The JODI Gas Questionnaire and the JODI Gas Manual

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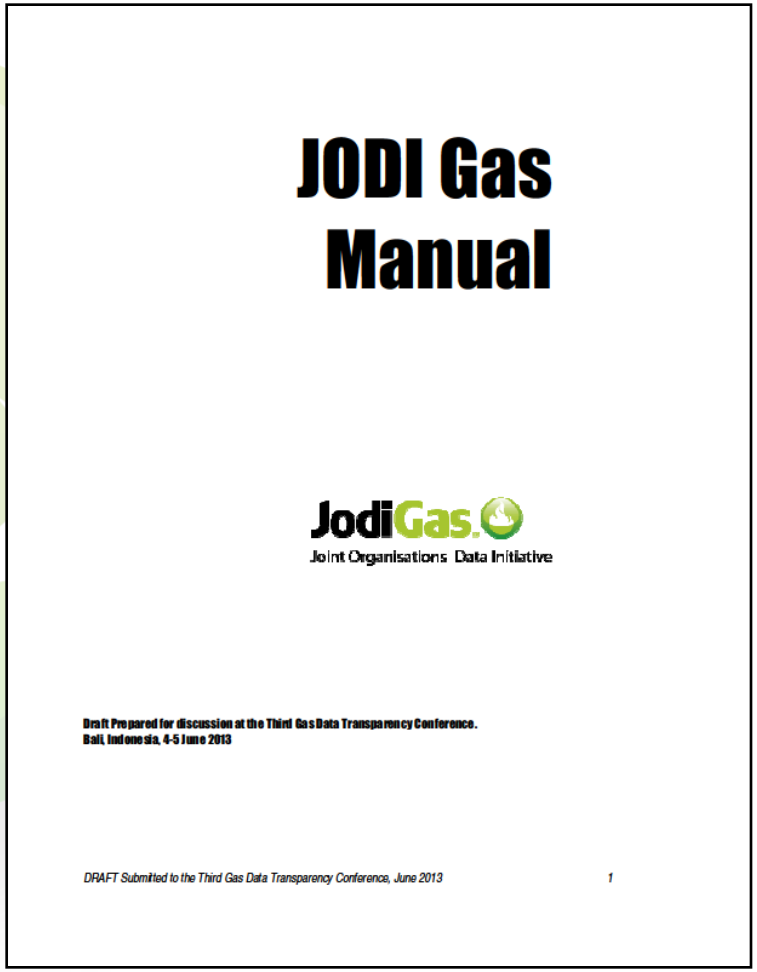
Outline

- Why a JODI Gas Manual?
- Preparation process
- Structure and content of the manual (including the questionnaire)
- Data measurement units
- What next?



Why a JODI Gas Manual?

The JODI Gas Manual was prepared to provide

- Guidance on the reporting of the JODI Gas Questionnaire
- Reference for concepts and definitions
- Examples of data collection and validation methods
- Examples of country practices in the collection of JODI gas data

It is meant to be of use to both compilers AND users of monthly gas data

Structure of the Manual

1. Introduction
2. The questionnaire
3. What is Natural Gas?
4. Flow definitions
5. Measurement units
6. Data Quality
7. Data Collection/Compilation
8. Examples of country practices
9. JODI Gas Database

   Annexes

Chapter 1

Background on the need for a manual:

- Natural gas to become more important in the future, as a “clean”, plentiful and dynamic fuel
- Recent increase in trade (LNG), and price volatility
- To ensure consistent reporting by data providers
- To ensure clear understanding of data by users

A JODI gas manual is needed because better JODI gas data are needed

Chapter 2: The Questionnaire

JOINT ORGANISATIONS DATA INITIATIVE GAS QUESTIONNAIRE

Country
Month
Year

	Natural Gas million m^3 (at 15°C, 760 mm hg)	Natural Gas Terajoules	*Natural Gas 1000 tonnes*
	A	*B*	*C*
Production			
Receipts from Other Sources			
Imports			
LNG			
Pipeline			
Exports			
LNG			
Pipeline			
Stock Change			
Gross Inland Deliveries (Calculated)	0	0	
Statistical Difference (Calculated)	*0*	*0*	
Gross Inland Deliveries (Observed)			
of which: Electricity and Heat Generation			
Closing stocks			

Mass to volume conversion factor of LNG (if you have a specific figure)

m^3/tonne	LNG
Conversion factor	

Chapter 2: Questionnaire

To improve comparability, the manual made modifications to the previous questionnaire

- New line for “Receipts from other sources” explicitly includes **blended** biogas and manufactured gases
- “Power generation” now “Electricity and heat generation”
- Removed “of which: own use and losses”
- “Statistical difference” now calculated
- Tons are now a separate column (only for LNG trade)
- Brief “definitions” sheet: short reminders of key points

Chapter 3: What is Natural Gas?

- Definition consistent with IRES
- *"…mixture of gaseous hydrocarbons, primarily methane, but generally also including ethane, propane and higher hydrocarbons…and some non-combustible gases"*
- Includes shale gas, coal seam gas and colliery gas. When distributed may contain blended biogas or manufactured gas
- NGLs excluded

Chapter 4: Flow Definitions

- Definitions are consistent with IRES and InterEnerStat, which ensures that JODI data are compatible with other energy data and other economic statistics standards (e.g. SNA)
- Definitions are simple, easy to follow for regular monthly reporting
- Definitions list specific inclusions/exclusions to help both data providers and users

Chapter 4: Flow Definitions

Production:

- Refers to dry, marketable production within national boundaries including offshore
- Quantities reinjected, flared and vented *in situ* are excluded
- NGLs and impurities such as sulphur are excluded

Receipts from other sources:

- Accounts for gases accounted for elsewhere blended into natural gas (e.g. coke oven gas, biogas); excludes their use when combusted pure

Chapter 4: Flow Definitions

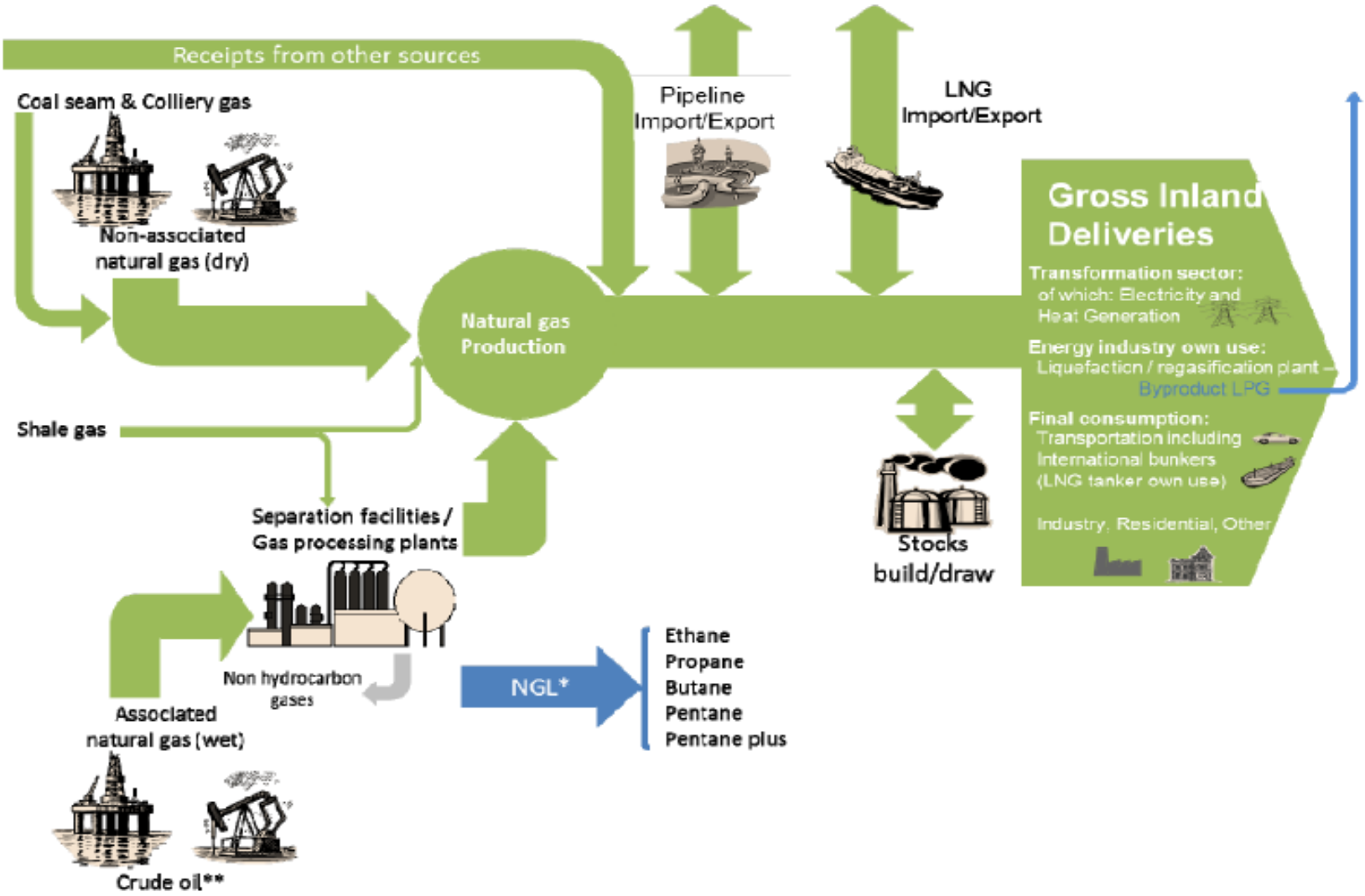
Imports and *Exports*

- Includes both pipeline and LNG tanker trade
- Goods-in-transit *should* be excluded (difficult to determine in complex pipeline systems)

Stocks

- Cushion gas and gas reserves (unextracted gas) should be excluded

Chapter 4: Flow Schematic



Chapter 4: Flow Definitions

- Though definitions exist, exceptions may still arise
- This may cause differences in reporting, but should be clearly indicated in country notes
- Examples:
  - inclusion of natural gas in transit via pipeline in trade
  - "*Receipts from other sources*" included with production
  - only main activity producers (or electricity-only plants) included in deliveries to "*Electricity and heat generation*"

Metadata are important!

Chapter 5: Measurement Units

- Units to be used in reporting
  - Volumetric units: Million m^3, standard conditions
  - Energy units: TJ, gross basis
  - Mass units: tons [LNG trade only]
- Conversion between energy units and volumetric/mass units may depend on flow
- Calorific value needed if only one unit is reported (but countries are asked to report in both main units)

Chapter 6: Data Quality

- Data quality covers several dimensions
- Chapter 6 focuses on checks that can be done to assess accuracy of the data
  - balance check
  - stocks check
  - calorific value check
  - time series check
- Common reporting errors
  - shows typical deviations from standard definitions, and common misconceptions

Ultimately, data quality is difficult to measure, but it's important to try!

Chapter 7: Data Collection/Compilation

- Guidance on data sources and data collection methods (production data from extraction companies, trade data from customs offices etc)
- Discussion of treatment of missing data and confidential data
- Brief discussion of benchmarking, the reconciling of monthly and annual data (publishing time lags make this less relevant for JODI)

Chapter 8: Country Practices

- A diverse list of countries
  - Azerbaijan
  - Brazil
  - Thailand
  - United Kingdom
- **Not** an explicit compilation guide, should not be seen as best practices; more an opportunity to learn from each other

Chapter 9: The JODI World Database

- Shows the flow of data from:

  Company> Government> Partner Organisation> IEF> JODI Gas World Database>User
- Lists the contents and features of the world database
- Describes the data quality colour codes to be used

Annexes

- Flow diagrams
- Standard units and conversion factors (for standard to normal conditions, energy to volume, volume to mass etc…)

Examples: where do data go?

200 TJ of wet associated gas produced onshore, including 50 TJ of propane that's separated at a NGL plant

NGLs are excluded from the JODI gas questionnaire!

	Natural Gas Terajoules	*Natural Gas 1000 tonnes*
	A	*B*	*C*
		150 TJ
		50 TJ
		1 TJ
		1 TJ
Exports		
LNG		
Pipeline		
Stock Change		
Gross Inland Deliveries (Calculated)		

Does not enter the natural gas chain, so is excluded from JODI gas.

15 TJ that are piped directly through the country (imported then exported); 1TJ is used for the operation of the pipe (so only 14TJ is exported).

100 TJ of biogas, produced at waste plant and used for power generation at same plant

exclude "goods in transit" whenever possible own use be consi import and part of demand).

50 TJ of coke oven gas, blended in the grid for final delivery

Future steps

- With agreed-upon definitions, the reporting burden on countries is reduced and the transparency of the JODI Gas data should increase
- Better, more transparent data was a pre-requisite to launching the JODI Gas world database at the IEF Ministerial in Moscow, May 2014
- More trainings, continuous improvement

Data quality improvement never stops!

Thanks!

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https://www.jodidata.org/_resources/files/downloads/manuals/jodi-gas-manual.pdf

Annex 1: Conversion between Standard & Normal Conditions

Table A2.5: Conversion equivalents between Standard cubic metres (m^3) and Normal cubic metres (m^3)

From: \ To	Standard m^3	Normal m^3
Standard m^3	1	0.948
Normal m^3	1.055	1

Note: Standard cubic metre (m^3) refers to standard measurement conditions at 15ºC and 760 mm Hg. Normal cubic metre (m^3) refers to normal measurement conditions at 0ºC and 760 mm Hg.

Annex 2: Conversion between LNG and Natural Gas Units

Table A2.6: Conversion equivalents between LNG and Natural Gas units

To: / From	Metric Tons of LNG	m^3 of LNG	Standard m^3(a)
Metric Tons of LNG	1	2.2	1360
m^3 of LNG	0.45	1	615
Standard m^3	$7.35*10^{-4}$	$1.626*10^{-3}$	1

(a) 1 Standard m^3 = 40 MJ.