS, DOCUMENTS, and DATABASE. The main content area is titled 'definitions' and features a sidebar with a tree view of products. The 'Naphtha' product is selected and highlighted in blue. The main content area displays the definition of Naphtha, including its chemical composition and its use as a feedstock for the petrochemical industry.

Products - Microsoft Internet Explorer

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Address http://libdev.iaea.org/interenerstat_v2/products.asp

INTERENERSTAT

Home E-mail

ORGANISATIONS DEFINITIONS UNITS DOCUMENTS DATABASE

definitions

Definitions

Products

- Coal
- Oil
 - Crude Oil
 - Natural Gas Liquids (NGL)
 - Refinery Feedstocks
 - Additives/Oxygenates
 - Bituminous Sands
 - Other Hydrocarbons
 - Refinery Gas (not liquified)
 - Ethane
 - Liquid Petroleum Gas (LPG)
 - Naphtha**
 - Motor Gasoline
 - Aviation Gasoline
 - Gasoline Type Jet Fuel
 - Kerosene Type Jet Fuel
 - Other Kerosene
 - Gas/Diesel Oil (Distillate Fuel Oil)
 - Fuel Oil
 - White Spirit and SBP
 - Lubricants
 - Paraffin Waxes
 - Petroleum Coke
 - Other Products
 - Orimulsion
 - Tar Sand
 - Shale Oil
 - Bitumen
- Natural Gas
- Renewables

Naphtha

Asia-Pacific Economic Cooperation (APEC)

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production). Naphtha comprises material in the 30oC and 210oC distillation range or part of this range.

European Commission - Eurostat

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30oC and 210oC distillation range or part of this range.

International Energy Agency (IEA)

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30oC and 210oC distillation range or part of this range.

Latin American Organisation for Energy (OLADE)

A volatile liquid obtained from processing oil and/or natural gas. Used as a raw material in refineries, as a solvent in manufacturing paints and varnishes, and as a cleansing agent. Also used in petrochemistry and the production of fertilizers.

United Nations Economic Commission for Europe (UNECE)

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30oC and 210oC distillation range or part of this range.

UNSD Energy Statistics Section


An overview of the InterEnerStat website

Organisations - Microsoft Internet Explorer

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 **INTERENERSTAT**

ORGANISATIONS DEFINITIONS UNITS DOCUMENTS DATABASES MEETINGS

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organisations

Asia-Pacific Economic Cooperation (APEC)


Asia-Pacific
Economic Cooperation

Asia-Pacific Economic Cooperation, or APEC, is the premier forum for facilitating economic growth, cooperation, trade and investment in the Asia-Pacific region. APEC is the only inter governmental grouping in the world operating on the basis of non-binding commitments, open dialogue and equal respect for the views of all participants. Unlike the WTO or other multilateral trade bodies, APEC has no treaty obligations required of its participants. Decisions made within APEC are reached by consensus and commitments are undertaken on a voluntary basis.

The APEC Energy Working Group (EWG) is a voluntary, regional-based forum operating under the APEC umbrella. EWG helps further APEC goals to facilitate energy trade and investment, and ensure that energy contributes to the economic, social and environmental enhancement of the APEC community.

The Expert Group on Energy Data and Analysis (EGEDA) is responsible for providing policy relevant energy information to APEC bodies and the wider community, through collecting energy data of the APEC region, managing the operation of the APEC Energy Database through the Coordinating Agency, collecting policy relevant information from member economies, and examining and advising on the research activities of the Asia Pacific Energy Research Centre (APEREC).

APEC's Energy Working Group, launched in 1990, seeks to maximize the energy sector's contribution to the region's economic and social well-being, while mitigating the environmental effects of energy supply and use.

Key energy statistics activities:	Contact details:
Flow(s): Supply, Trade, Transformation, Consumption, Energy Prices Product(s): Coal, Electricity, Natural Gas, Oil, Renewables	APEC Energy Statistics Institute of Energy Economics, Japan Inui Bldg, Kachidoki 13-1 Kachidoki 1-chome Chuo-ku Tokyo 104-0054 Japan Telephone: (81-3) 55 47 02 15 Fax: (81-3) 55 47 02 26 Email: wwwadmin@ieej.or.jp Website: http://www.apec.org

Done Local intranet


An overview of the InterEnerStat website

Documents - Microsoft Internet Explorer

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ORGANISATIONS DEFINITIONS UNITS DOCUMENTS DATABASE

documents

General Energy Statistics Manuals

[Energy Statistics Manual](#) (IEA and Eurostat, 2005)
[Energy Statistics: Definitions, Units of Measure and Conversion Factors \(UNSD, 1987\)](#)
[Concepts and Methods in Energy Statistics, with Special Reference to Energy Accounts and Balances -- A Technical Report \(UNSD, 1982\)](#)
[Energy Statistics: A Manual for Developing Countries \(UNSD, 1991\)](#)

Guides for Surveys

Survey Design: [A Guide to Good Survey Design \(Statistics New Zealand, 1995\)](#)

Survey by Sector

[Household Energy Use \(Statistics Canada, 2006\)](#)
[Manufacturing Energy Consumption Survey \(EIA, United States, 2002\)](#)
[Residential Energy Consumption Survey \(EIA, United States, 2001\)](#)

Survey by Energy: [A Guide for Wood Fuel Surveys \(FAO, 2000 - 2002\)](#)

Classifications

Economic Activities

[International Standard Industrial Classification of all Economic Activities - ISIC Rev. 3 \(UNSD, 1990\)](#)
[International Standard Industrial Classification of all Economic Activities - ISIC Rev. 4 \(UNSD, 2006\)](#)
[NACE Divisions \(Eurostat\)](#)

Fuel Energy and Mineral Resources

[United Nations Framework Classification for Fossil Fuel Energy and Mineral Resources \(UNECE\)](#)

Bioenergy

[UBET - Unified Bioenergy Terminology \(FAO\)](#)

Local intranet


An overview of the InterEnerStat website

Unit Converter - Microsoft Internet Explorer

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Address http://www.iea.org/interenerstat_v2/converter.asp Go Links

 **INTERENERSTAT** Home E-mail

ORGANISATIONS DEFINITIONS UNITS DOCUMENTS DATABASE

units

Unit Converter

- Choose units
- Type number into one of the input boxes
- Click on the convert button

kilo (k) 10^3 mega (M) 10^6 giga (G) 10^9 tera (T) 10^{12} peta (P) 10^{15}

General Converter for Energy

MJ	Gcal	Mtoe	MBtu	GWh	Mtce	Reset
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Convert

General Converter for Mass

kg	t - tonnes	lt - long tonnes	st - short tonnes	lb - pounds	Reset
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Convert

General Converter for Volume

gal. US	gal. UK	barrels	cubic feet	litres	cubic metres	Reset
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Convert

Note: If the number is too big to fit into one of the boxes, a message will appear. Click on the button, **Reset** change the units by using the scroll down menu, and try again.

Done Local intranet

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



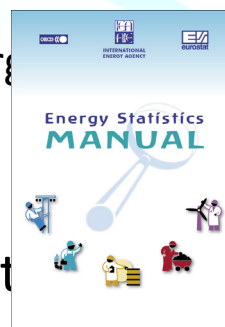
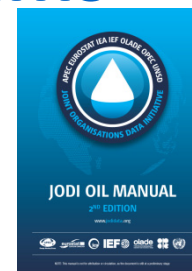
Dream or reality?

Co-operation through an agreement on key points

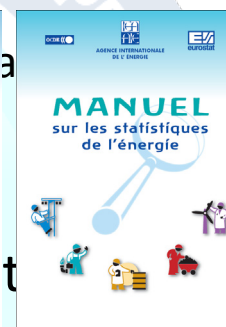
Term to be harmonized	Comments
Definitions	Not so easy – see crude oil production
Units	Easy in principle – conversion factors
Questionnaires	Related to definitions but also to level of detail
Methodology	Depending on convention adopted e.g. TPES vs. TPER
Processing	Who processes what (e.g. Mexico: APEC,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

Examples of Harmonization Programs

- JODI (APEC, Eurostat, IEA, IEFS, OPEC, OLADE, UNSD)
 - Jodi Manual
 - Jodi Training (Caracas, Johannesburg)
- Joint IEA-Eurostat Manual
- UNSD has questionnaires compatible with 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

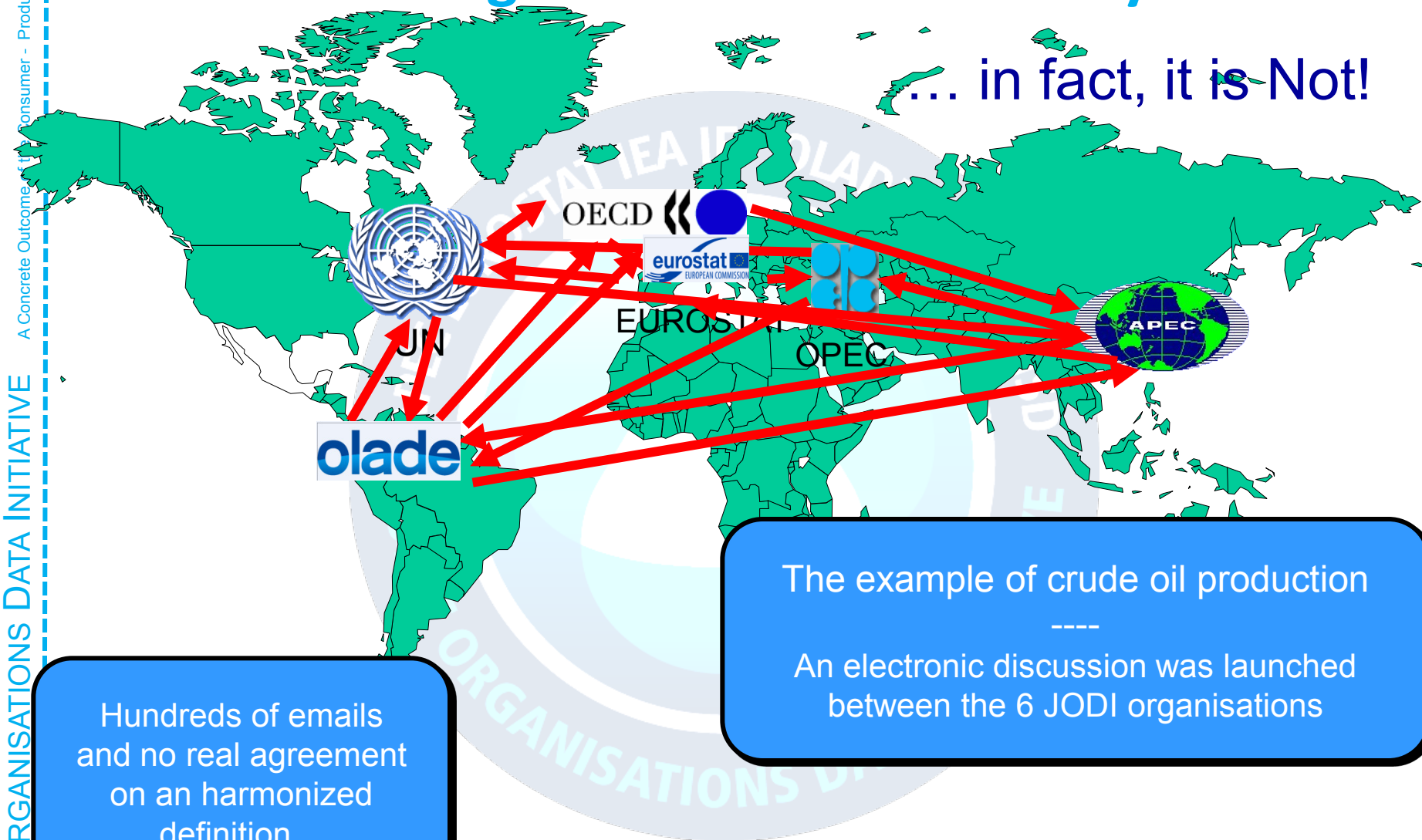
The optimum would be for each organisations to collect data from its own member countries and economies and then to exchange the data when processed with the other organisations.



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

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**

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



Energy Working Group



International
Energy Agency

