How to improve data quality? Proposals for discussion

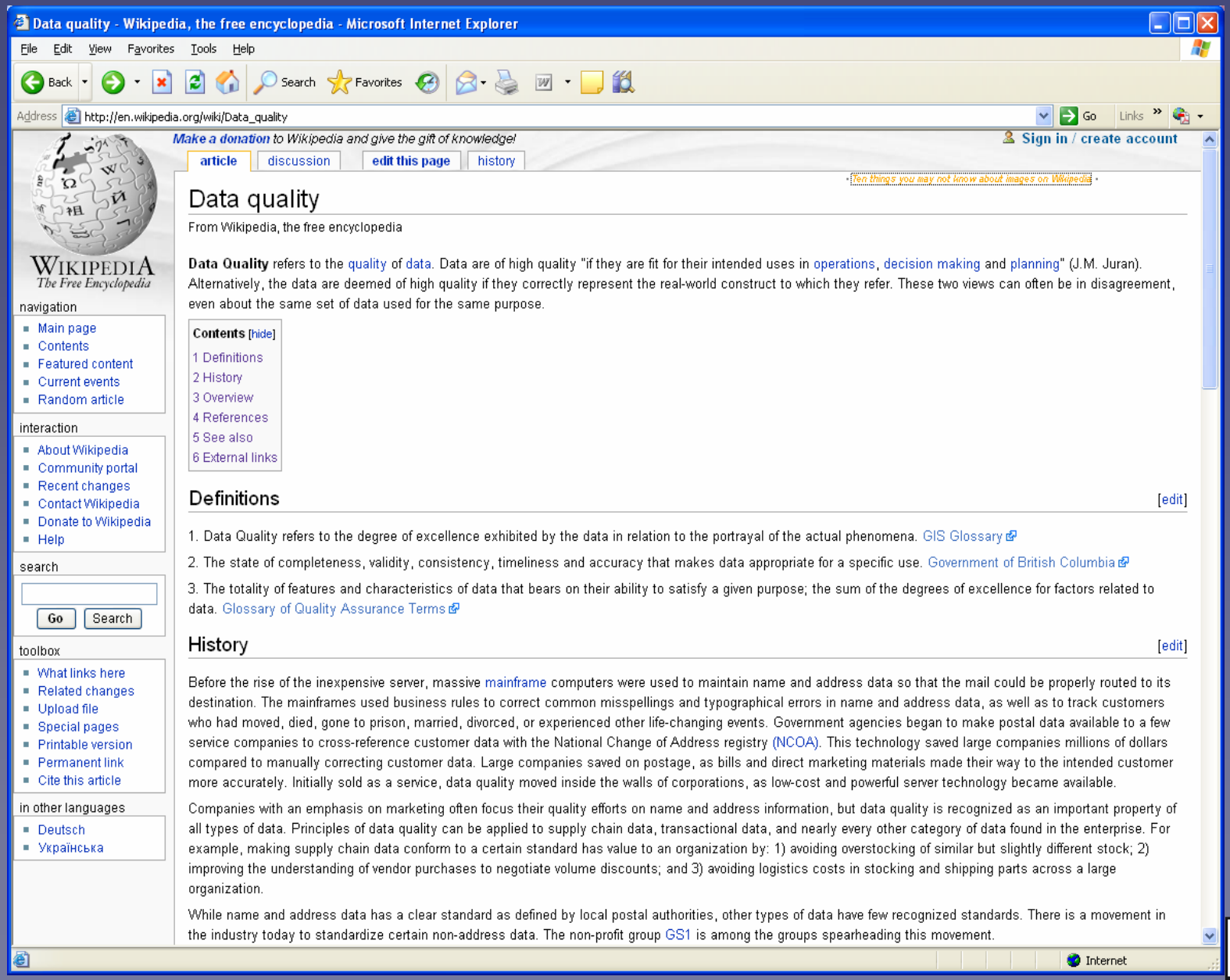
Roberta Quadrelli, IEA

InterEnerStat – Paris 19-20 November 2007

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What do we mean by data quality?

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Data quality
(Wikipedia)

- “Data quality refers to the quality of data”

...

- “The state of completeness, validity, consistency, timeliness and accuracy that makes data appropriate for a specific use”

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Data quality issues in energy statistics: examples

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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. autoproducers, ...)

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Accuracy



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

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Timeliness



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

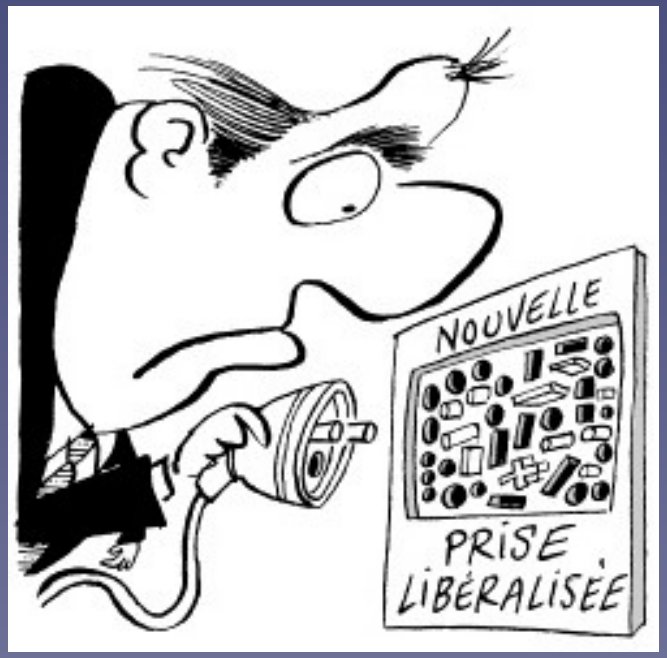
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Data quality issues in energy statistics: some reasons

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Liberalisation of the market



- From one company to hundreds
- Confidentiality

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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, ….)

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Resources do not follow work load



- Statistics still have a low profile, budget cuts
- Fast turnover in staff: lack of experience, continuity

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But data quality is essential…

…So, what do we need?

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Four broad areas for discussion

1. Proper resources
2. Easier access to data
3. Communication with / feedback to data providers
4. Proper tools to collect/process/disseminate statistics

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1 : Proper resources

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In terms of number of people



- Convince policy makers of the need for more resources→ role of organizations to draw the attention (e.g. JODI)

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In terms of competence/background/expertise



- Attract the right people
- Offer proper training
- Offer proper reference documents (manuals)

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2: Easier access to data

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Associate data providers



- E.g. JODI: Oil Industry attends JODI meetings

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Find solutions for confidentiality issues



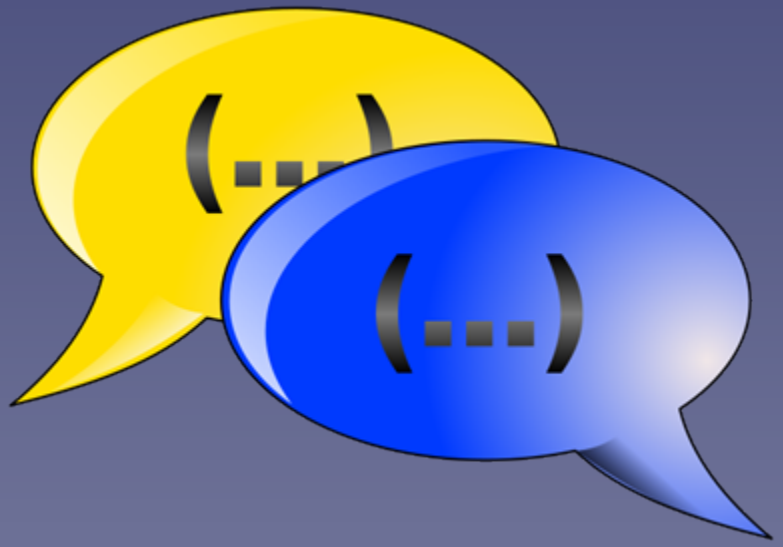
- Statistics law: one option (e.g. Eurostat)

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3: Communication with / feedback to data providers

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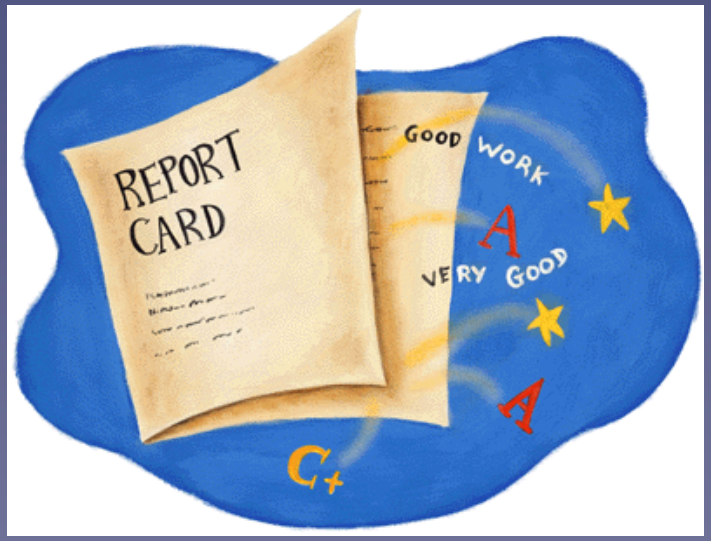
Value communication with data providers



- Acknowledge receipt of data upon reception
- Minimize delay to go back to sources if problems

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Send feedback to Policy Makers/Statisticians



- e.g. IEA Report Cards: very effective for OECD countries

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4: Proper tools to collect/process/disseminate statistics

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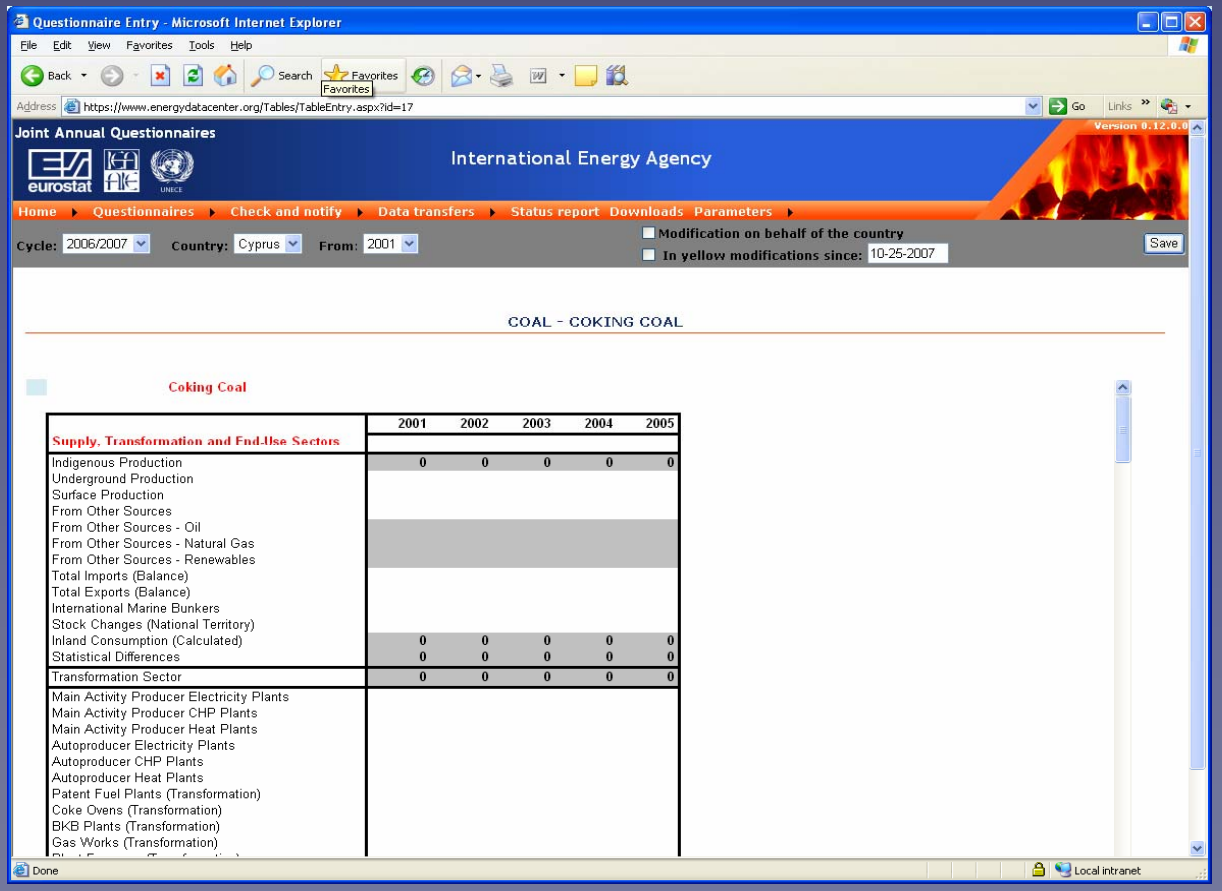
User-friendly questionnaires



- Electronic vs. paper
- Clear definitions, pre-filled time series, built-in checks...

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Exploit internet potential



- The IEA's Web interface

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Optimise dissemination



- Be proud of your work, bring value-added, a way to be visible...

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Your ideas

What would you suggest to improve data quality?

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Several different answers

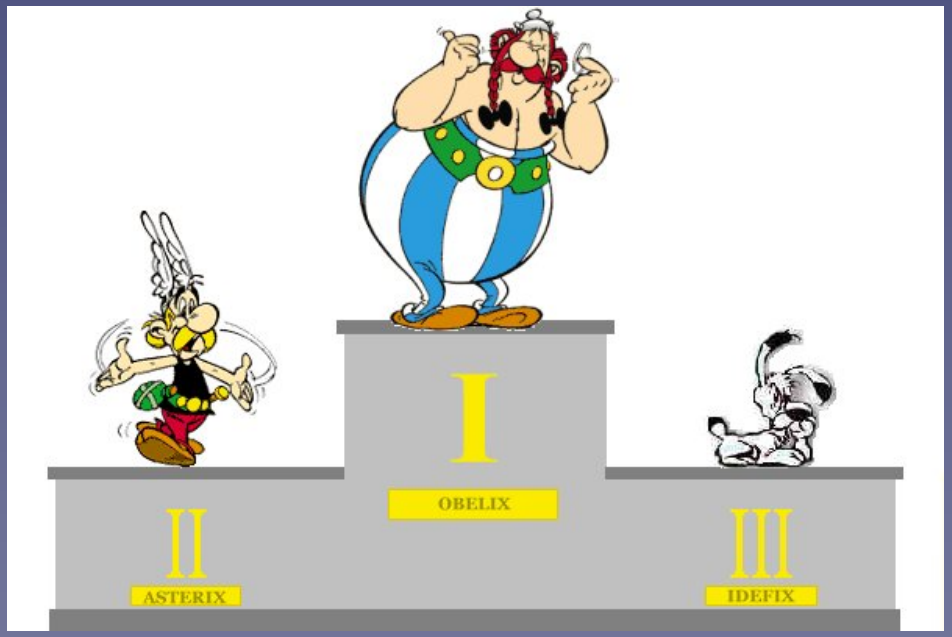
Thanks!

Some less optimistic than others...

- “I am sorry but I have no hit on any good ideas.”
  (source: confidential...)

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Which are the top-three answers?



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1: Involve policy makers (6) Political level

2: Importance of training (3) Technical level
Importance of manual (3)

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1: Involve policy makers

Several aspects mentioned:

- High-level dialogs with leaders/decision makers (APEC)
- Human/financial resources allocated by Administration linked to government priorities (IEFS)
- Address policy-makers (IEFS)
- Higher political involvement on energy statistics (OPEC)
- Strong commitment from countries (EEA)
- Raise awareness of importance of energy data (OAPEC)

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1: Involve policy makers

It is certainly a challenge....



...but can be done! (see JODI)

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2a: Importance of training



- Training (and *re-training*) (APEC)
- *Regular* training sessions (IEFS)
- Training programs (OAPEC)

Challenges: resources, fast turnover

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2b: Importance of manual



- Common statistics manual (APEC)
- Introduction of global terminology (UNECE)
- Energy statistics specific guidelines (UNSD)

Challenge: harmonisation

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Other suggestions

What would you suggest to improve data quality?

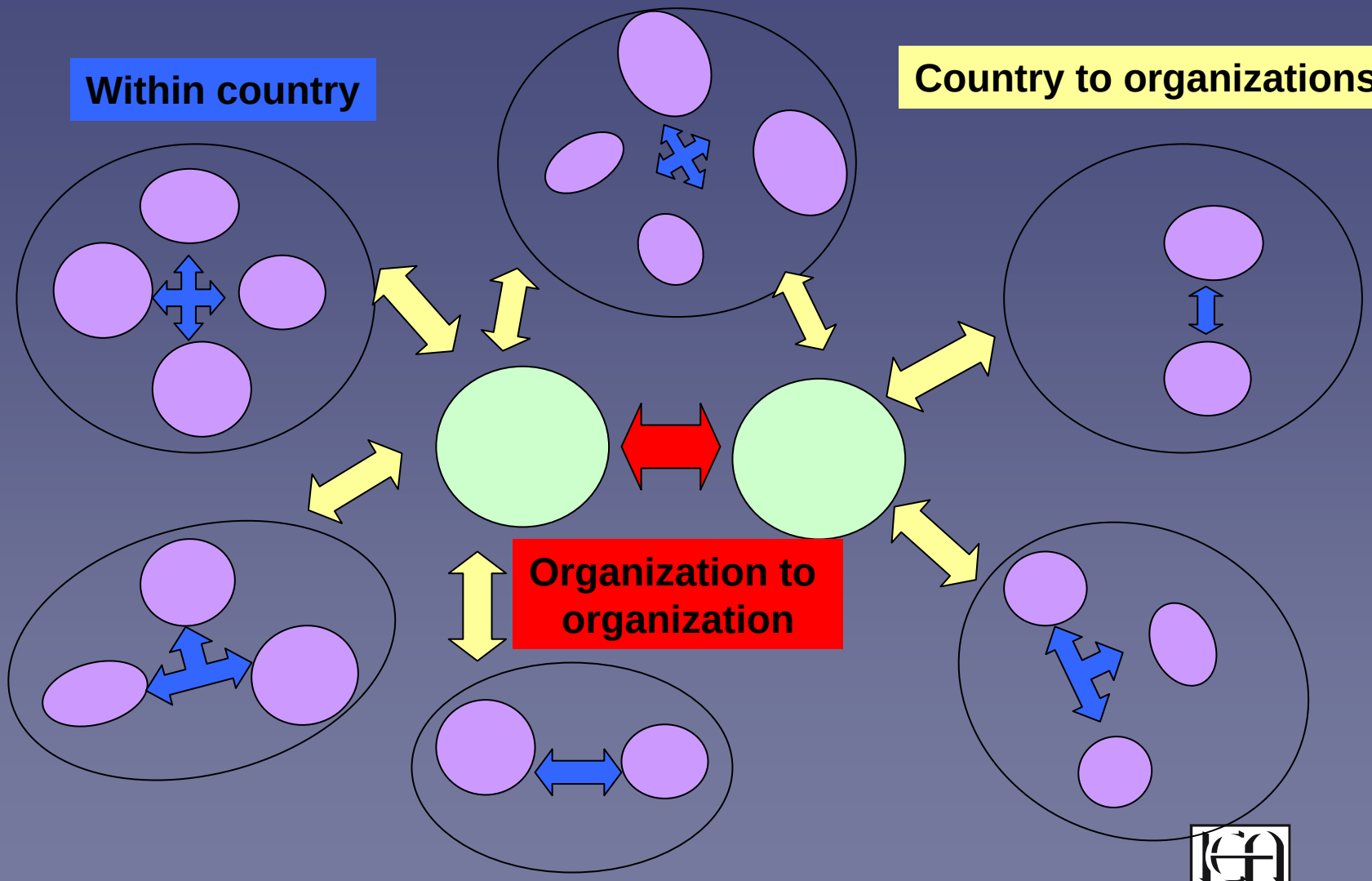
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Need to increase co-operation at several levels

- Increase inter-organization co-operation/harmonization
  - Standardization of collection/reporting (OAPEC)
  - Co-operation and co-ordination with other energy organizations (OAPEC)
- Tighten relations with countries
  - Visits to collect data (OAPEC)
  - In-country assessment about their data collection (UNSD)
- Increase co-ordination within countries
  - Dialog with energy industry players (confidentiality) (APEC)
  - Co-ordination within the country (different players in the sector) (UNSD)

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Levels of co-operation



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Need to recognize challenges for developing countries

(UNSD)

- In terms of resources

  Challenge for timeliness

- In terms of co-ordination

  Challenge for completeness

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Improvements in data quality: examples

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Examples

- Within OECD

  Report cards, Web interface

- Outside OECD

  JODI, APEC/ASEAN joint questionnaire

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Improvement in Data Quality

Is strongly linked to enhancement of

- Co-operation
- Harmonization



Thanks!

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