

Better Data – Better Decisions

JODI-Gas Data Quality Assessment

Amira Remadna

Energy Data Analyst, GECF/DISD

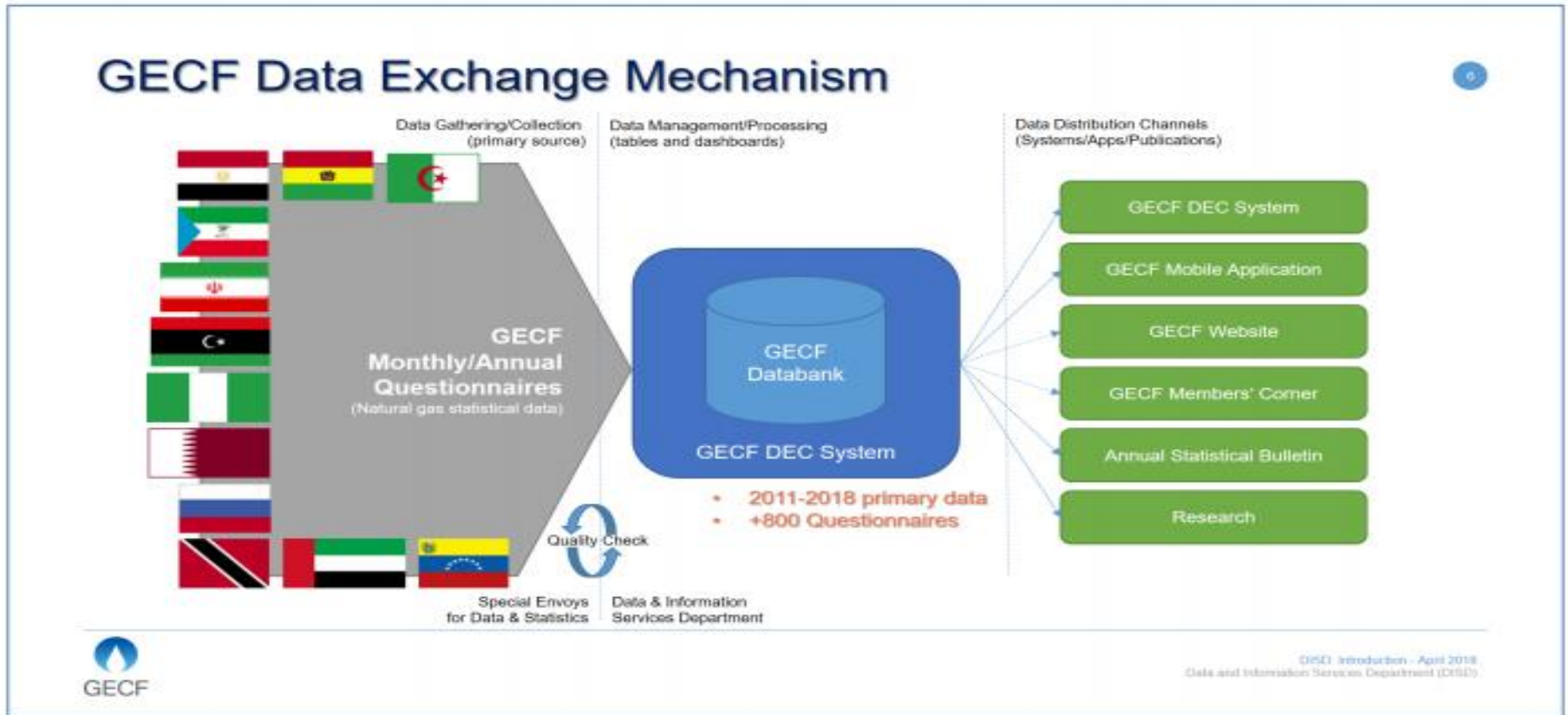
Mohamed Arafat,

Data Bank Analyst, GECF/DISD

Agenda

- 1. GECF Data Exchange Mechanism within JODI**
- 2. Data Validation Process Techniques and Tools**
- 3. Consistency with other Data Sources**
- 4. Data Quality Assessment Indicators**
- 5. Participation Assessment (Smiley Faces) Approach**
- 6. Data Transparency within GECF**

GECF Data Exchange Mechanism



Data Exchange Mechanism is the main instrument that ensures collaboration and cooperation among GECF Member Countries.

It defines the Data to be shared and exchanged, builds official channels of communication and leads to Data coordination, circulation and dissemination.

Data Collection through Questionnaires (monthly and annual), defined and approved by SEDAS

1. GECF Data Reporting Mechanism within JODI



Pipeline Imports/Exports: The import/export of gaseous natural gas through pipelines, to be reported in TJ and million cubic metres.

LNG Imports/Exports: The import/export of liquefied natural gas (LNG) through ocean tankers, to be reported in TJ, million cubic metres or metric tons (always on a re-gasified equivalent basis).

Stock Change: Stock Change should reflect the difference between the closing stock level and the opening stock level of recoverable gas, already extracted. A stock build is shown as a positive number, and a stock draw as a negative number.

Gross Inland Deliveries (Calculated): This is defined as: Production + Receipts from Other Sources + Imports - Exports - Stock Change.

Statistical Difference (Calculated): This is the difference between the Calculated and Observed Gross Inland Deliveries. Reasons for any major differences should be stated on the remarks sheet.

Gross Inland Deliveries (Observed): This category represents deliveries of marketable gas to the inland market, including gas used by the gas industry for heating and operation of their equipment (i.e. consumption in gas extraction, in the pipeline system and in processing plants); losses in distribution should also be included. Deliveries to international marine and aviation business should be included.

Of which: Electricity and Heat Generation: This covers the deliveries of natural gas for the generation of electricity and heat in power plants. Both main-activity and autoproducer plants are included.

Closing Stocks Closing Stocks refer to the stock level held on the national territory on the last day of the reference month.

NOTE THIS: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

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Reporting and manufacturing with common factors: The JODI-Gas World Database data are from the GECF.

Country specific notes: The JODI-Gas World Database data are from the GECF.

Outstanding data issues: The JODI-Gas World Database data are from the GECF.

Algeria: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Argentina: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Australia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Azerbaijan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Bahrain: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Bangladesh: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Belgium: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Bolivia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Brazil: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Bulgaria: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Canada: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Chad: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Chile: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Colombia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Costa Rica: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Czechia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Denmark: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Dominican Republic: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Ecuador: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Egypt: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

El Salvador: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Ethiopia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Finland: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

France: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Germany: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Ghana: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Greece: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Guatemala: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Guinea: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Guinea-Bissau: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Guyana: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Honduras: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Hong Kong: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Hungary: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Iceland: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

India: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Indonesia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Iraq: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Israel: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Italy: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Japan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Jordan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Kazakhstan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Kenya: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Kuwait: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Kyrgyzstan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Laos: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Latvia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Lebanon: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Lithuania: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Luxembourg: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Macao: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Madagascar: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Malaysia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Maldives: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mali: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Malta: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mauritania: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mauritius: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mexico: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Moldova: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Monaco: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mongolia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Montenegro: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Morocco: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Mozambique: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Myanmar: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Namibia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Nepal: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Netherlands: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

New Zealand: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Nicaragua: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Niger: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Nigeria: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Norway: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Oman: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Pakistan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Panama: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Paraguay: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Peru: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

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Portugal: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Romania: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Russian Federation: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Rwanda: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Saudi Arabia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Serbia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Singapore: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Slovakia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Slovenia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

South Africa: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

South Korea: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Spain: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Sri Lanka: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Sudan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Sweden: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Switzerland: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Taiwan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Tajikistan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Thailand: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Timor-Leste: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Trinidad and Tobago: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Turkey: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Turkmenistan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Uganda: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Ukraine: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

United Arab Emirates: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

United Kingdom: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

United States: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Uzbekistan: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Venezuela: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Viet Nam: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Yemen: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Zambia: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

Zimbabwe: Reporting and manufacturing with common factors. The JODI-Gas World Database data are from the GECF.

JODI Questionnaire

Data Flows Definitions

GECF Data Exchange Mechanism

Metadata

1.1. JODI Gas Questionnaire

- JODI WEBSITE : You can download Jodi databases in IVT and CSV file formats from <https://www.jodidata.org/> website.

JOINT ORGANISATION DATA INITIATIVE - GAS QUESTIONNAIRE

Country _____
 Month _____
 Year _____

	Natural Gas in million m ³ (at 15°C, 760 mm hg)	Natural Gas in Terajoules	Natural Gas (LNG) in 1000 metric tons
Production			
Receipts from Other Sources			
Imports			
LNG			
Pipeline			
Exports			
LNG			
Pipeline			
Stock Change			
Gross Inland Deliveries (Calculated)	0	0	0
Statistical Difference (Calculated)	0	0	0
Gross Inland Deliveries Observed			
<i>of which: Electricity and Heat Generation</i>			
Closing stocks			

Mass to volume conversion factor of LNG (if you have specific figure)
 m³/metric ton _____ LNG
 Conversion factor _____

APEC Energy Working Group eurostat EUROPEAN COMMISSION GECF IEA IEF olade UNCTAD UN

Beyond 20/20 Professional Browser - JODI Gas World

File Edit View Dimension Item Data Window Help

Unit

JODI Gas World

Product: Natural Gas BALANCE: Production Unit: Standard Cubic Metres

Country	TIME	2009-01	2009-02	2009-03	2009-04	2009-05	2009-06	2009-07	2009-08	2009-09
Oman		0	0	0	0	0	0	0	0	0
Papua New Guinea		0	0	0	0	0	0	0	0	0
Peru		359	310	374	334	394	413	437	448	4
Philippines		249	272	320	323	341	331	351	335	3
Poland		0	0	0	0	0	0	0	0	0
Portugal		0	0	0	0	0	0	0	0	0
Qatar		0	0	0	0	0	0	0	0	0
Romania		0	0	0	0	0	0	0	0	0
Russian Federation		54,012	48,814	48,166	43,369	39,629	36,106	40,949	42,851	45.2
Singapore		0	0	0	0	0	0	0	0	0
Slovak Republic		0	0	0	0	0	0	0	0	0
Slovenia		0	0	0	0	0	0	0	0	0
South Africa		0	0	0	0	0	0	0	0	0
Spain		0	0	0	0	0	0	0	0	0
Sweden		0	0	0	0	0	0	0	0	0
Switzerland		0	0	0	0	0	0	0	0	0
Thailand		2,529	2,183	2,667	2,379	2,762	2,567	2,544	2,576	2.5
Trinidad/Tobago		0	0	0	0	0	0	0	0	0
Tunisia		0	0	0	0	0	0	0	0	0
Turkey		0	0	0	0	0	0	0	0	0
Ukraine		0	0	0	0	0	0	0	0	0

1.2. Data Flows Definitions

Definitions :

Is it growth Indigenous Production or Dry Marketable Production?
 How to report Transit Gas ?

Units : Volumetric, Energy and Mass Units.
 Mind the conversion factors !

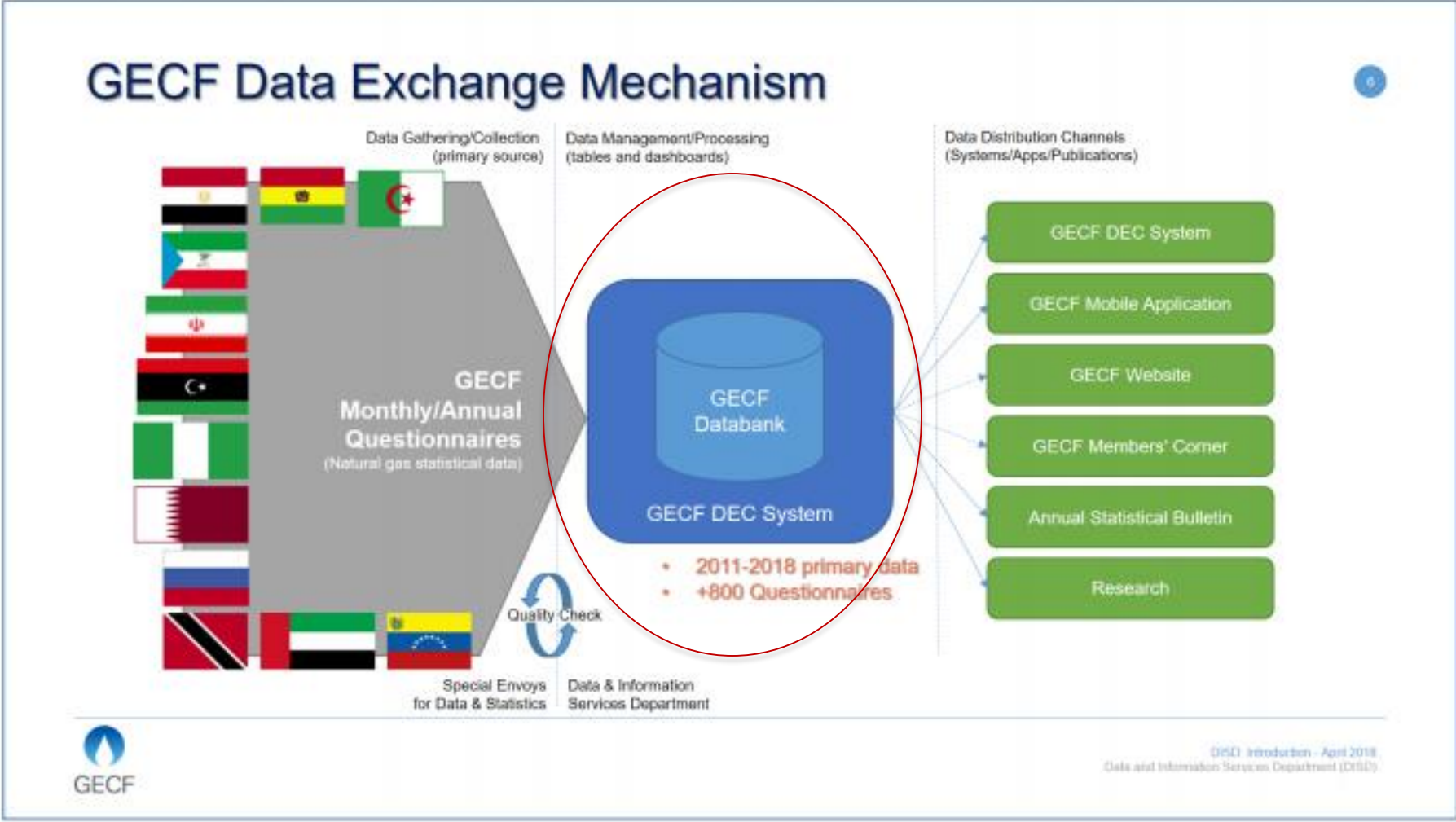
Meta Data : info about deviations from the definitions or explanation about unusual data.

JOINT ORGANISATION DATA INITIATIVE - GAS QUESTIONNAIRE			
	Country _____		
	Month _____		
	Year _____		
	Natural Gas in million m ³ (at 15°C, 760 mm hg)	Natural Gas in Terajoules	Natural Gas (LNG) in 1000 metric tons
Production			
Receipts from Other Sources			
Imports			
<i>LNG</i>			
<i>Pipeline</i>			
Exports			
<i>LNG</i>			
<i>Pipeline</i>			
Stock Change			
Gross Inland Deliveries (Calculated)	0	0	
Statistical Difference (Calculated)	0	0	
Gross Inland Deliveries Observed			
<i>of which: Electricity and Heat Generation</i>			
Closing stocks			
Mass to volume conversion factor of LNG (if you have specific figure)			
	m ³ /metric ton	LNG	
Conversion factor			



BETTER DATA
 BETTER DECISIONS

1.3. GECF Data Exchange Center



1.3. GECF Data Exchange Center (DEC)

- A centralized multi modular system that consists of a web-based integrated platform that manages GECF primary and secondary data through a wide range of databases, predefined and customized dashboards, and ensures exchange of data and statistics among GECF countries.
- Modules of DEC:

GECF Data Bank (Primary data): Monthly and Annually

Data Quality Assessment and Measurement indicators

Dashboards Analysis

Gas Annual Data-Annual Statistical Bulletin

JODI World Gas Database

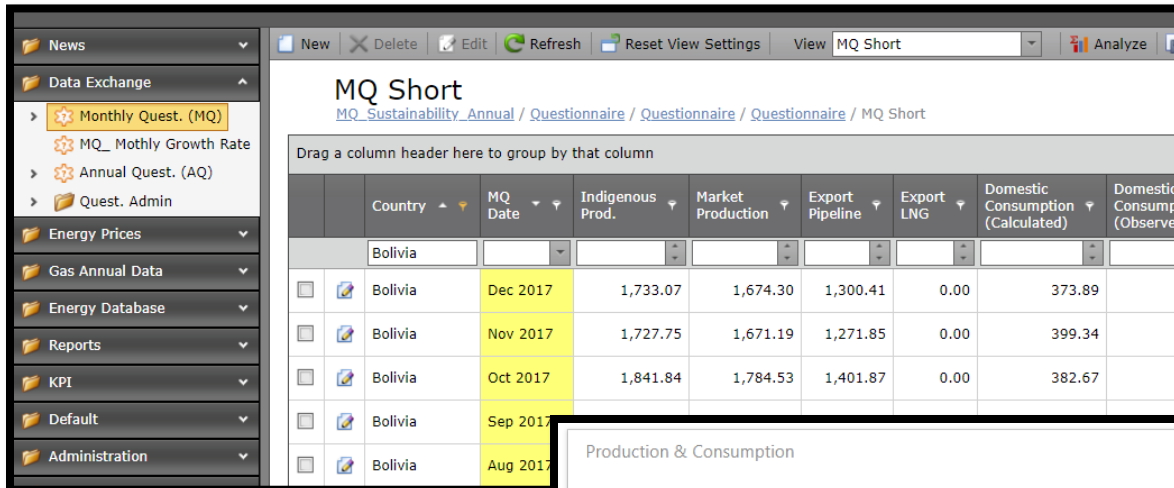
Energy Database: Coal, Renewables, Power, etc.

Gas Prices

Energy Market News

1.3. Data Exchange Center DEC (Cont.)

- DEC is a data collection, analysis and reporting system accessible to all GECF countries.

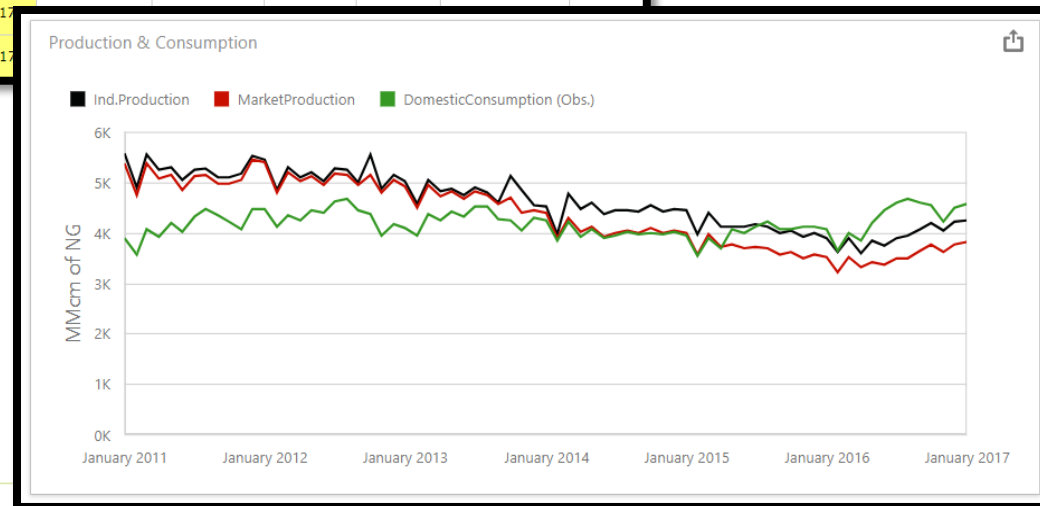


The screenshot shows the DEC interface with a table titled "MQ Short". The table has columns for Country, MQ Date, Indigenous Prod., Market Production, Export Pipeline, Export LNG, Domestic Consumption (Calculated), and Domestic Consump (Observed). The data is filtered for Bolivia and shows monthly data from August 2017 to December 2017.

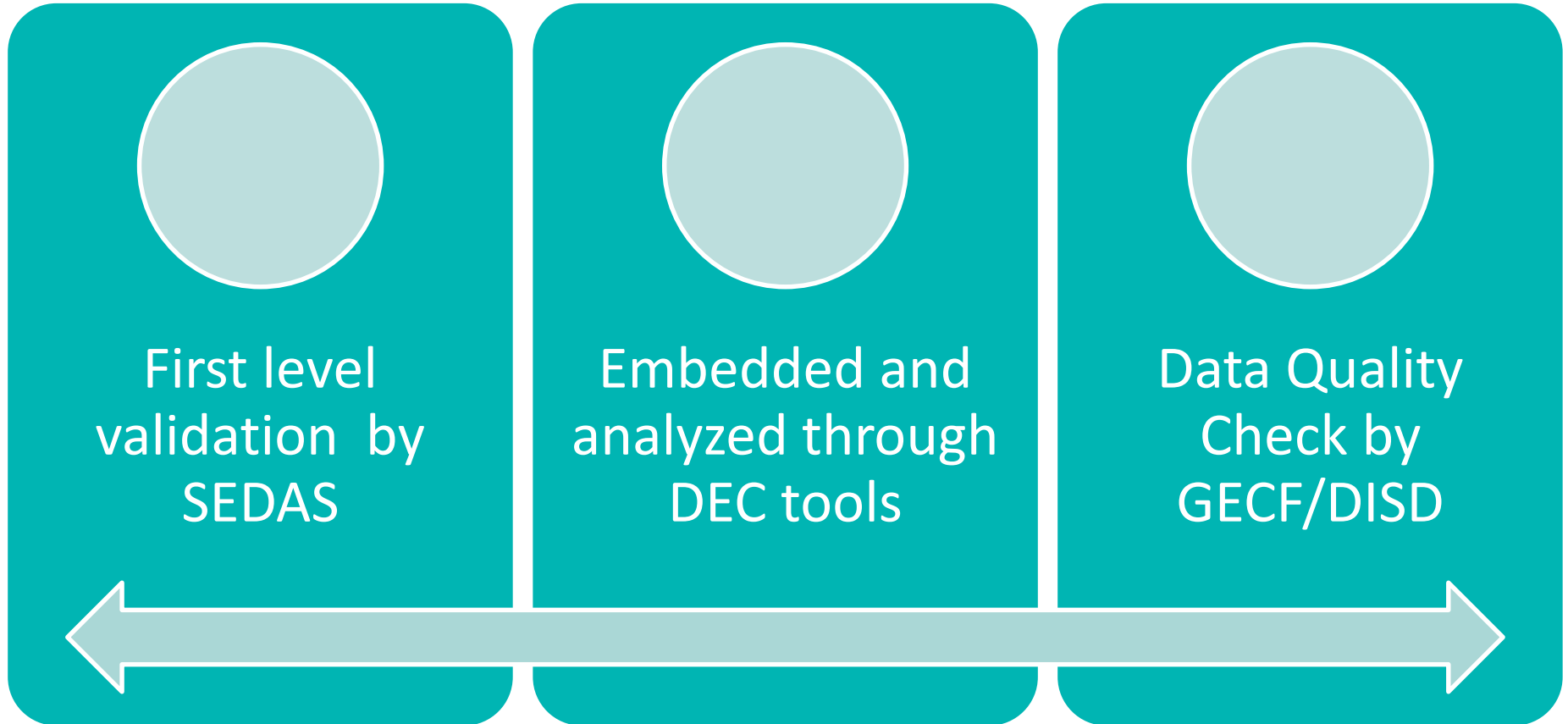
	Country	MQ Date	Indigenous Prod.	Market Production	Export Pipeline	Export LNG	Domestic Consumption (Calculated)	Domestic Consump (Observed)
	Bolivia	Dec 2017	1,733.07	1,674.30	1,300.41	0.00	373.89	
	Bolivia	Nov 2017	1,727.75	1,671.19	1,271.85	0.00	399.34	
	Bolivia	Oct 2017	1,841.84	1,784.53	1,401.87	0.00	382.67	
	Bolivia	Sep 2017						
	Bolivia	Aug 2017						

DEC User can retrieve gas (and other energy) data, use system dashboards for analysis or quality check.

Everything can be exported to Excel.



2.Data Validation Process, Techniques and Tools



2.Data Validation Process, Techniques and Tools (Cont.)

- a. SEDAS First Level Validation
- b. DEC system : Data Entry Validation Rules-
Automated feedback
- c. Data Quality Check
 - Time Series Trends
 - Seasonal patterns
 - Monthly variations and changes
 - Visual Check
 - Dashboards Analysis
 - Consistency with other sources

2.1. SEDAS First Level Validation

- All Member Countries' Ministers were called to appoint Special Envoys.
- Data Collection through Questionnaires (monthly and annual), defined and approved by SEDAS.
- Data gathering/collection for each MC, Validation and transmission to GECF/DISD.

2.2. DEC system : Data Entry Validation Rules- Automated feedback

Problems were detected during data validation. Please read the information below to understand what the issues are and how you can correct them.

9/1/2018 12:00:00 AM

- "Unit_LNG" must not be empty.
- "Unit_NG" must not be empty.
- Combination of the following properties must be unique: Country, Questionnaire Type, MQ Date. The following objects are found: 9/1/2018 12:00:00 AM

9/1/2018 12:00:00 AM

- "Export Pipeline" must not be empty.
- "Indigenous Prod." must not be empty.
- "Industrial Use" must not be empty.
- "Market Production" must be less than "Indigenous Prod."
- "Power Generation" must not be empty.

Questionnaire

Questionnaire Type: Planned Submission Date: Time Lines:

Country: Actual Submission:

MQ Date: Approval Date:

Status Type: Revised Date:

Unit_NG: Revised Approval:

Unit_LNG:

Questionnaire Details

Indigenous Prod.: Clarification:

Associated: Clarification:

Non-Associated: Clarification:

From Other Resources: Clarification:

Reinjection: Clarification:

Flared: Clarification:

- Monthly Quest. (MQ)
- MQ_Mothly Growth Rate
- Annual Quest. (AQ)
- Quest. Admin
 - Questionnaire Type
 - Validation Rule**
 - Measure Unit Conversion
- Energy Prices
- Gas Annual Data
- Energy Database
- Reports
- KPI
- Default
- Administration
- State Machine

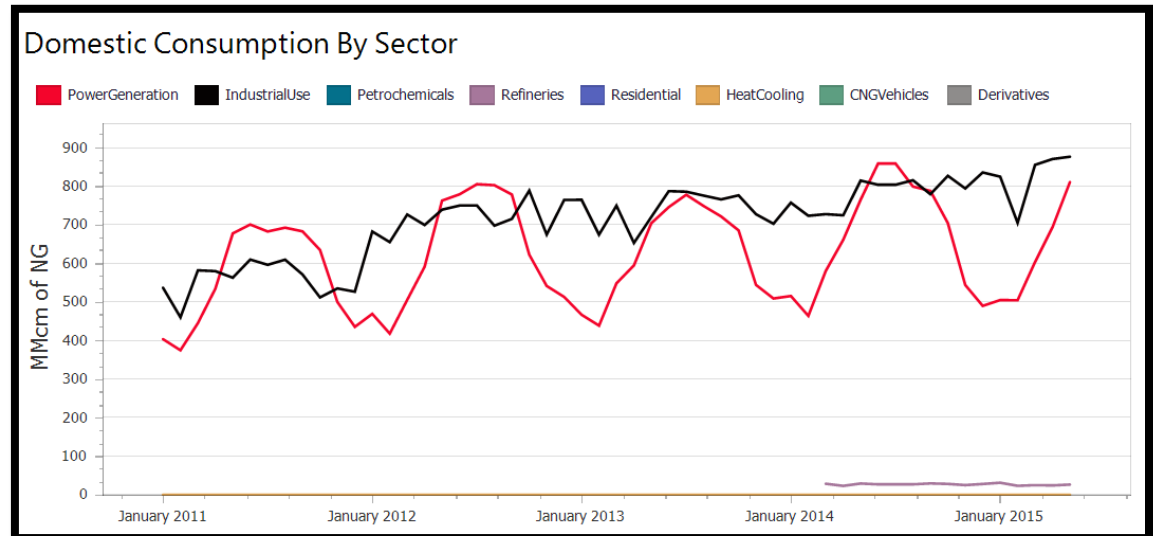
Validation Rule

Country Map / M.Arafat / User GECE / MQ Short / Validation Rule

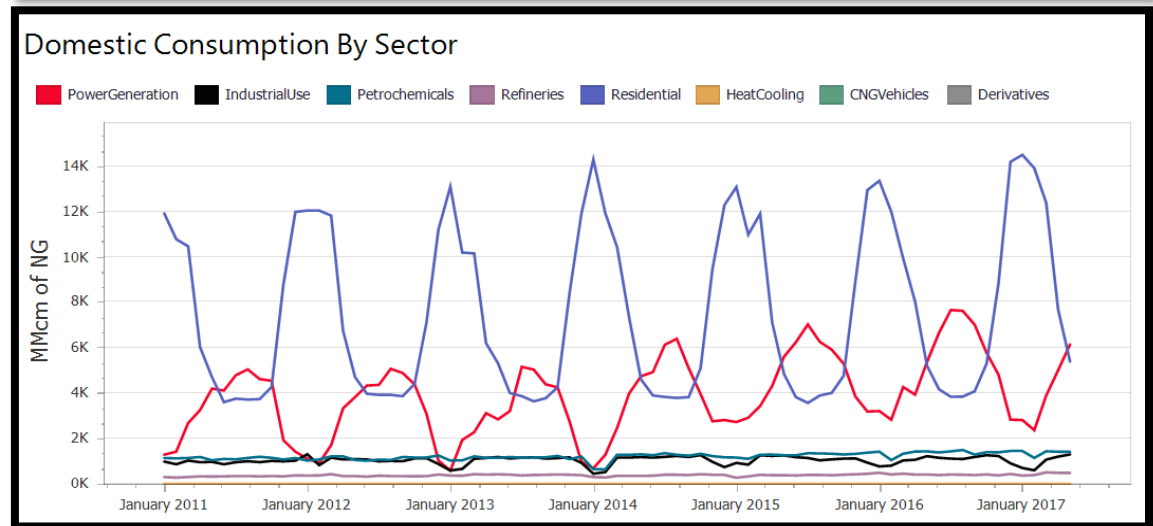
Country	Questionnaire Type	Data Point	Is Required
Country: Algeria (Count=8)			
Country: Bolivia (Count=15)			
Questionnaire Type: GECE Monthly (Count=15)			
<input type="checkbox"/>	<input type="text"/>	DomesticConsumptionHeatCooling	NA
<input type="checkbox"/>	<input type="text"/>	ExportLNG	NA
<input type="checkbox"/>	<input type="text"/>	ExportPipeline	Yes
<input type="checkbox"/>	<input type="text"/>	FromOtherResources	NA
<input type="checkbox"/>	<input type="text"/>	ImportLNG	NA
<input type="checkbox"/>	<input type="text"/>	ImportsPipeline	NA
<input type="checkbox"/>	<input type="text"/>	IndigenousProduction	Yes
<input type="checkbox"/>	<input type="text"/>	IndustrialUse	Yes
<input type="checkbox"/>	<input type="text"/>	LNGProduction	NA

2.3. Time Series Visual Checks : Seasonal Patterns

- Red Line = Gas consumed in Power Sector, the peaks are during **summer** time.



- Blue Line = Gas consumed in Heating at residential, the peaks are during **winter** time.

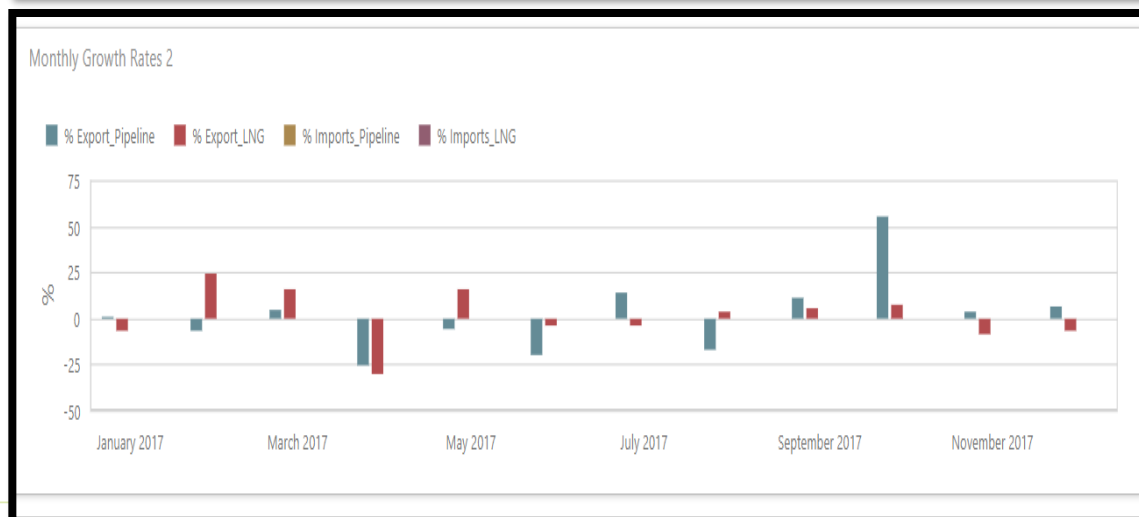


2.4. Time Series Visual Checks : Monthly Change

- DEC system highlighted that in April 2017 a country's production, exports and consumption in power sector decreased by around **25% M-o-M basis !**

	Questionnaire Date	Indigenous Production	Market Production	Export Pipeline	Export LNG	Domestic Consumption Observed	Power Generation
	Dec 2017	7.3 %	0.7 %	6.2 %	-6.8 %	-1.4 %	14.1 %
	Nov 2017	0.2 %	10.6 %	3.4 %	-8.9 %	33.0 %	-9.5 %
	Oct 2017	3.2 %	25.1 %	55.4 %	7.5 %	7.6 %	-1.6 %
	Sep 2017	-4.0 %	-0.8 %	11.2 %	5.8 %	-10.6 %	3.4 %
	Aug 2017	-0.4 %	-5.1 %	-16.9 %	3.2 %	-0.2 %	-30.6 %
	Jul 2017	1.3 %	14.7 %	13.4 %	-3.7 %	26.9 %	24.7 %
	Jun 2017	-2.0 %	-11.3 %	-19.8 %	-4.4 %	-6.0 %	23.5 %
	May 2017	-0.2 %	-3.3 %	-5.8 %	15.8 %	-10.8 %	8.7 %
	Apr 2017	-5.0 %	-25.4 %	-25.3 %	-29.8 %	-24.1 %	-8.0 %
	Mar 2017	10.5 %	0.9 %	4.7 %	15.6 %	-6.4 %	18.1 %
	Feb 2017	-6.1 %	-4.4 %	-7.0 %	24.5 %	-12.4 %	-10.3 %
	Jan 2017	0.6 %	0.5 %	1.0 %	-6.7 %	2.8 %	-15.1 %

- And its Pipeline exports increased by **55%** in
- October 2017.
- Let us check !

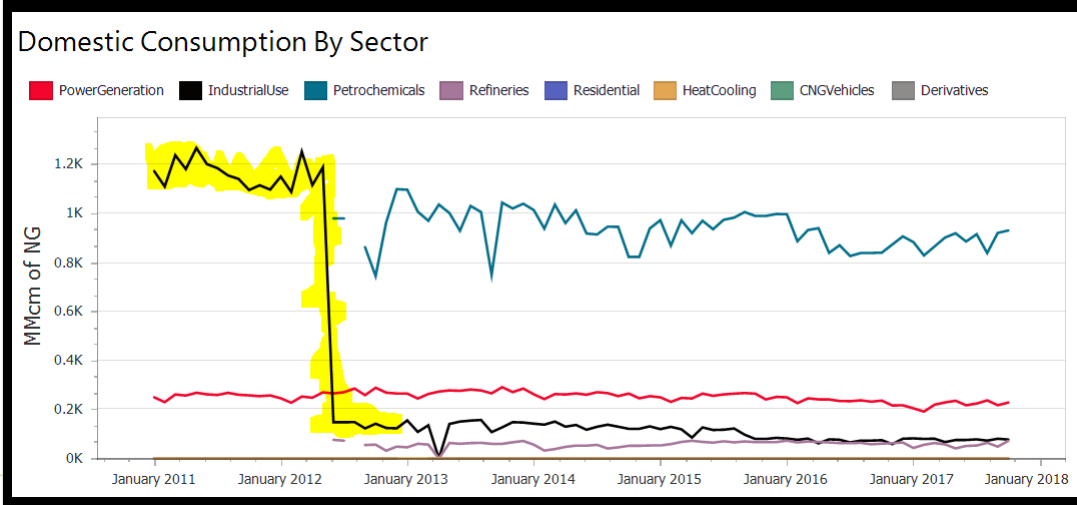
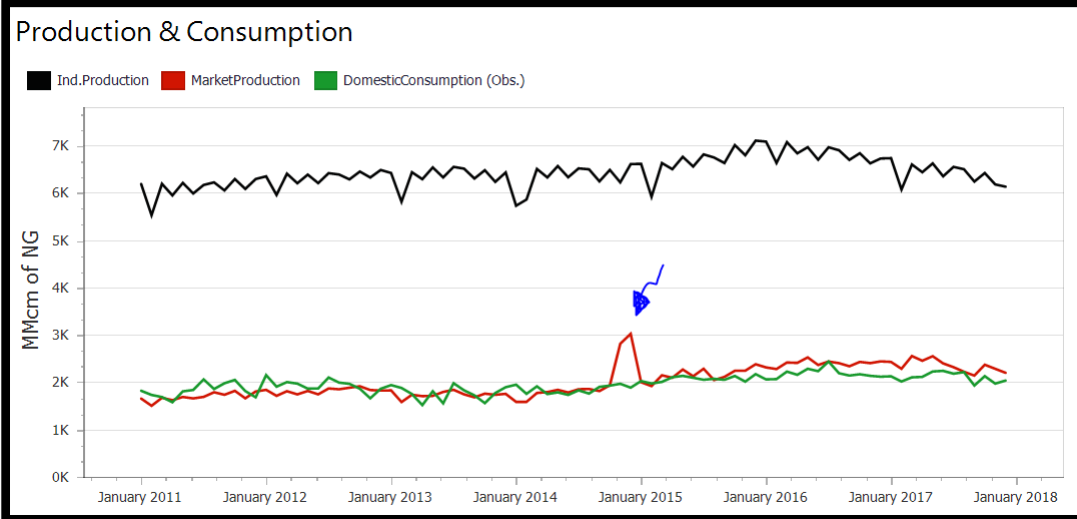


2.5. Visual Checks

During general visual check, you can pick up quality issues like these !

- The production increased by 50% in two points only with no justifications in the data.

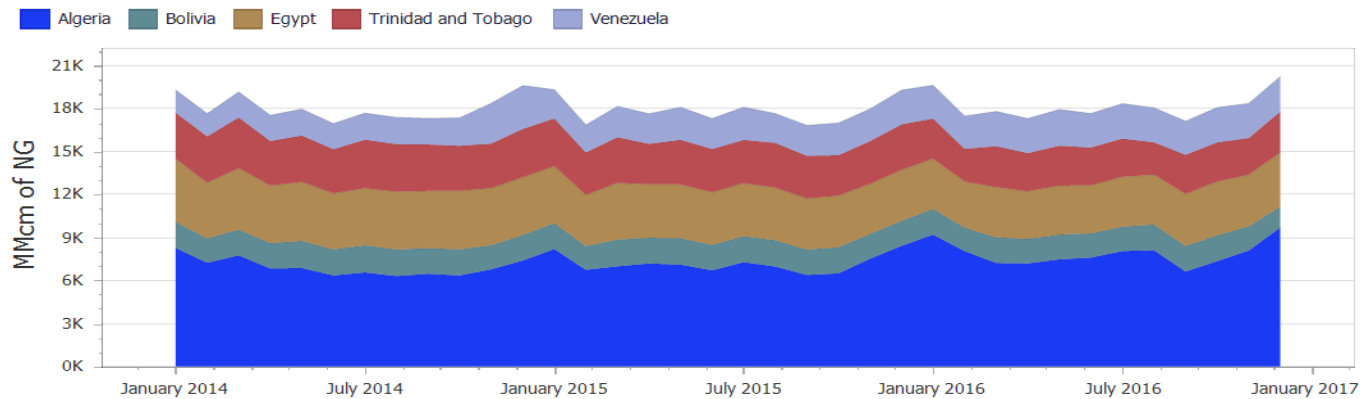
- Gas consumption in industrial sector dropped by around 80% and stayed stable !



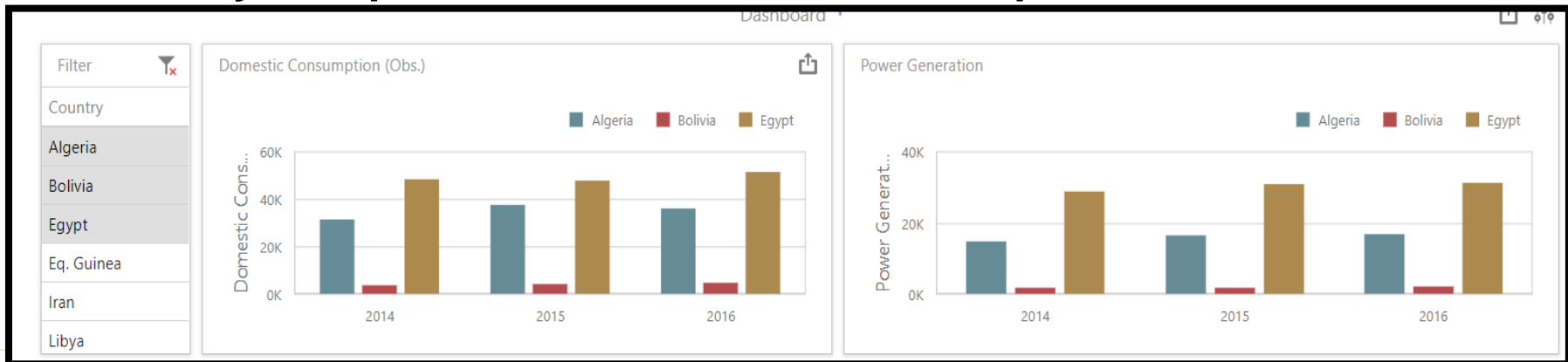
2.6. Dashboard Analysis

- Share of each country in GECF Production

Marketed Production (MMcm)



- Country Comparison - Annual Gas Consumption in Power Sector

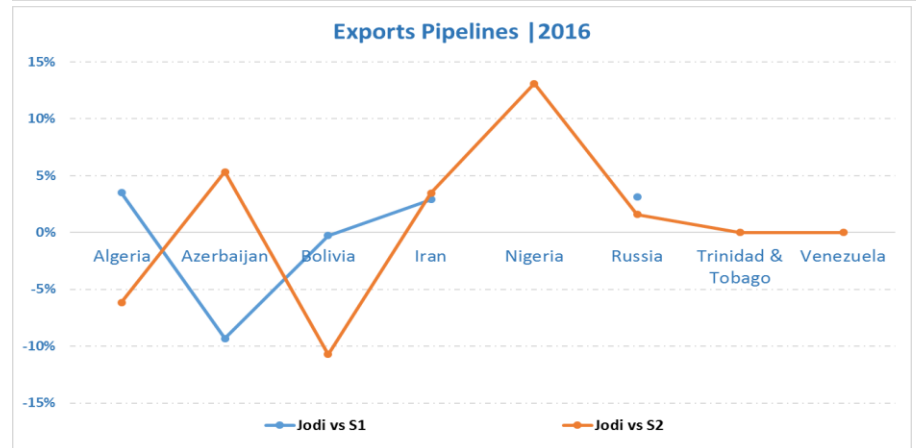
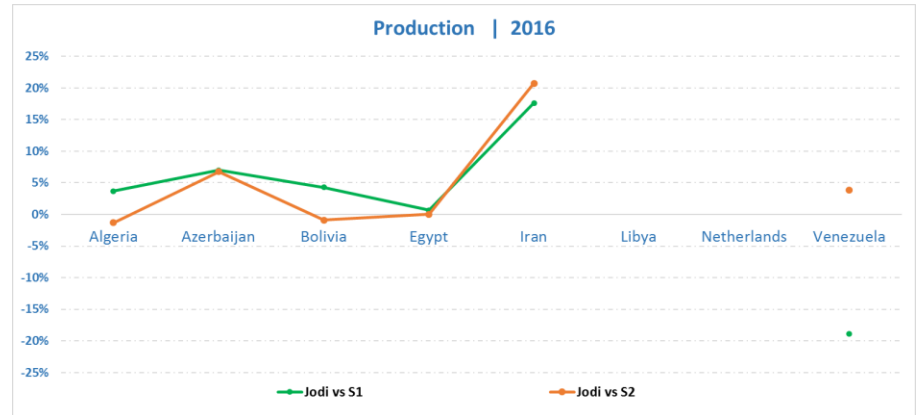


3. Consistency with other Data Sources

- DEC allows access to a variety of energy data sources and let to benchmark a wide range of data flows.
- Benchmark of GECF Monthly Primary Data with Energy Data Secondary Sources.

3. Consistency with other Data Sources (Cont.)

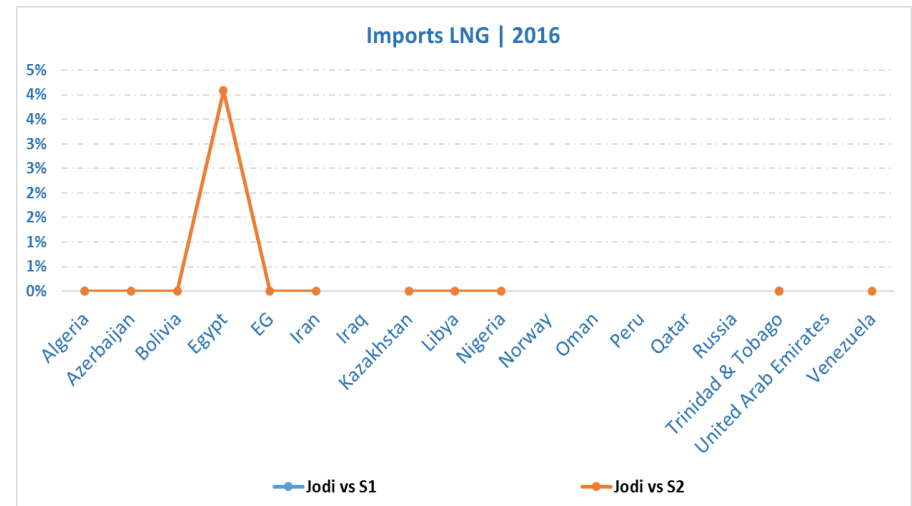
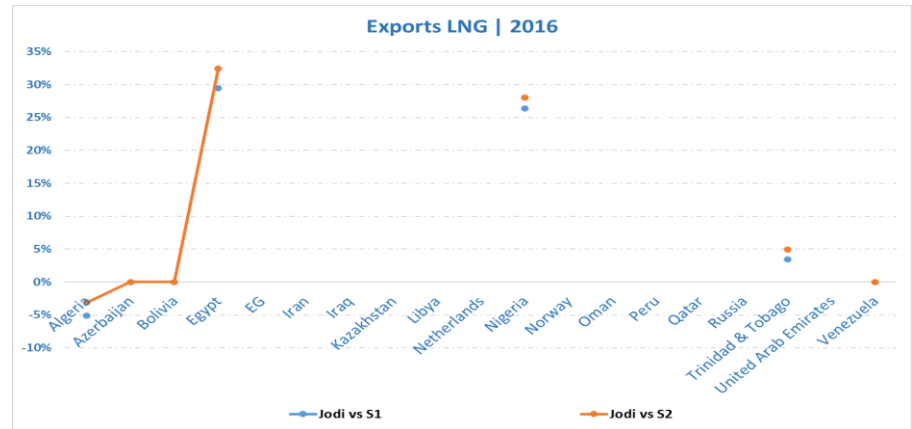
- Differentiation in data flow definition that may create disparity in data variance generated from different secondary sources for some countries .
- Per unit of measurement (Bcm), the gap is estimated at 0.01



3. Consistency with other Data Sources (Cont.)

Irregularity of LNG exports in 2016.

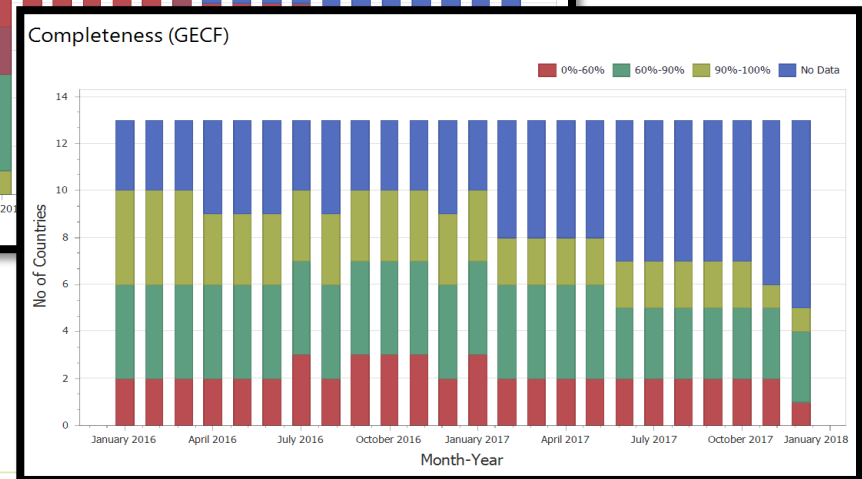
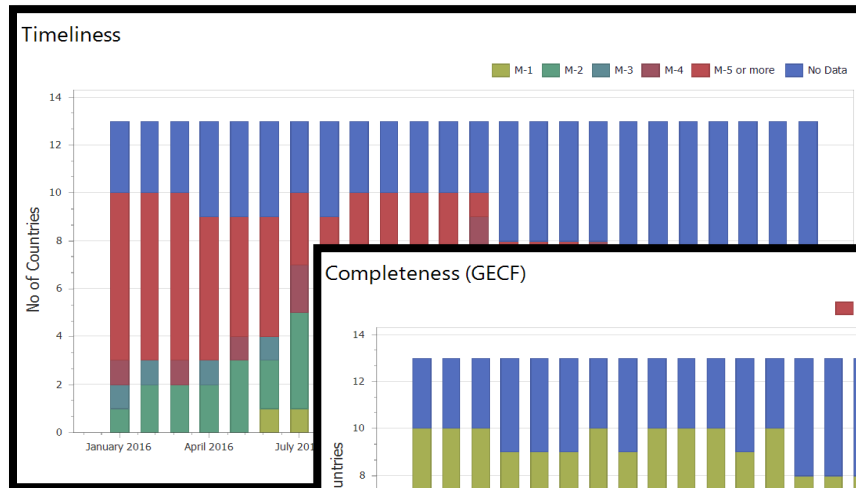
- Volume equivalent to two cargoes had not been assessed by the secondary sources generating a gap difference of 30%.
- Measurement gap.
- Volumes measured at regasification plants vs. volumes converted using conversion factors from TM to Bcm.



4. Data Quality Assessment Indicators

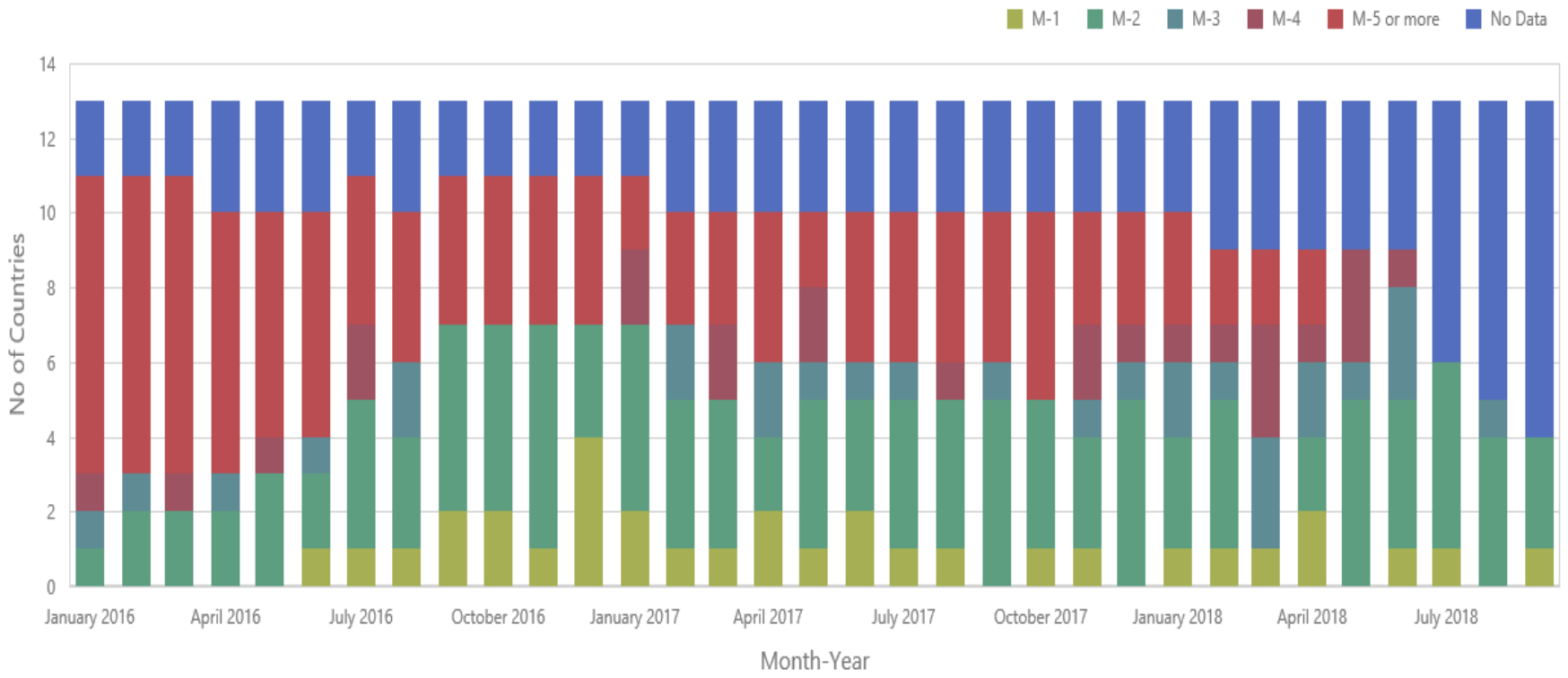
- **Timeliness:** Questionnaire submission time (M-2, every 10th of the month)
- **Completeness:** Fill all applicable & available data-points in the questionnaires
- **Sustainability:** Continuous and predictable submission on MQ & AQ

- DEC System automatically generates statistics and charts of Sustainability, Timeliness and Completeness.



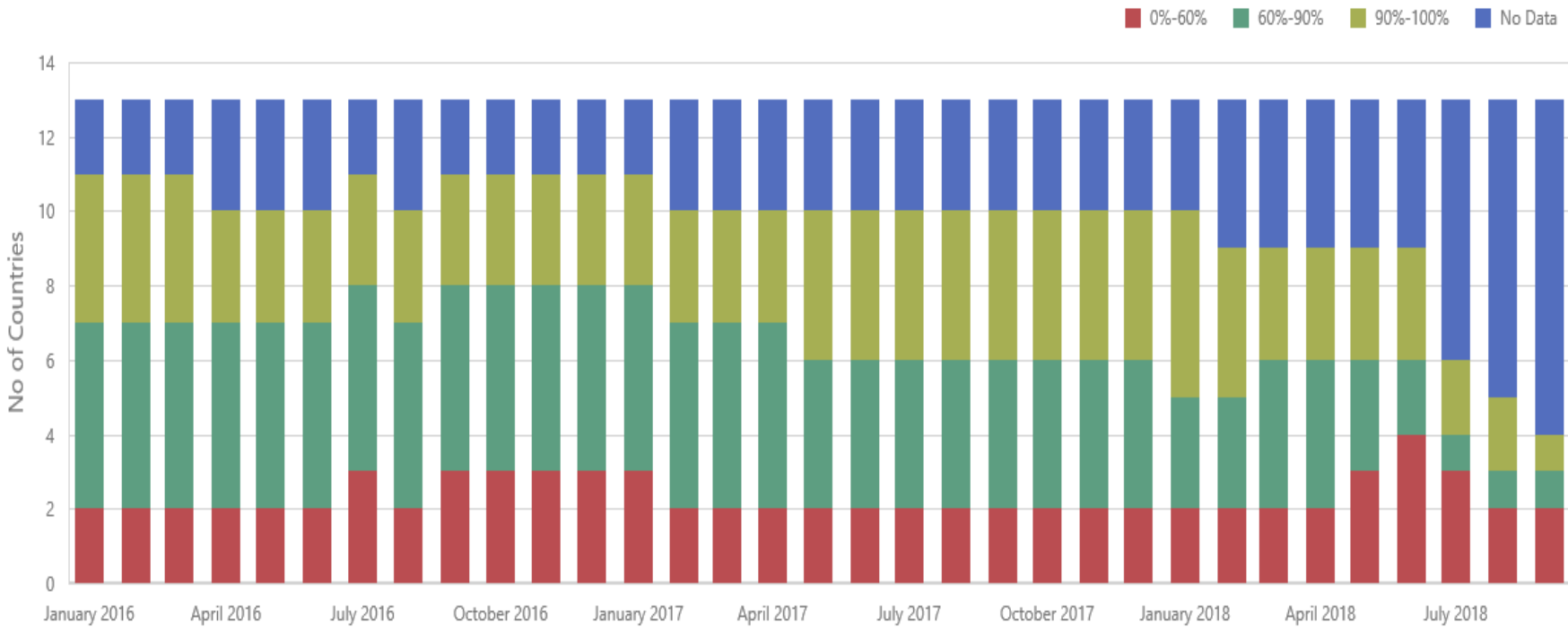
- **Assessment Code**

4.1. Timeliness



Green : Acceptable & **Red** : delayed & **Blue** : No data received yet.

4.2. Completeness



Green : > 60% & **Red** : < 60% & **Blue** : No data received yet.

4.3. Sustainability

Year	Algeria	Bolivia	Egypt	Eq. Guinea	Iran	Libya	Nigeria	Oman	Qatar	Russia	Trinidad and Tobago	United Arab Emirates	Venezuela	Grand Total
2011	0	12	12	0	12	0	0	12	0	0	12	0	12	72
2012	0	12	12	6	12	12	0	12	0	0	12	0	12	90
2013	0	12	12	12	12	12	0	12	11	0	12	0	12	107
2014	12	12	12	6	12	12	0	12	12	0	12	0	12	114
2015	12	12	12	12	12	12	12	5	4	0	12	12	12	129
2016	12	12	12	12	12	3	12	0	5	12	12	12	12	128
2017	12	12	12	12	12	0	12	0	12	12	12	1	12	121
2018	9	1	9	6	7	0	9	0	10	6	8	0	6	71
Grand Total	57	85	93	66	91	51	45	53	54	30	92	25	90	832

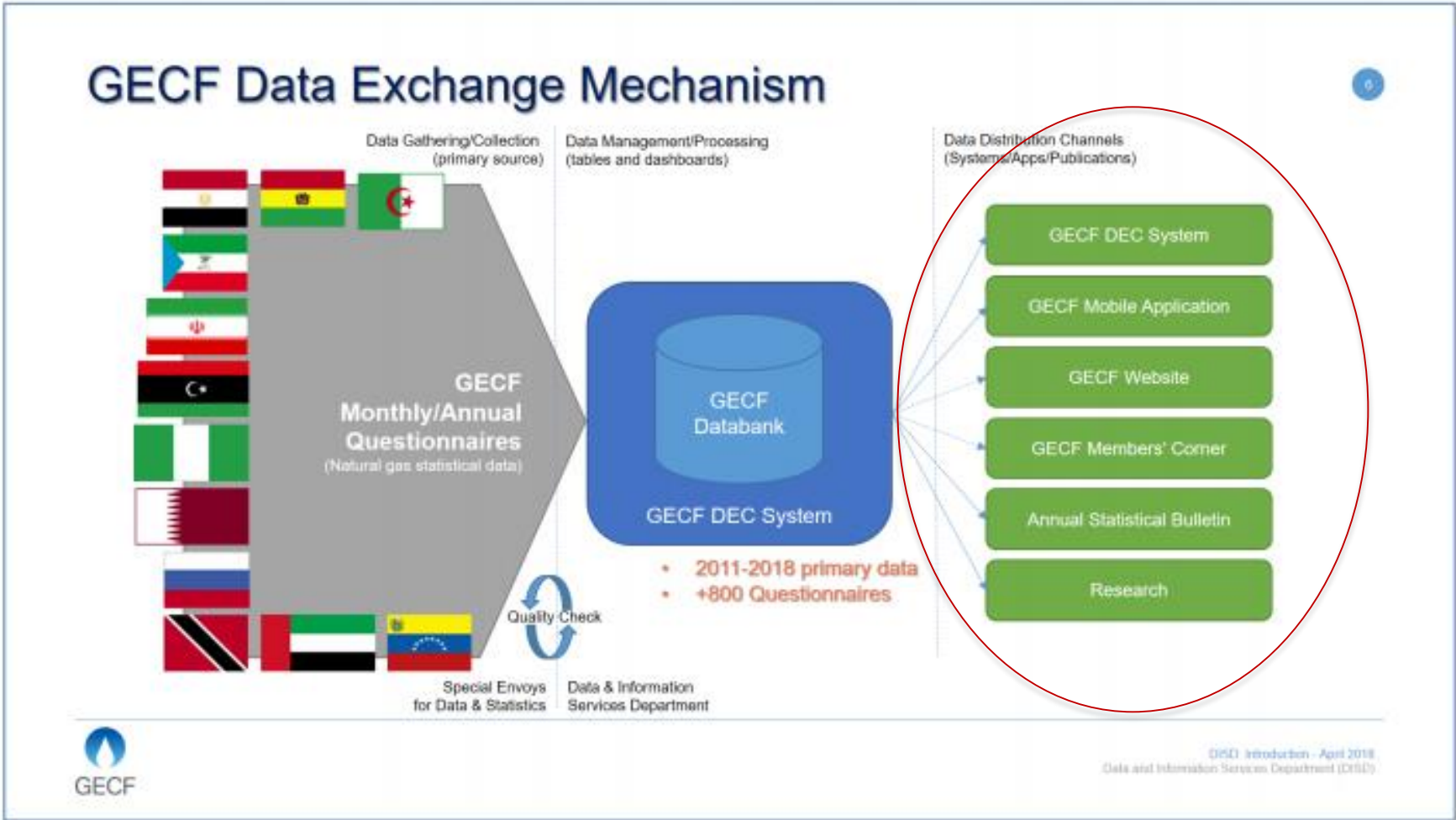
- Red <= 25% of the expected questionnaires
- Yellow > 25% & < 75 % of the expected questionnaires
- Green > 75% of the expected questionnaires

5. Monthly Data Assessment : Smiley Faces

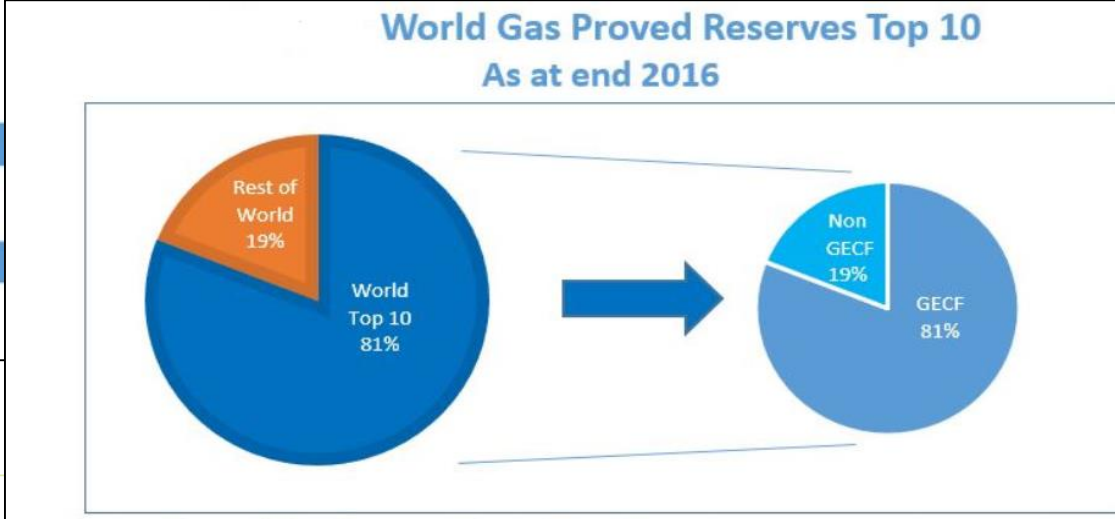
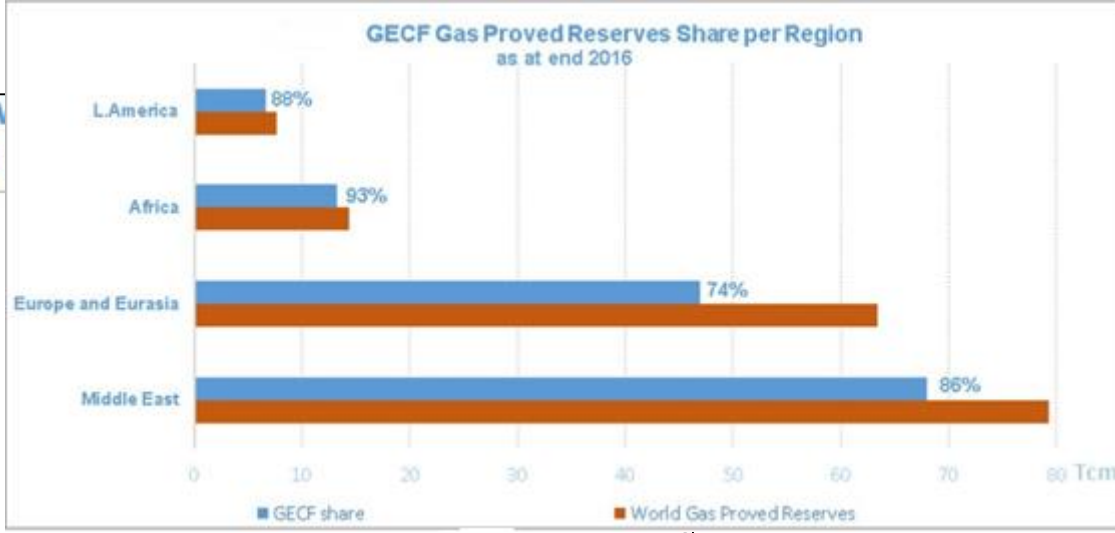
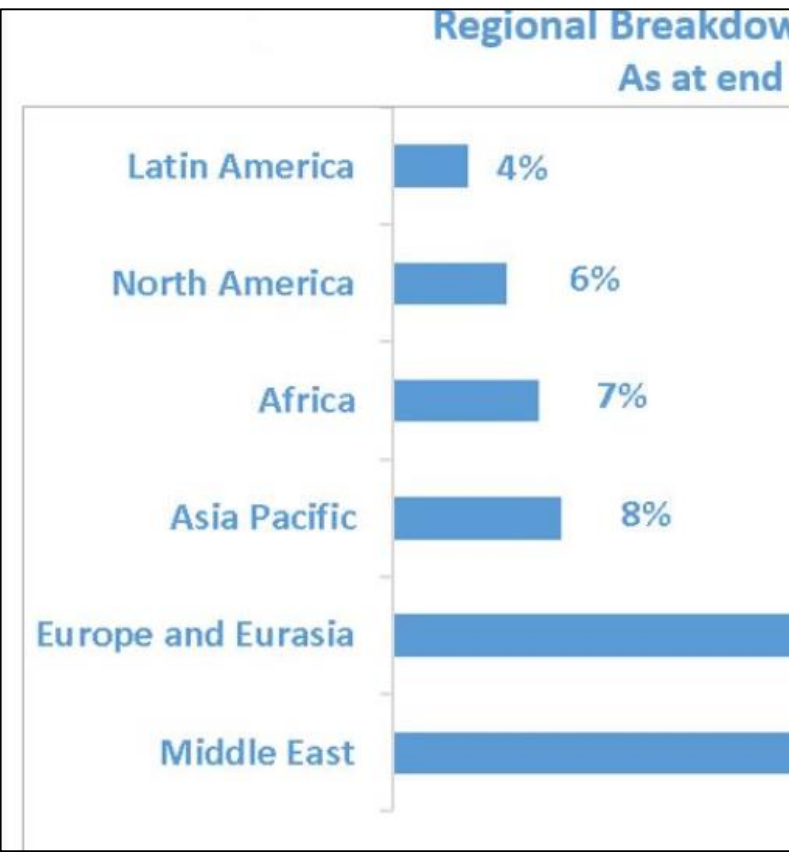
- From January to June 2018

Country	Sustainability	Timeliness	Completeness (%)	Sustainability	Timeliness	Completeness (%)
Algeria	6	5	70%	😊	😐	😐
Bolivia	1	1	100%	😞	😞	😊
Egypt	6	2	100%	😊	😞	😊
Eq. Guinea	0	0	0%	😞	😞	😞
Iran	2	1	70%	😞	😞	😐
Libya	0	0	0%	😞	😞	😞
Nigeria	6	4	70%	😊	😐	😐
Oman	0	0	0%	😞	😞	😞
Qatar	6	6	40%	😊	😊	😞
Russia	5	3	30%	😐	😞	😞
Trinidad and Tobago	5	1	100%	😊	😞	😊
United Arab Emirates	0	0	0%	😞	😞	😞
Venezuela	4	1	100%	😐	😞	😊

6. Data Transparency within GECF

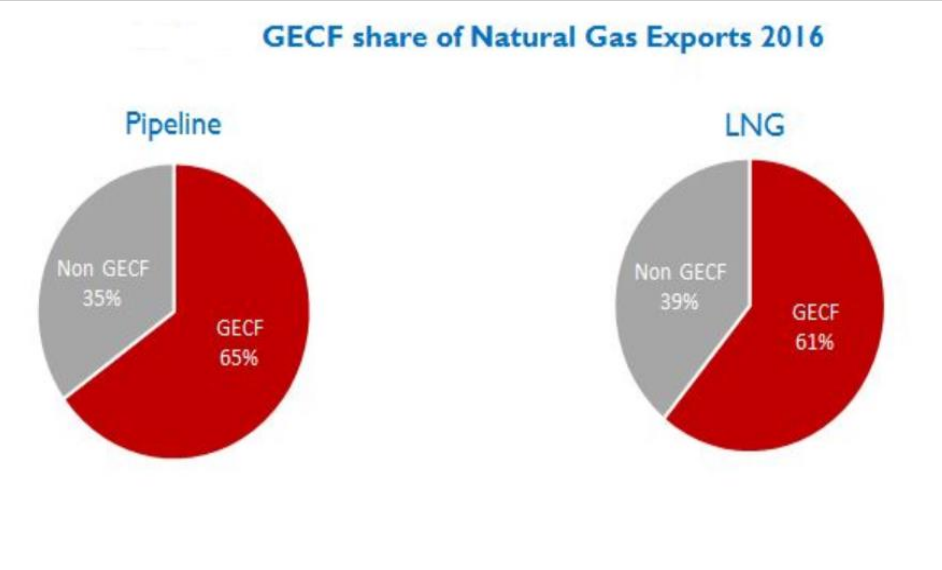
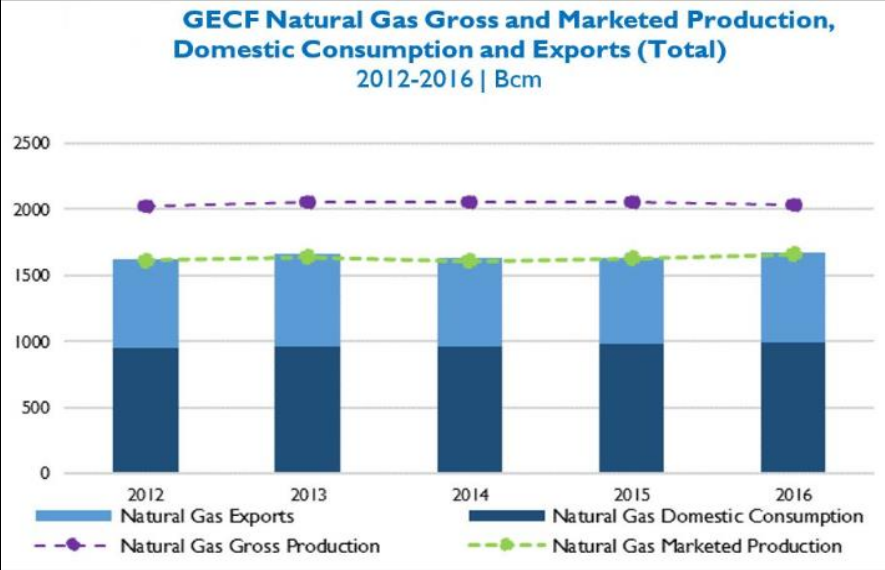


6. Data Transparency within GECF

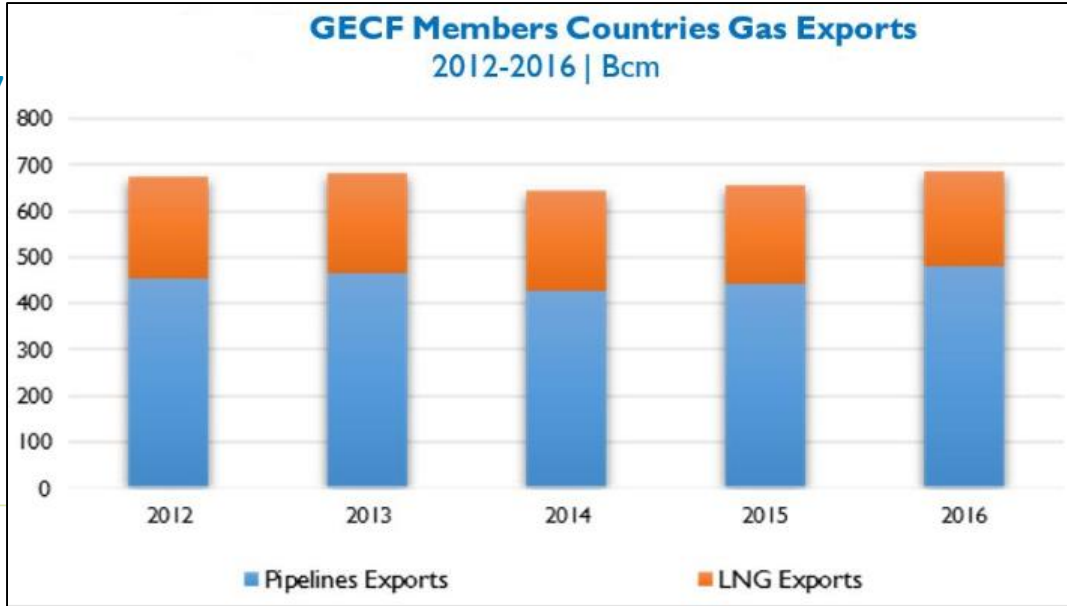


Source: GECF Analyses

6. Data Transparency within GECF



Source: GECF ASB2017



6. Data Transparency within GECF

JODI Capacity Building

GECF Workshops, SEDAS ANNUAL MEETING and DEC workshop

Regional Workshops at country level (Trinidad and Tobago, Equatorial Guinea)

GECF Annual Statistical Bulletin (ASB)

GECF Global Gas Outlook 2040

GECF Monthly Short Term Gas Market Report

The Gas Lecture Series

GECF Website <http://www.gecf.org>

GECF Monthly Statistical Bulletin (MSB)

GECF Quarterly Statistical Bulletin (QSB)

Inter-organizations technical cooperation

Questions ?

Thanks for Your Attention !

Better Data – Better Decisions

JODI-Gas Data Quality Assessment

Amira Remadna

Energy Data Analyst, GECF/DISD

Mohamed Arafat,

Data Bank Analyst, GECF/DISD



www.jodidata.org

