

Data Transparency to Understand Natural Gas Market Fundamental toward Foresighted Policy and Investment Decisions

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Outline

- Description: What is data transparency
- Energy Market: Fundamentals and Analysis
- Challenges to Energy Data Transparency
- JODI Energy Data Transparency
- JODI Energy Data in GECF
- JODI Data Quality Procedure
- GECF Data Quality Procedure
- Conclusion

Description

What is data transparency?

Technically, Data Transparency :

- The ability to easily access and work with data no matter where they are located or what application created them.
- The assurance of timely availability for complete and accurate data on essential market fundamentals and research which are coming from the official source.
- Country needs assessments for improving data capacities that are important to enabling better data provision and utilization.
- Country needs to decide which sources of energy they wish to utilize and how energy can be consumed in the most efficient way.
- Data transparency is particularly important in order to help decision-making at all levels to access the best possible data.
- Enables business to invest wisely, make the correct decisions and innovate.
- Not only about effective market operations, enables market and consumers to make decisions in an informed manner.

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Energy market

Fundamentals and Analysis

- Fundamentals : Production, trade and supply of energy.
- Analysis of various factors related to energy markets
 - ✓ Support Governments, investors, consumers and producers decisions.
 - Governments and investors: evaluating energy policies continually (investments in upstream, downstream) and new projects (alternative fuels, taxes, subsidies...).
 - Consumers and producer decisions: Energy-related data are the basis of a comprehensive information system to support relevant decisions.
- Analyzing the evolution of the fundamentals - supply, demand, stocks, etc.
- Assessing trends and potential risks in the presence of various factors.
- Significant reliance on data.

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Challenges to Energy Data Transparency

- Timely & complete release of data
- Confidentiality
- Cost
- Resources
- Inclusion of smaller energy producers & consumers
- Intra-country cooperation
- Data quality

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JODI Energy Data Transparency

- Rich and official monthly data publicly available
- Early release of important data
- Efforts to increase Energy data transparency for producer, trader and consumers
- +110 countries
- Major oil and gas flows
- +80% global market coverage
- Accessibility through JODI website
- Only 2 months reporting lag
- Revised data on monthly basis
- Including general definitions, guidelines, manuals and metadata
- Centralized/harmonized dissemination
- Jodi training workshops(+16 workshops and + 500 professionals)
- No other genuine information for some countries

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JODI Energy Data in GECF

Extensive usage of JODI data in GECF:

- GECF Monthly, Quarterly Statistical Bulletin
- GECF Expert Commentary
- GECF market analyzing research
- Assessing gas markets via official data from JODI
 - Upstream: marketed production data
 - Midstream: Gas exports and imports by pipeline and LNG
 - Downstream: demand by main consumer category
- JODI as an essential tool for improving overall transparency in the energy markets
- GECF will continue to play an important role in JODI
- JODI will continue to have a lot of conferences, meetings and trainings, methodologies and data quality

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JODI Data Quality Procedures

- **Timeliness:** Questionnaire submission time (M-2, every 10th of the month)
 - ✓ Time needed for checking and processing
- **Sustainability:** Continuous and predictable submission on MQ & AQ
 - ✓ JODI needs regular monthly submission
 - ✓ Some countries submit data with delay
- **Completeness and confidentiality:** Fill all applicable & available data-points in the questionnaires
 - ✓ Submit revised questionnaires with more accurate and complete data
 - ✓ Issue of confidentiality: Legislative issue/authorization, Market sensitive information.
- **Accessibility**

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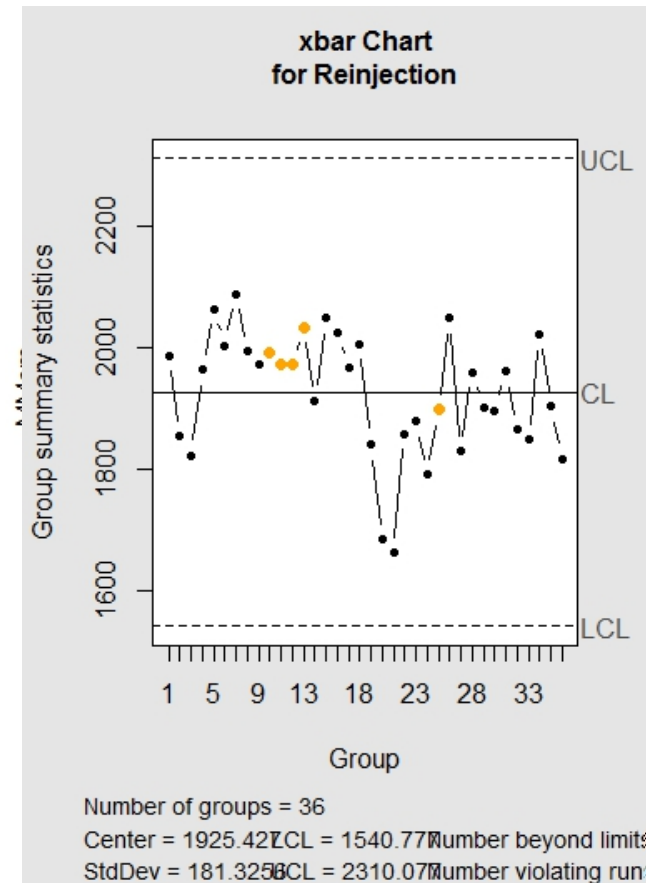
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GECF Data Quality Procedures

- Regularly (Monthly/Quarterly)
 - On Data Gathering
 - ✓ Monthly review by special envoys of data and statistics
 - On Data Collection
 - ✓ Embedded rules in GECF data bank system
 - ✓ Monthly review by GECF/DISD analysts
 - One set of data, outlier detection (methods: boxplot, leverage distance, others)
 - Confidence Interval (per country, per data point): $\pm 2.5\%$
- Annual basis
 - ✓ Multiple set of data, data modeling
 - ✓ Benchmark with (at least) three secondary sources
 - ✓ Statistical matching
 - ✓ Confidence Interval (per country, per data point): $\pm 2.5\%$

GECF Data Quality Procedures(Cont.)

- Descriptive statistics approach
 - ✓ Descriptive statistics
 - Mean, Median, . . .
 - ✓ Control charts
 - Box-plot, X-Bar, R and CUSUM
- Inferential statistics approach
 - ✓ Recognize data anomalies like missing, incomplete, ...
 - ✓ Suspicious or abnormal data e.g. outliers
 - ✓ Modelling data
 - Define “expected” and “observed”
 - Plot expected vs observed and error bounds
 - “Out of Control” if observed data fall outside bounds
 - Cook distance
 - ✓ Testing for departure from models
 - ✓ Goodness-of-fit



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Conclusion

- Data transparency requires in-depth studies on efficiency, environment, supply/demand balance.
- Having comprehensive, comparable and timely energy data will significantly help countries access policy options and investments.
- Understanding energy markets and make guidelines to formulate energy policies in countries.
- Allow investors, producers, refiners and other stakeholders in the energy business to make more informed decisions.

Conclusion

- Increased transparency of data helps to moderate unwarranted price volatility, promote informed investment decisions and, ultimately, stabilize the energy market.
- Accurate data helps analysts to form the foundation of their research and conclusions.
- Data insufficiency could lead to unfavorable policy choices.
- GECF and all our partners in JODI are trying to enhance energy data transparency, consistency and quality.

Better Data, better Decisions

Better Data, better Decisions

Thank You!

Gas Exporting Countries Forum

Data and information Services Department

JODI Energy data Transparency workshop for sustainable future

30 April – 3 May 2019 | Cape Town International Convention Centre, Cape Town, South Africa