11th Regional JODI Training Workshop,
23-25 March 2015, Vienna, Austria
Energy Community Secretariat

Increasing Transparency of Energy Data:

Cooperation, Harmonisation, Dissemination

Presented by Stève Gervais (IEA)

Contents

Increasing transparency through international cooperation

- Why is there a need for international cooperation?
- Some of the history
- What has already been achieved
- Next steps

Why is there a need for more cooperation between international organisations?

Why is there a need for more cooperation between international organisations?

- **Resources issue**
- **A need to reduce the reporting burden on member countries**
  - One international questionnaire
  - One set of agreed definitions

- **A need to be able to show consistent energy data published by international organisations**
  - Not necessarily same data to be published
  - But differences can be explained.

Why is there a need for more cooperation between international organisations? (2)

- **Joining expertise and forces between organisations**
  - Each organisation has abilities and weaknesses
  - Organisations have particular areas of expertise
  - Organisations, like countries, face resources cuts

- **Raising the profile of energy statistics and statisticians**
  - Statistics often lack a good image
  - Global initiatives draw the attention of policy makers at the highest level
  - JODI has certainly contributed to raising profile of energy statistics

International co-operation

=

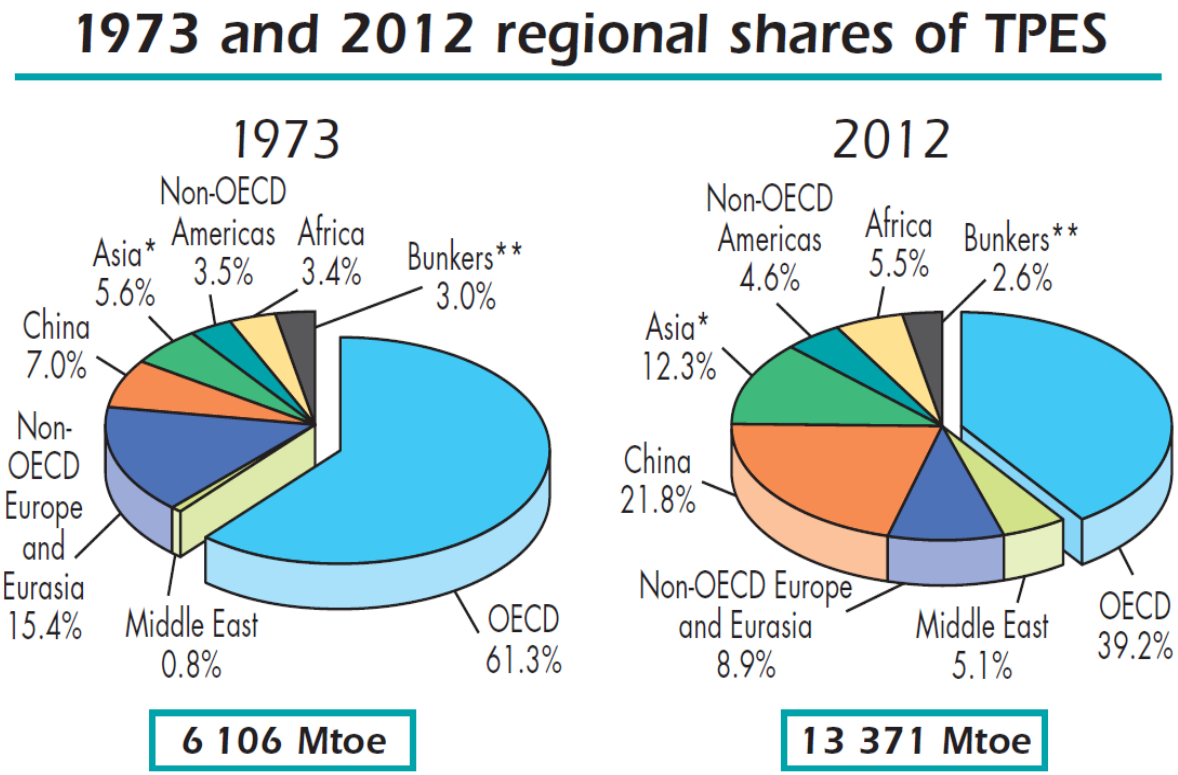
Stronger together

More international cooperation in a changing energy world

- World balance of energy is changing: OECD versus Non-OECD. Data gathering history for most OECD countries much longer than non-OECD.
- Energy markets are more and more global
- An increasing need to be more transparent and to improve the coverage of global energy data
- A need to improve energy data quality: both in OECD and non-OECD countries
- An increasing need for more detailed information

A changing energy world

- World balance of energy is changing: OECD versus Non-OECD



NON OECD Share

- **Oil refining**:
  33% in 1973,
  50% in 2012
- **Gas production**:
  29% in 1973,
  65% in 2012
- **Electricity consumption:**
  27% in 1973,
  52% in 2012,
- **TPES:**
  39% in 1973,
  61% in 2012,
  70% in 2040

Some of the history behind international cooperation

Energy Statistics – Quality problems

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

Completeness: More Breaks in Time Series
Quality: Fewer Breaks, More Estimates

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

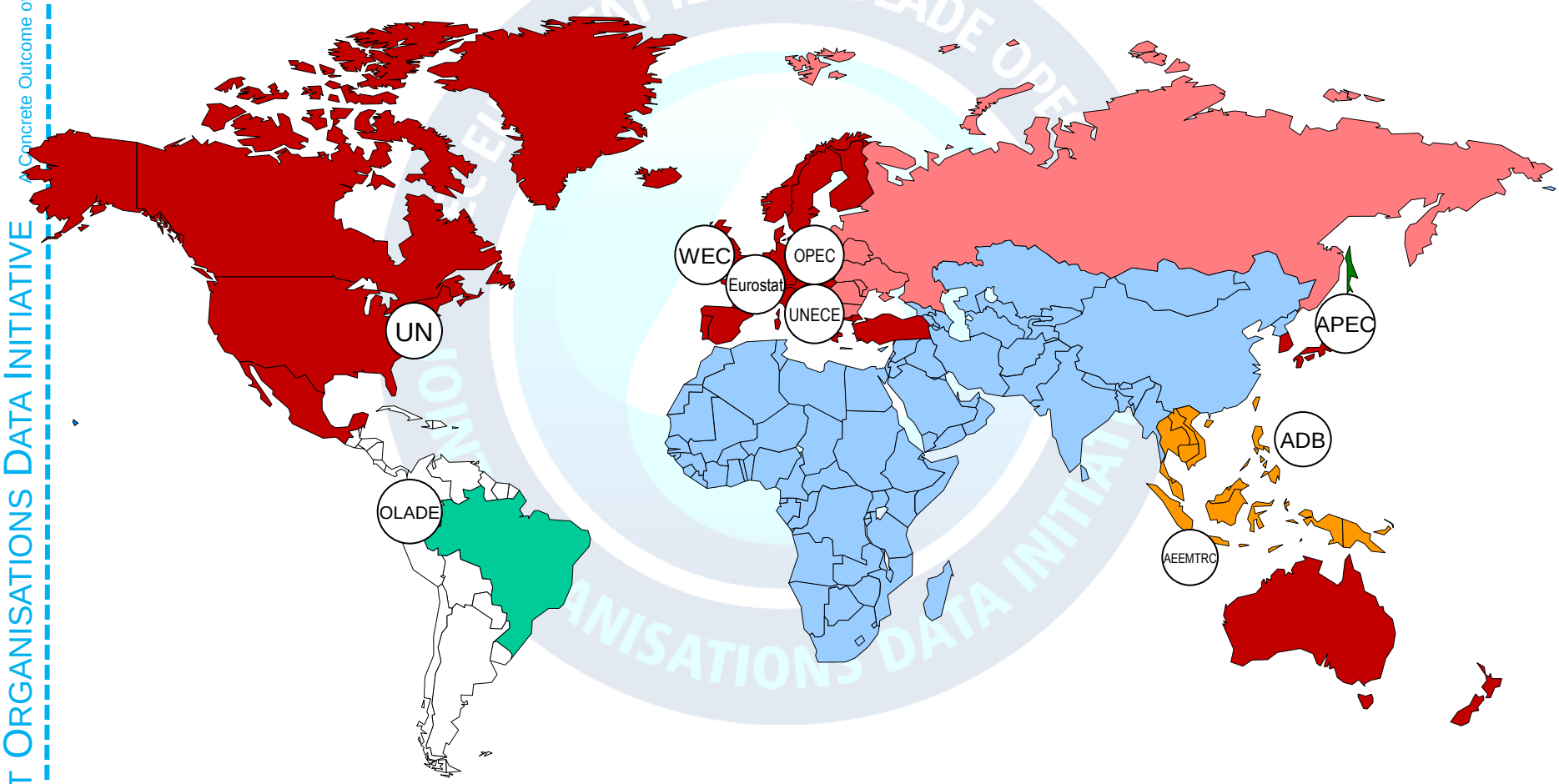
- Confidentiality (linked to liberalisation)
- More work passed to statistics offices:
  - More companies to survey (liberalisation)
  - Renewables (remote information)
  - Energy efficiency indicators (including socio-economic data)
  - Environment (estimation of GHG emissions, ….)
- Resources do not follow work load:

  Statistics still have a low profile, budget cuts

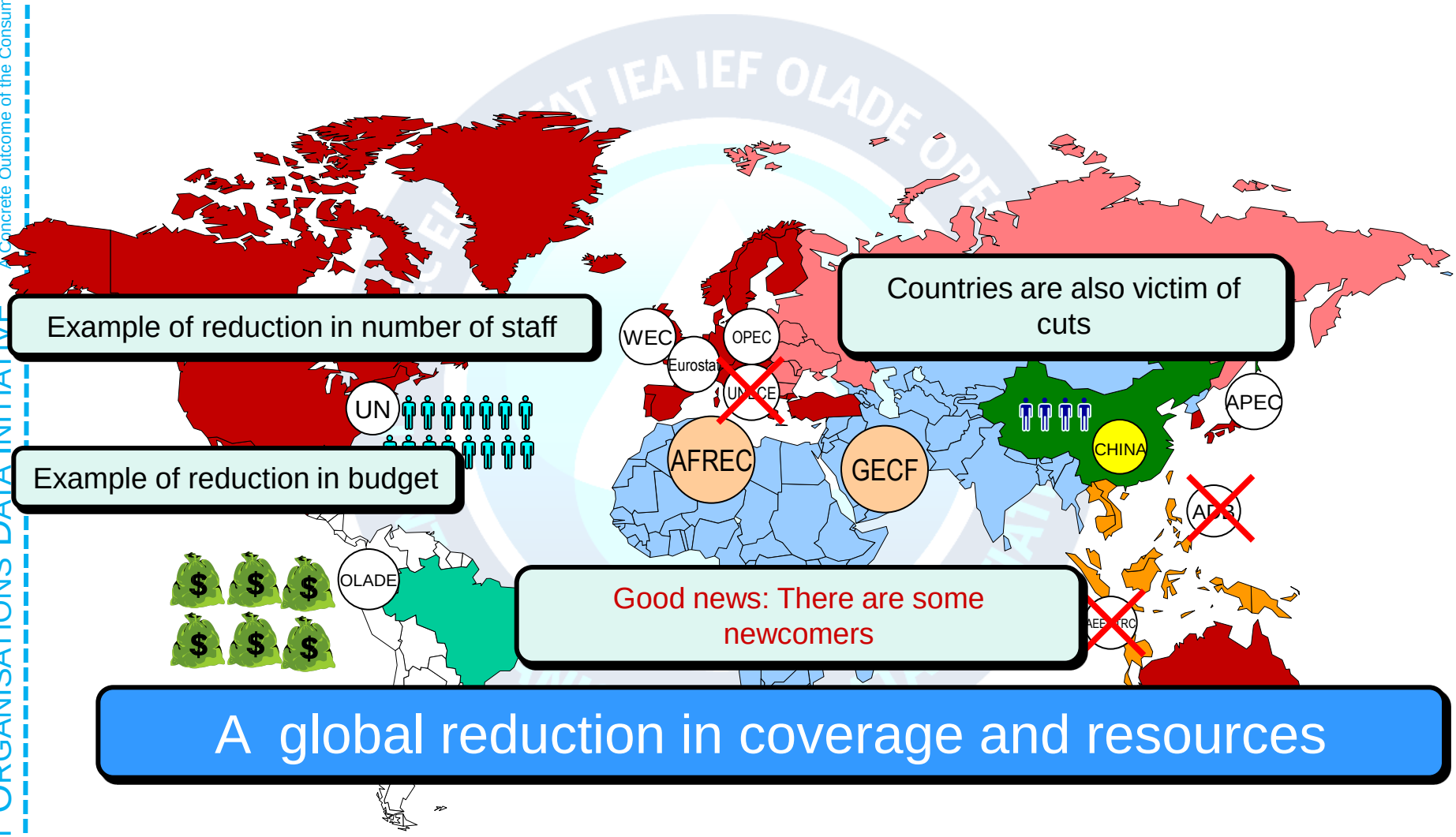
- Fast turnover in staff: Lack of experience, continuity

The problem was shared by many organisations

The Past Situation:

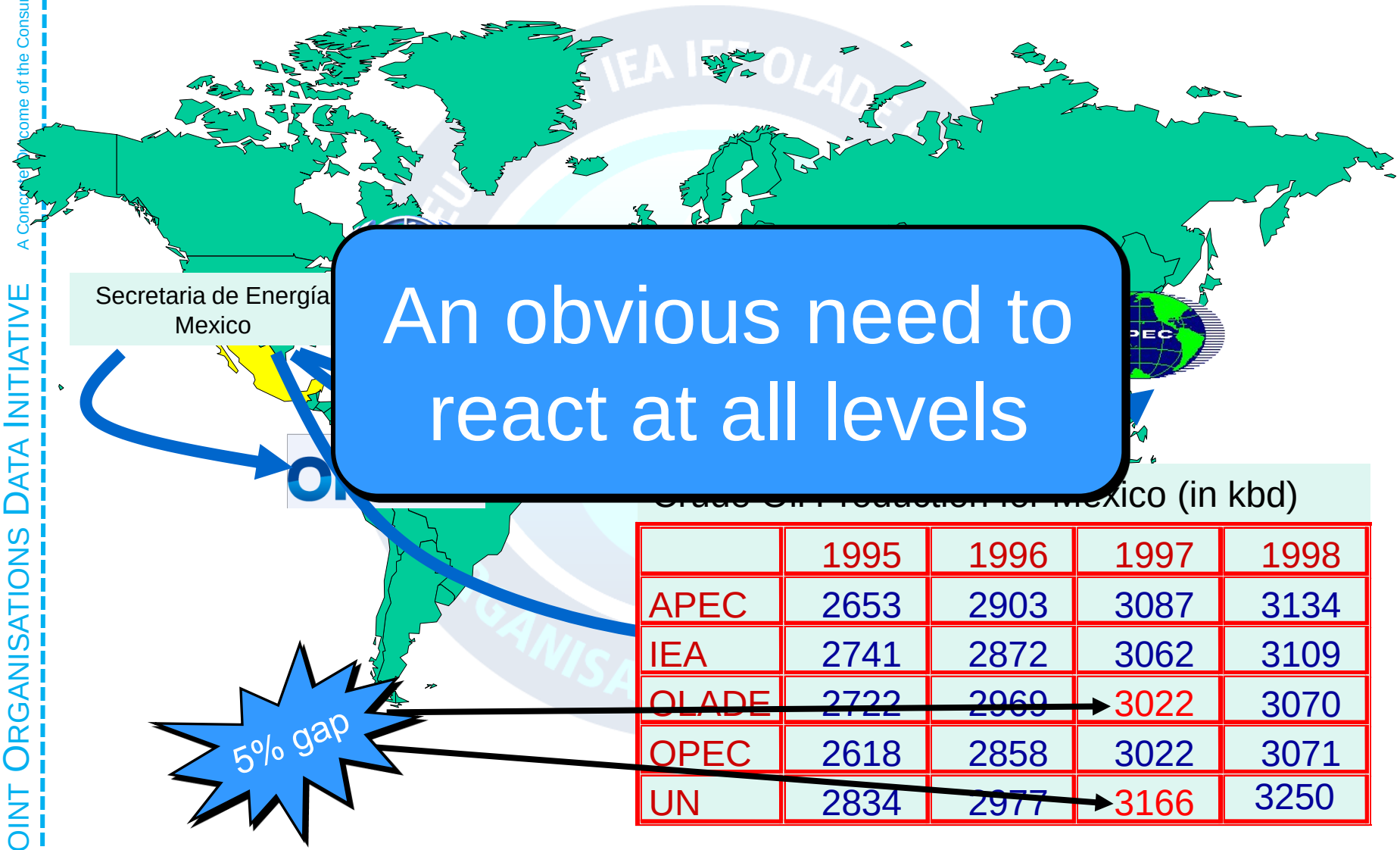


The Problem was Shared by Many Organisations



A global reduction in coverage and resources

A lack of resources, but also a 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 data

- **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

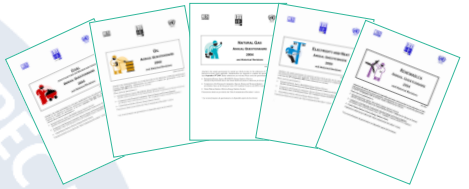
The concern expressed by the IEA was echoed by several organisations

- 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

What has already been achieved?

Cooperation encompasses various aspects

Development of energy statistics



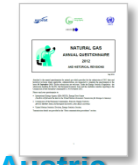
Harmonising questionnaires

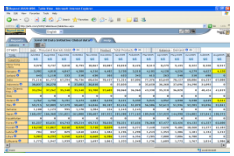
JodiGas JodiOil

Launching joit initiatives

Writing common manuals

Joint training sessions





Exchanging statistics and information

Several initiatives for better harmonisation and co-operation

- ✓ Eurostat – IEA – UNECE cooperation – longstanding!
- ✓ 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
- ✓ Joint capacity building and training
- ✓ Oslo City Group
- ✓ InterEnerStat

→ **Global initiatives**

InterEnerStat

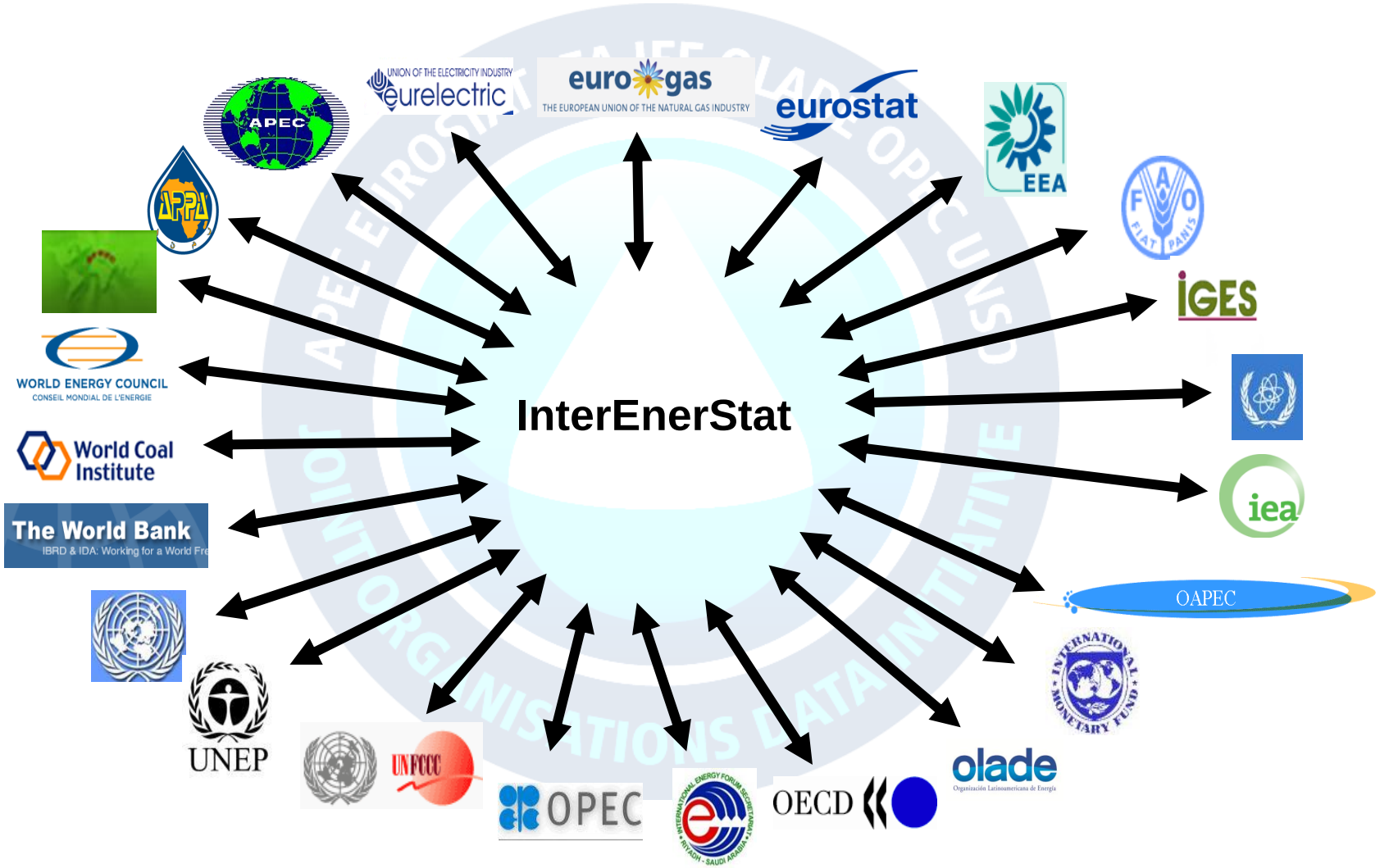
- **International Energy Statistics** initiative started by the IEA in 2005 gathering together 20+ organisations

- **Participants:**
  - 24 major regional and international organisations.
    Both data providers (IEA, UNSD, OPEC, Eurostat, FAO) and users (WB, IMF, UNFCCC,…)

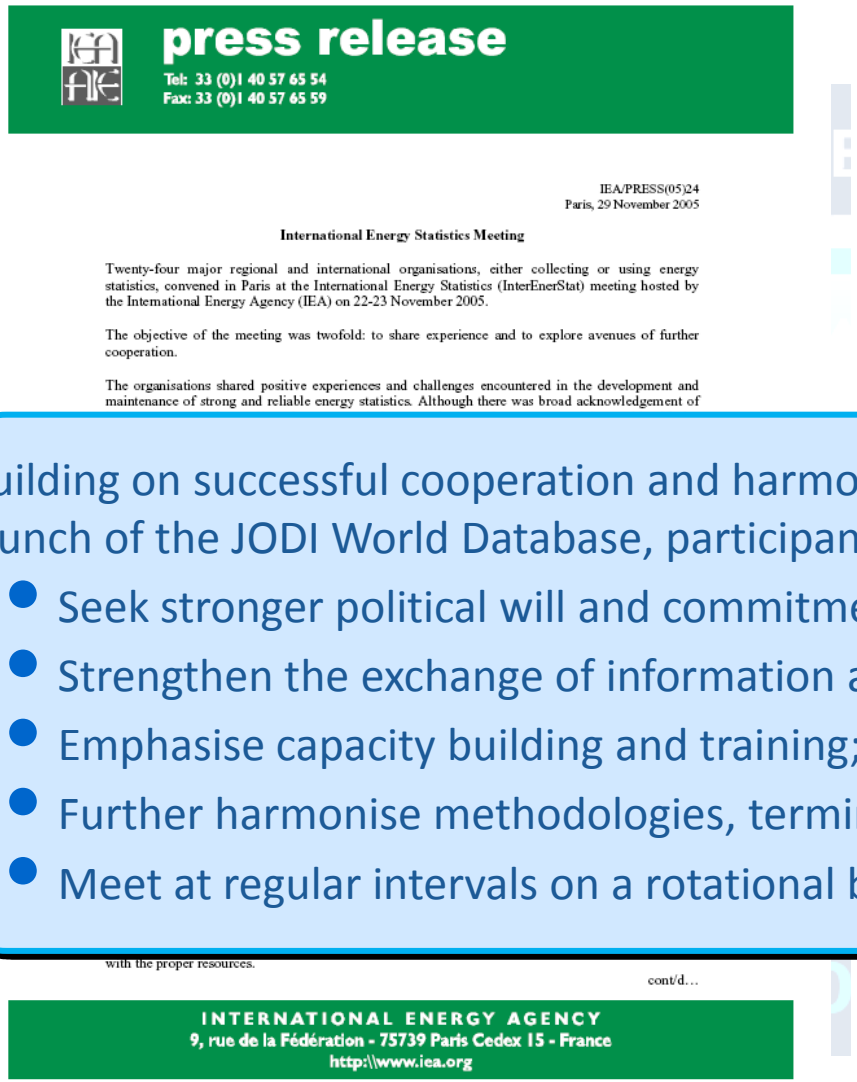
- **Objective:**
  - **To improve the overall quality of global energy statistics through a stronger international cooperation**

Organisations involved in the process

First meeting held in 2005



Participants Agreed on a Communiqué



press release

Tel: 33 (0)1 40 57 65 54
Fax: 33 (0)1 40 57 65 59

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

with the proper resources.

cont/d...

INTERNATIONAL ENERGY AGENCY
9, rue de la Fédération - 75739 Paris Cedex 15 - France
http:\\www.iea.org

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

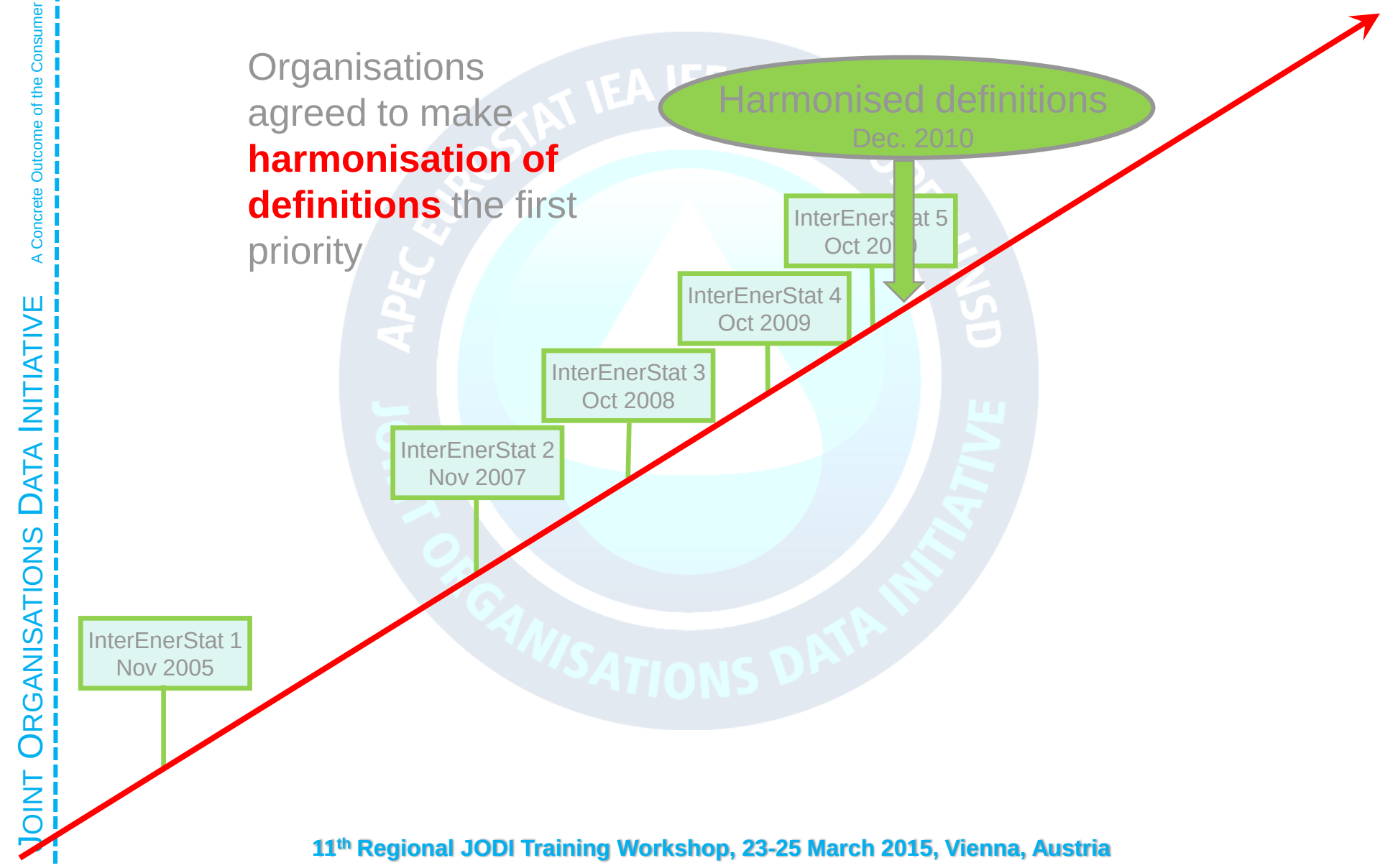
- Methodologies
- Definitions
- Units
- Conversion factors
- Harmonised demands and questionnaires
- Handbooks and manuals
- Training
- Quality framework

Co-operation

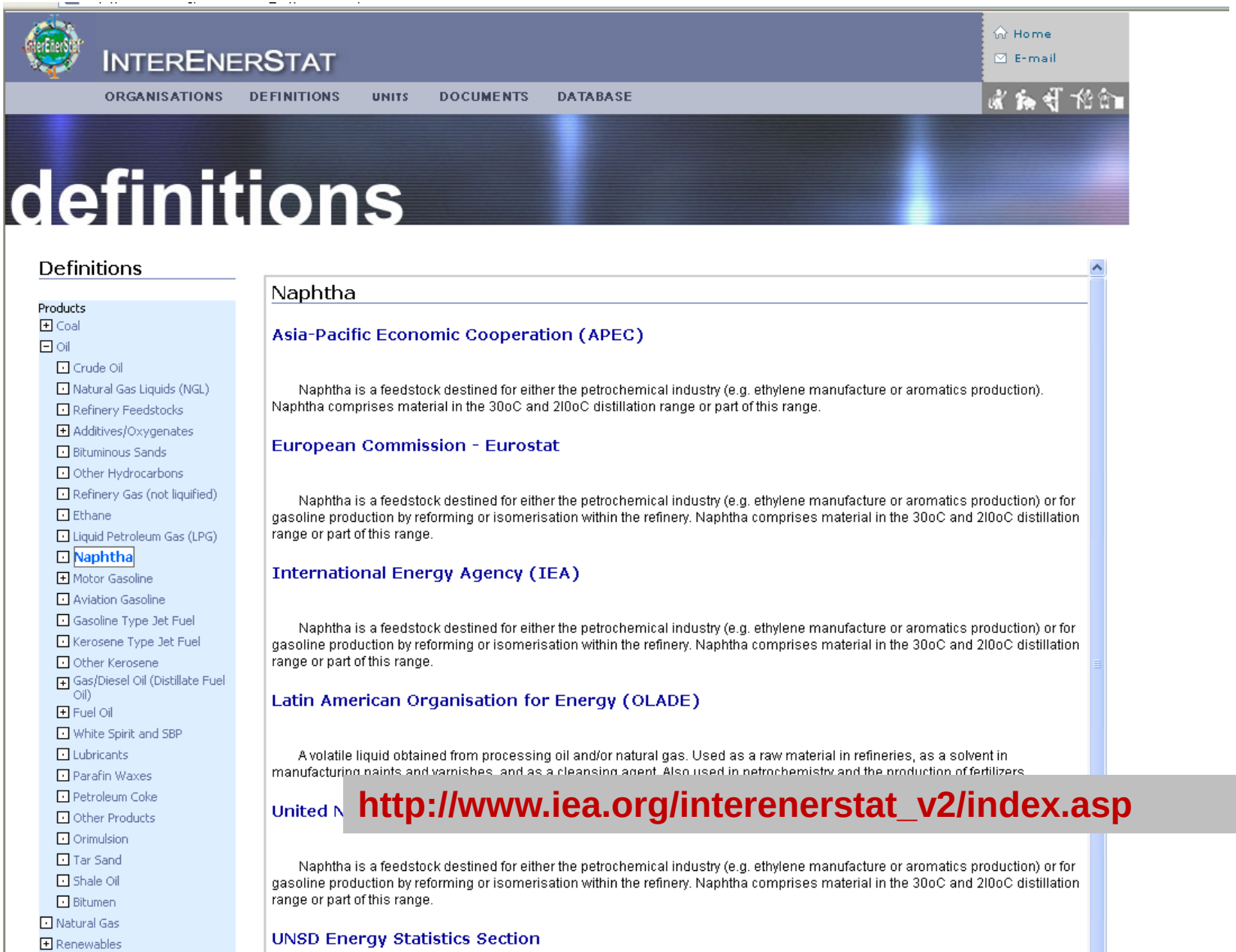
- Raising political awareness
- Harmonisation
- Joint Questionnaires
- Joint Training
- Common manuals
- Joint quality assessment
- Exchange of data

Timeline

Organisations agreed to make **harmonisation of definitions** the first priority



An overview of the InterEnerStat website



http://www.iea.org/interenerstat_v2/index.asp

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An overview of the InterEnerStat website

Agreement on harmonised definitions reached at the end of 2010 after 5 years of negotiations

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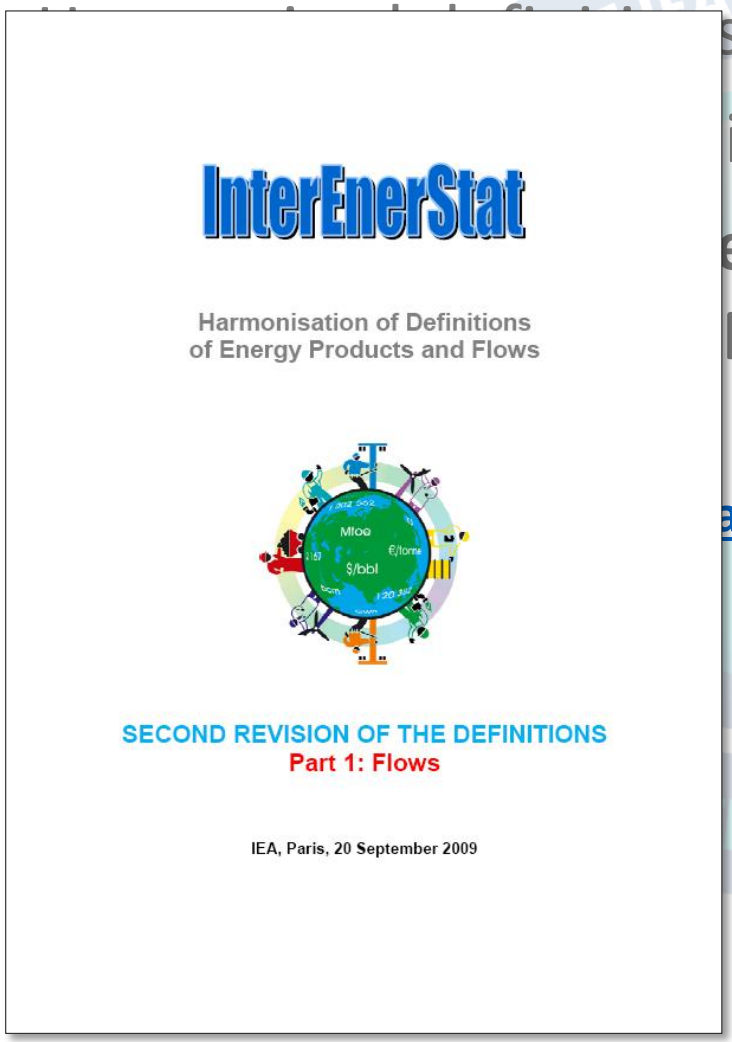

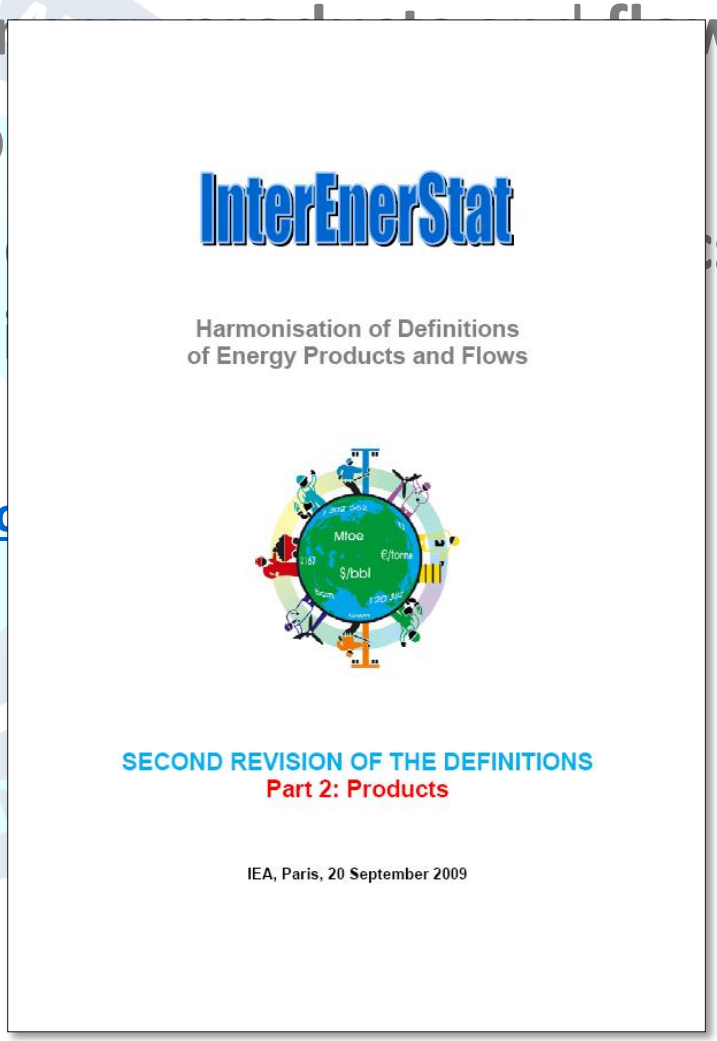

Timeline

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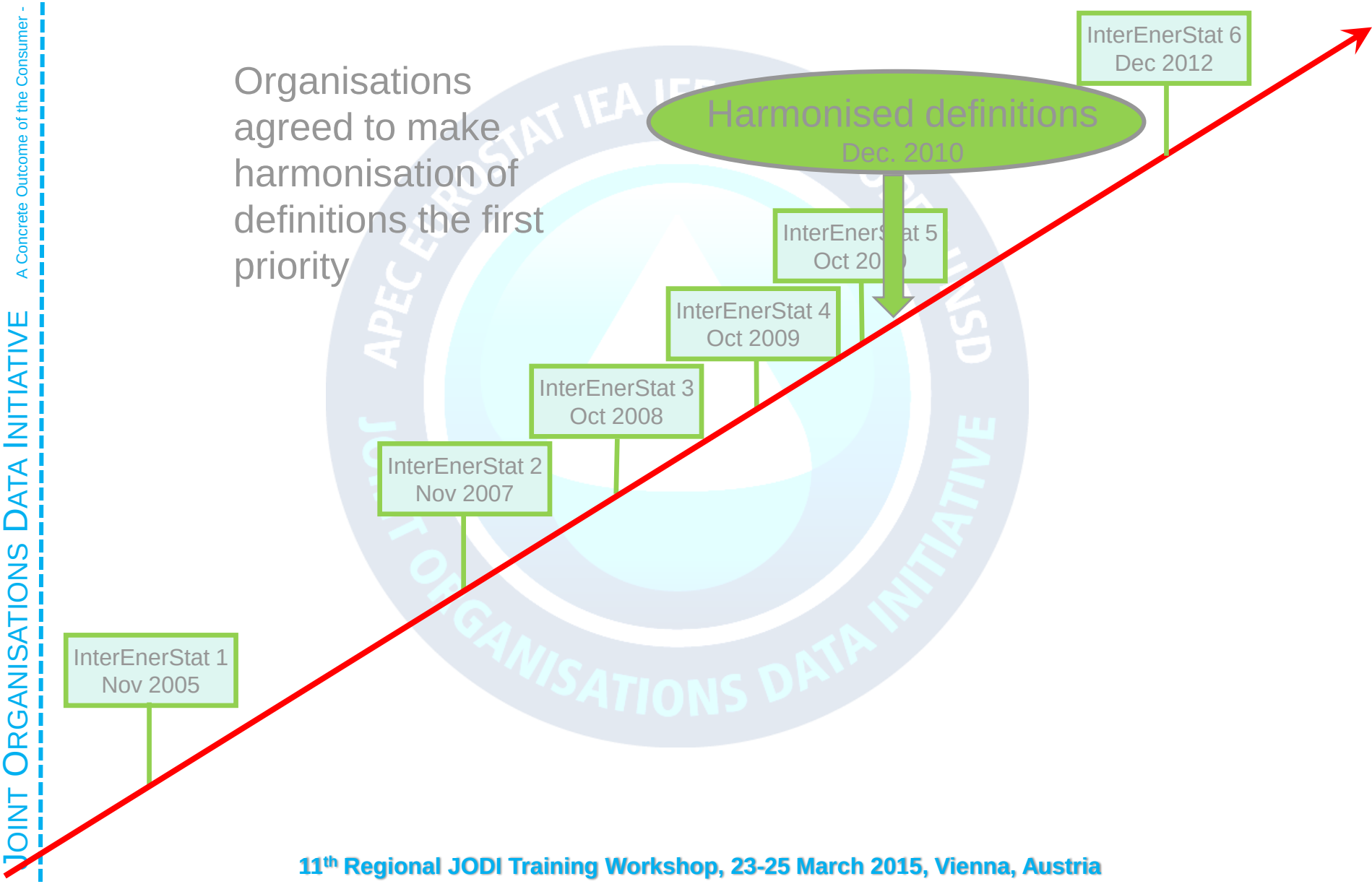


The 6th InterEnerStat Meeting

IEA, Paris, 4-5, December 2012

Energy Community

eurostat

IAEA

iea

AFREC

ENERGY

APEC

IRENA
International Renewable Energy Agency

THE WORLD BANK
Working for a World Free of Poverty

OAPEC

olade
Organización Latinoamericana de Energía

Update and progress on harmonisation

Training

UNSD

UNFCCC

UN-ESCWA

UNEP

UNITED NATIONS
ECONOMIC COMMISSION
FOR EUROPE

REN21 Renewable Energy Policy Network for the 21st Century

ome

Oslo Group

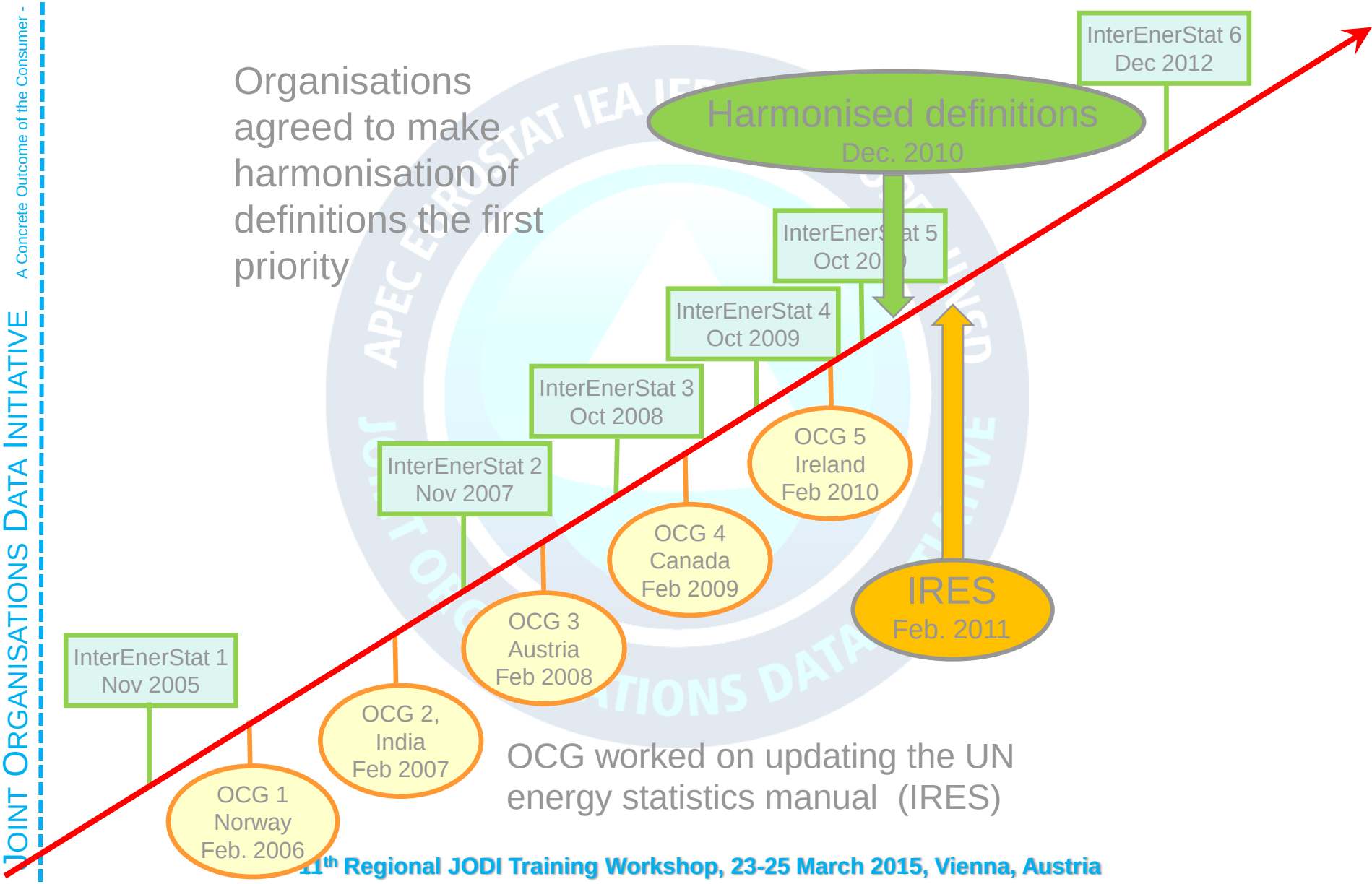
OPEC

Other participating agencies who wanted to be there: IPCC and EEA (COP in Doha), IMF, WEC

In parallel the Oslo City Group was very active

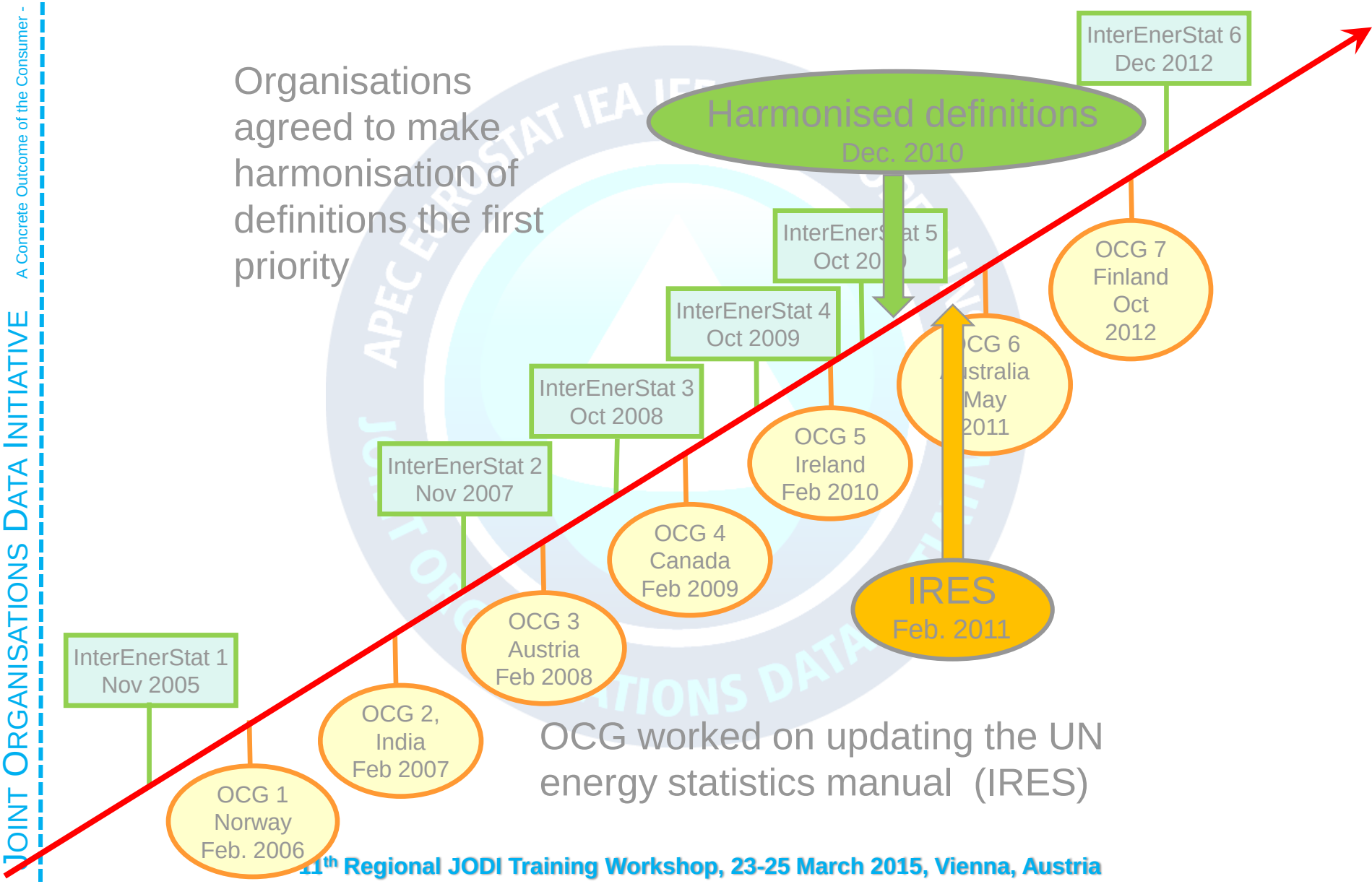
- User needs for energy statistics
- Scope of official energy statistics
- National good practices
- Selected methodological and quality problems
- Needs for harmonization of energy statistics systems
- Key content provider for International Recommendation on Energy Statistics (IRES - Feb 2011) and Energy Statistics Compilers Manual (ESCM – 2014?)
- Methods for improving consistency in different statistical systems and reducing response burden

Timeline


Organisations agreed to make harmonisation of definitions the first priority
InterEnerStat 6 Dec 2012
Harmonised definitions Dec. 2010
InterEnerStat 5 Oct 2010
InterEnerStat 4 Oct 2009
InterEnerStat 3 Oct 2008
InterEnerStat 2 Nov 2007
InterEnerStat 1 Nov 2005
OCG 1 Norway Feb. 2006
OCG 2, India Feb 2007
OCG 3 Austria Feb 2008
OCG 4 Canada Feb 2009
OCG 5 Ireland Feb 2010
IRES Feb. 2011
OCG worked on updating the UN energy statistics manual (IRES)

Timeline

Organisations agreed to make harmonisation of definitions the first priority

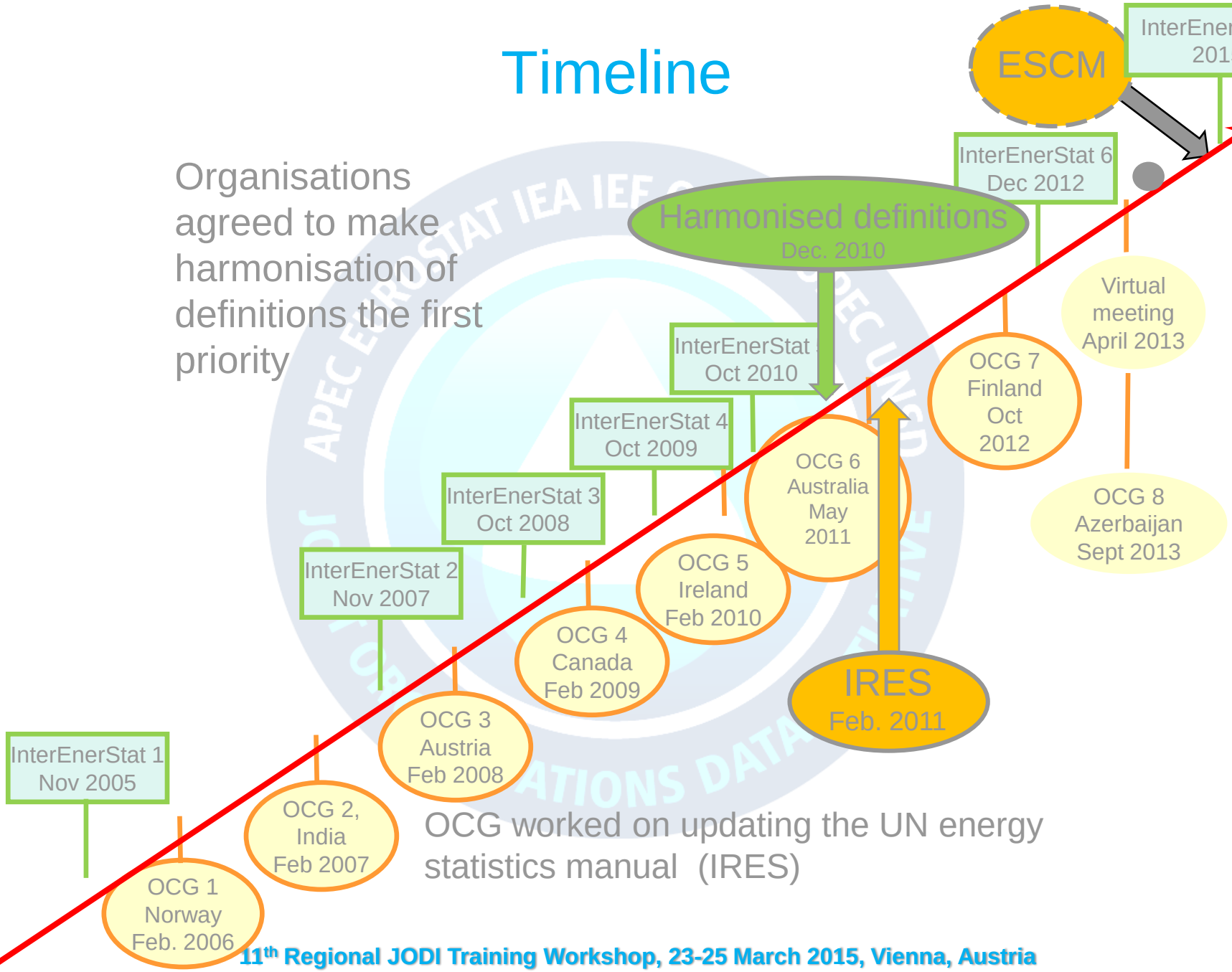


OCG worked on updating the UN energy statistics manual (IRES)

Energy Statistics Compilers Manual (ESCM)

- Intended to:
  - provide practical guidance on compilation of energy statistics, balances and accounts
  - provide more detailed guidance on recommendations contained in IRES
  - reflect successful country practices
- Prepared by UNSD in cooperation with Oslo Group and other expert groups
- Is part of the implementation of IRES as approved by the UN Statistical Commission

Timeline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InterEnerStat Oct 2010
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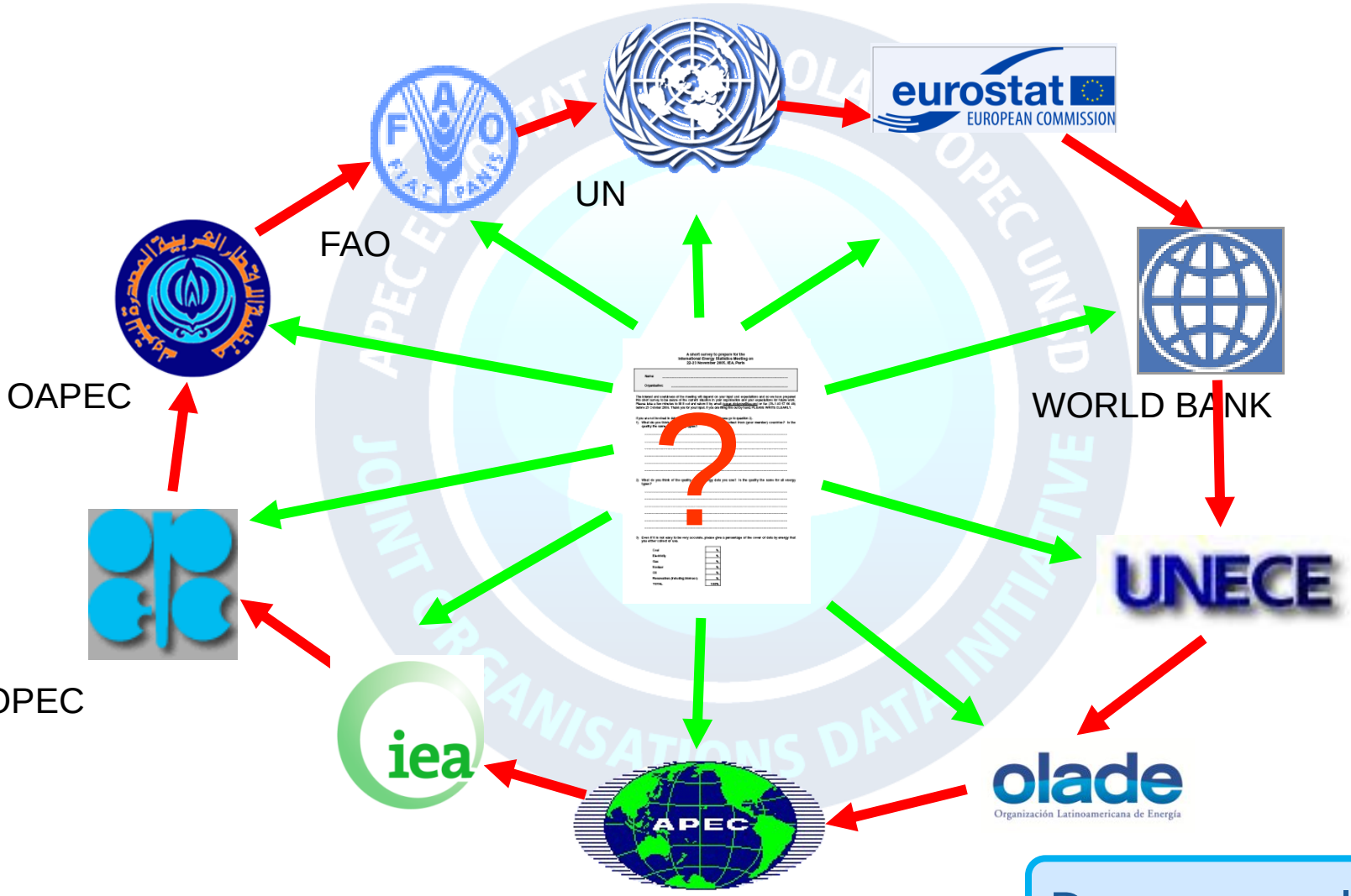
ESCM
InterEnerStat 6 Dec 2012
OCG 7 Finland Oct 2012
Virtual meeting April 2013
InterEnerStat 7 2015
OCG 8 Azerbaijan Sept 2013

Harmonisation and Cooperation

- Definitions:
  - InterEnerStat – international organisations (both providers and users of energy data)
- Methodologies:
  - Oslo City Group – countries plus a few international organisations (UNSD, IEA, Eurostat, IAEA, IMF)
- Joint capacity building and training
  - Joint Manuals: IEA/Eurostat, JODI manuals, input UN IRES and UN ESCM
  - JODI training, AFREC, APEC, OLADE etc
- What is next?
  - And….

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



Dream or reality?

A few words to conclude

- Harmonisation does not happen overnight. It needs time, effort, resources and commitment.
- A lot has been achieved: agreement on product and flow definitions (InterEnerStat and IRES and ESCM)
- Several joint initiatives: JODI Oil and JODI Gas
- Joint training and capacity building
- Underlying principle: evolution not revolution. The main objective is to support energy policy and energy analysis.
- Further cooperation includes joint training material (open university) with on-the-shelf training material (experience of OLADE in on-line training very valuable)

Thank you

For more information:

www.jodidata.org