JODI-Gas Data Reporting System, Quality Assessment

By Mr. Majid Badihi, Senior ICT Analyst
and Mr. Mohamed Arafat, Databank Analyst

Joint Organisations Data Initiative (JODI)
13th Regional Training Workshop
17 – 20 May 2016, Beijing, China
Outline

- Background (Who is the GECF, GECF Vision and Mission, GECF role in gas market)
- GECF Data Reporting Mechanism
- GECF & IEF Collaboration
- Data validation techniques
- Participation assessment (smiley face) approach
- Mapping GECF and JoDI-Gas Questionnaires
What is GECF - GECF Member and Observer Countries

MEMBERS
- Algeria
- Bolivia
- Egypt
- Equatorial Guinea
- Iran
- Libya
- Nigeria
- Qatar
- Russia
- Trinidad and Tobago
- United Arab Emirates
- Venezuela

OBSERVERS:
- Azerbaijan
- Iraq
- Kazakhstan
- The Netherlands
- Norway
- Oman
- Peru

GECF Secretariat: 47th, 48th Floor, Tornado Tower, West Bay, Doha, Qatar, Website: www.gecf.org
Background: **GECF Vision & Mission**

Supporting the rights and interests of the Member countries on gas resources

**Vision**
- To become an authentic platform for gas activities
- A credible reference in gas studies and debate
- A center for exchange of data and information on gas
- A center for policy debate on gas and energy
- A center for exchange of experience on Gas

**Mission**
- To promote the use of Gas as a clean fuel and contribute to the clean environment and sustainable development;
- To increase the market share of Gas in the global energy mix;
- To contribute to the stability of the global gas market;
- To exchange data, information and experience among member countries;
- To develop Dialogue with all stakeholders, including other producers and consumers.
GECF reporting procedure: Objectives

- Promote exchange of Data and enhance close coordination with GECF Member and Observer Countries.
- Define the reference framework to regulate the collection of Data, its consolidation and analysis.
- Identify a network of National Coordinators/Focal points for Data exchange with the GECF Secretariat.
- Define and clarify the role and responsibilities of the key players in the GECF reporting process.
- Formalize and standardize the concepts and procedures of dialogue and exchange of Data between the GECF Secretariat and the GECF Member and Observer Countries.
- Identify and approve Data categories to be exchanged between the GECF Secretariat and the GECF Member and Observer Countries.
Management of Data in the GECF is shown in the below flow chart.
GECF Data Questionnaires

Data Monthly

Data Annual

- Relevance
- Simplicity / Clarity
- Availability

- Feasibility / Deadlines
- Remarks MCs

Level of disaggregation
Mapping GECF to JoDI-Gas

JoDI-GAS Quest.

Marketed Production – From Other Sources

GECF Quest.

<table>
<thead>
<tr>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous Production</td>
</tr>
<tr>
<td>Associated</td>
</tr>
<tr>
<td>Non-Associated</td>
</tr>
<tr>
<td>Production From Other sources</td>
</tr>
<tr>
<td>Backflows</td>
</tr>
<tr>
<td>Reinjection</td>
</tr>
<tr>
<td>Shrinkage</td>
</tr>
<tr>
<td>Flared</td>
</tr>
<tr>
<td>Plants Own Use &amp; Losses</td>
</tr>
<tr>
<td>Marketed Production</td>
</tr>
<tr>
<td>LNG Production</td>
</tr>
<tr>
<td>LNG Plant Self Consumption &amp; Losses</td>
</tr>
<tr>
<td>Imports</td>
</tr>
<tr>
<td>Pipeline</td>
</tr>
<tr>
<td>Exports</td>
</tr>
<tr>
<td>Pipeline</td>
</tr>
<tr>
<td>Stock Change</td>
</tr>
<tr>
<td>Closing stocks</td>
</tr>
</tbody>
</table>

Production
Receipts from Other Sources
Imports
  LNG
  Pipeline
Exports
  LNG
  Pipeline
Stock Change
Gross Inland Deliveries (Calculated)
Statistical Difference (Calculated)
Gross Inland Deliveries Observed
  of which: Electricity and Heat Generation
Closing stocks

of which by sector
  Power Generation
  Heat Generation / Cooling
  Industrial Use
  Refineries
  Petrochemicals
  Domestic Sector
## Quality Indicators: Sustainability of Submission

### GECF DRM: Monthly Questionnaire (MQs) Sustainability*

<table>
<thead>
<tr>
<th>Year</th>
<th>Algeria</th>
<th>Bolivia</th>
<th>Egypt</th>
<th>Eq. Guinea</th>
<th>Iran</th>
<th>Libya</th>
<th>Nigeria</th>
<th>Oman</th>
<th>Qatar</th>
<th>Russia</th>
<th>Trinidad and Tobago</th>
<th>United Arab Emirates</th>
<th>Venezuela</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>67</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>11</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>95</td>
</tr>
<tr>
<td>2014</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>7</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>109</td>
</tr>
<tr>
<td>2015</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>2</td>
<td>93</td>
</tr>
<tr>
<td>2016</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>26</td>
<td>62</td>
<td>63</td>
<td>24</td>
<td>26</td>
<td>46</td>
<td>0</td>
<td>53</td>
<td>27</td>
<td>0</td>
<td>60</td>
<td>12</td>
<td>50</td>
<td>449</td>
</tr>
</tbody>
</table>

**Red**: <= 25% of the expected questionnaires

**Yellow**: > 25% & < 75% of the expected questionnaires

**Green**: > 75% of the expected questionnaires

*Sustainability*: refers to the continuity of submitting monthly gas questionnaire data to GECF, regardless of the timeliness of submission or completeness of data.

Suitability is measured as number of monthly questionnaires received from a country per year.
Quality Indicators: Sustainability of Submission

GECF Secretariat: 47th, 48th Floor, Tornado Tower, West Bay, Doha, Qatar, Website: www.gecf.org
Quality Indicators:Completeness (GECF Questionnaire)

Completeness (GECF)

Month-Year

No of Countries

0%–60% 60%–90% 90%–100% No Data

## Quality Indicators: Timeliness and Completeness

### Data Quality Assessment

<table>
<thead>
<tr>
<th>Country</th>
<th>Questionnaire</th>
<th>Timeliness (Days)</th>
<th>Completeness (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>2016 March</td>
<td>-9 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2016 February</td>
<td>-3 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2016 January</td>
<td>-1 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 December</td>
<td>-1 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 November</td>
<td>0</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 October</td>
<td>0</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 September</td>
<td>-1 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 August</td>
<td>-2 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 July</td>
<td>-14 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 June</td>
<td>-11 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 May</td>
<td>-12 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 April</td>
<td>-13 ▼</td>
<td>92 ▲</td>
</tr>
<tr>
<td>Egypt</td>
<td>2015 February</td>
<td>-1 ▼</td>
<td>92 ▲</td>
</tr>
</tbody>
</table>
Participation Assessment _ Smiley Face Approach – July to Dec 2015

From July 2015 to December 2015

[for JoDI-Gas Monthly Questionnaire Format & M-2]

<table>
<thead>
<tr>
<th>Country</th>
<th>Sustainability</th>
<th>Timeliness</th>
<th>Completeness (%)</th>
<th>Sustainability</th>
<th>Timeliness</th>
<th>Completeness (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>6</td>
<td>5</td>
<td>77%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Bolivia</td>
<td>6</td>
<td>3</td>
<td>77%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Egypt</td>
<td>6</td>
<td>6</td>
<td>77%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Eq. Guinea</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Iran</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Libya</td>
<td>4</td>
<td>0</td>
<td>77%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Oman</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Qatar</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Russia</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>6</td>
<td>0</td>
<td>77%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>6</td>
<td>0</td>
<td>20%</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Venezuela</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
</tbody>
</table>
Data Quality Visual Check: Time-Series

Oman Pipeline Import & Export

- ExportPipeline
- ImportPipeline

Oman Domestic Consumption By Sector

- PowerGeneration
- IndustrialUse
- Petrochemicals
- Refineries
- Residential
- Heat/Cooling
- CNG/Vehicles
- Derivatives

MMcm of NG

Data Quality Visual Check: Monthly Growth Rate
Data Quality  Visual Check : Monthly Growth Rate

Monthly Growth Rates 1

% Indig. Prod.  % Marketed Prod.  % Domestic Cons./Obs.

% 100

20

40

60

80

100


Monthly Growth Rates 2

% Export_Pipeline  % Export_LNG  % Imports_Pipeline  % Imports_LNG

% 150

120

90

60

30

0

-30

-60

Data Quality Visual Check: Monthly Growth Rate

Production & Consumption

- **Ind. Production**
- **Market Production**
- **Domestic Consumption (Obs.)**

![Production & Consumption Chart](chart)

Domestic Consumption By Sector

- **Power Generation**
- **Industrial Use**
- **Petrochemicals**
- **Refineries**
- **Residential**
- **Heat Cooling**
- **CNG Vehicles**
- **Derivatives**

![Domestic Consumption By Sector Chart](chart)
Thank You for Your attention

www.gecf.org
GECF Databank Platform

• GECF participation in the JoDI-Gas Data initiative is being managed as part of the organization’s integrated Data Management Process.

• **GECF Integrated Data Bank Platform**: Data Exchange Center (DEC), Daily News Brief Web and Mobile App, Energy databases / data sets, and other modules.

• **Data Exchange Center (DEC)** is the collaboration and communication database for GECF member countries’ monthly and annual questionnaires.

• **Data Transparency**: all MCs have read access to data of other countries and related statistical analytical reports.

• Future plans to expand the Databank Platform.

• GECF Databank is being developed in-house by DISD staff.
Unified GECF monthly questionnaire and related products and flows definitions are in place.
A Focal Point can browse, group, search, filter, sort monthly questionnaire data of all GECF countries.
Filter by one or more columns

Build a complex query with several conditions
Export data into different file formats including Excel.
MC Focal Point can fill the monthly questionnaire template in Excel file or directly update the web-based Data Exchange Center (DEC).
DEC Data Quality: Country Specific Data Entry Validation Rules
DEC  Data Quality: Country Specific Data Entry Validation Rules

Problems were detected during data validation. Please read the information:

- Combination of the following properties must be unique: Country, Q
- "Export Pipeline" must not be empty.
- "Indigenous Prod." must not be empty.
- "Industrial Use" must not be empty.
- "Market Production" must be less than "IndigenousProduction".
- "Power Generation" must not be empty.

Questionnaire

Questionnaire Type: GECF Mont
Country: Bolivia
MQ Date: 1/1/2015
Status Type: Planned

Indigenous Prod.: 
Associated:
Non-Associated:
From Other Resources:
Reinjection:
Flared:
Shrinkage:
Plants Own Use and Losses:
Market Production: