



Gas Exporting Countries Forum

10th JODI regional training workshop

Presentation on the use of data in energy modeling

by

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Outline

- ▶ Introduction.
- ▶ Use of data in energy modeling: Example of US National Energy Modeling System.
- ▶ Importance of data quality in energy modeling.
- ▶ Data quality assessment models.
- ▶ Recommendations.

Collecting Data?

Country

- Evaluate energy sector/company operational/financial performance,
- Monthly reporting and monitoring,
- Fiscal duties,
- Regulation obligations,
- Energy sector value added,
- Economic growth update,
- Contribution to national income,

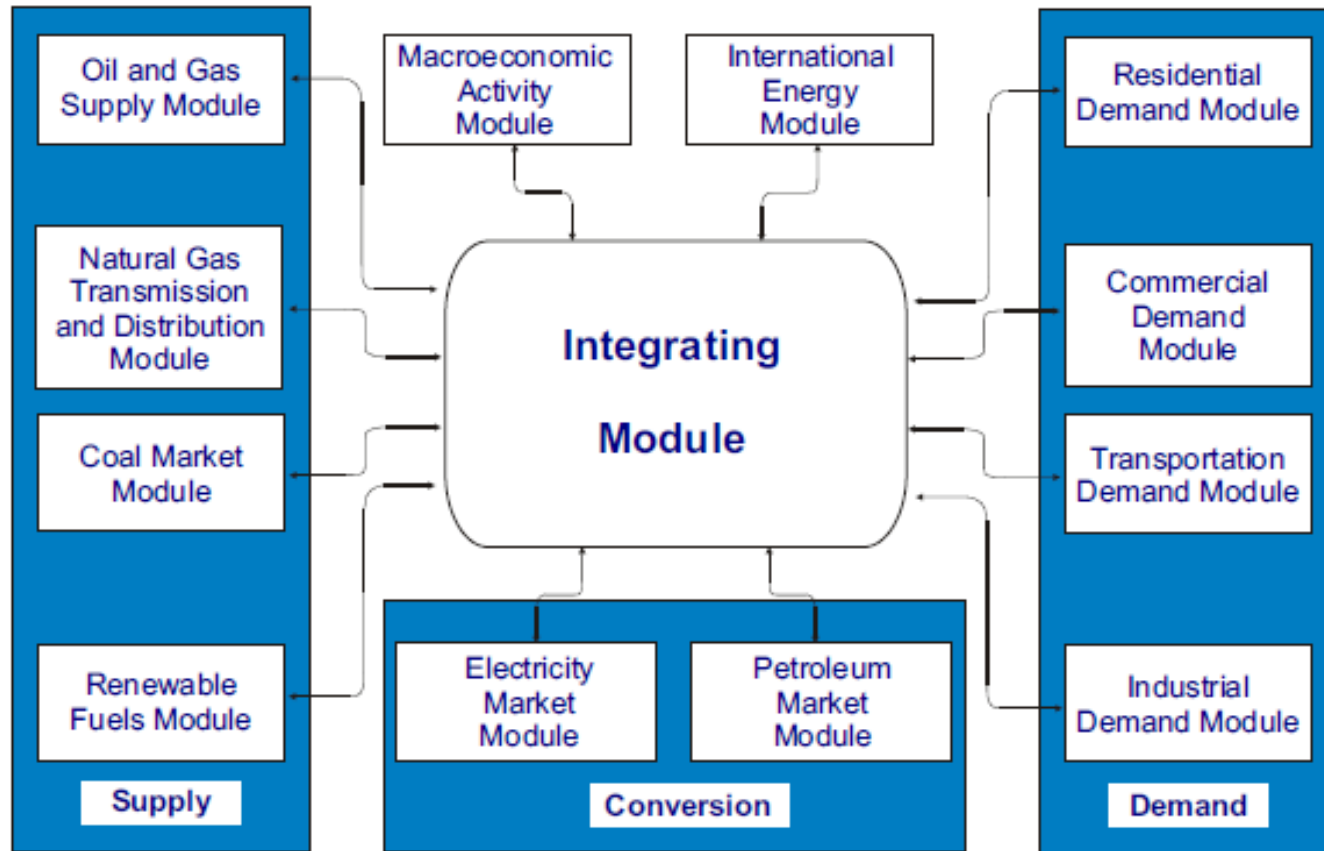
- Company operational & financial reports
- Regulation agencies / Energy ministry statistics/reports
- National statistics offices / Finance ministry

JODI/IO's

- Increase global energy markets transparency,
- Reduce energy markets volatility,
- Work on same background reliable energy data,
- Elaborate comprehensive energy outlooks
- Give the right global energy market signals
- May trigger the launch of emergency plan if a market security issue occur

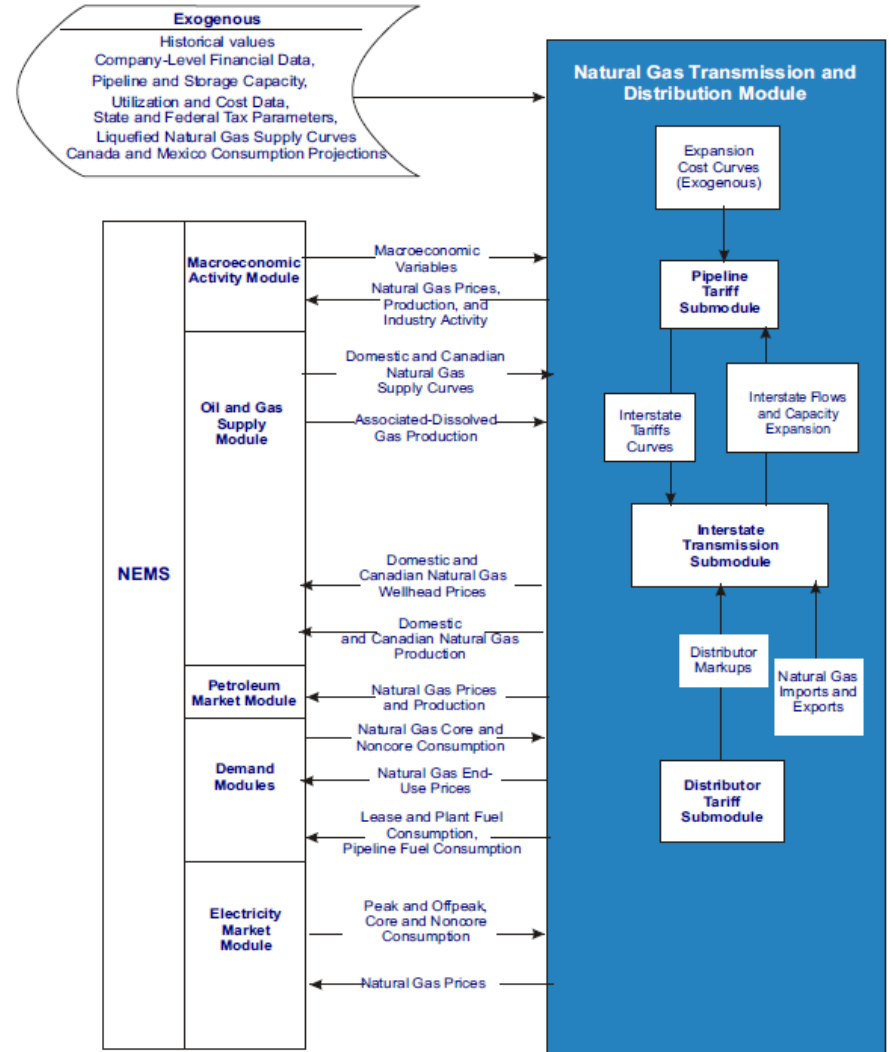
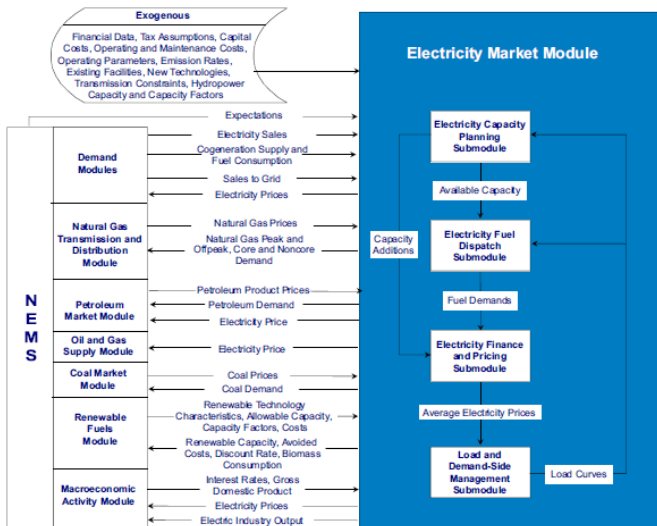
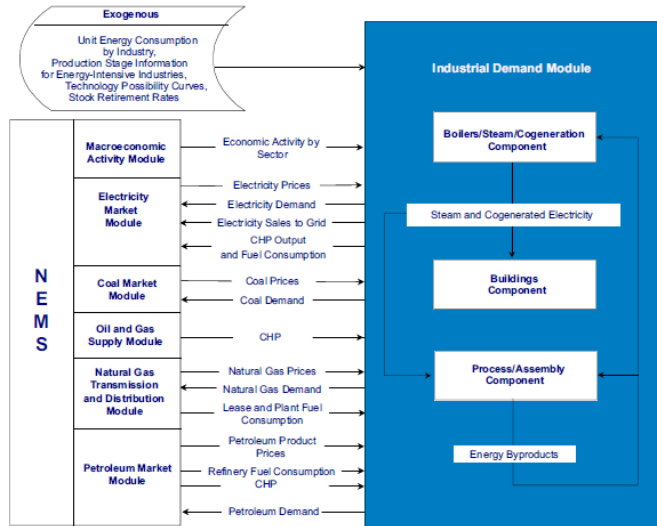
- Monthly market reports
- Annual statistical bulletins
- Short / medium / long term energy Outlooks

Use of data in energy modeling: Example of US National Energy Modeling System



Source: US Energy Information Administration

Use of data in energy modeling: Example of US National Energy Modeling System



Source: US Energy Information Administration

Importance of data quality in energy modeling

Use of data in energy modeling

Input/Historical data

- Energy demand by fuel,
- Energy prices/Tariffs,
- Energy Supply,
- Trade: imports/exports,
- Energy balances.
- ...

Model parameters

- Elasticities,
- Growth rates,
- Utilization rates,
- Recovery factors,
- Minimum/maximum share,
- Own use/losses ratios,
- ...

Data quality assessment models

50%

Failure rate or limited acceptance for data warehouses since 2004 (Gartner)

Causes of poor data quality

- Lack of supporting business processes
- Insufficient analysis techniques
- Data quality firewalls
- Business requirements documentation inexistent
- Undocumented definitions and missing semantics
- Inability to audit

Process for data quality assessment

Requirements

Quality parameters

Quality indicators

Quality integration

Recommendations

- International energy data quality conference/workshop
- Jodi annual report
- Energy information system standardization (audit?)
- Harmonization of international energy reports schedules
- International energy market report



Thank You for Your Attention

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